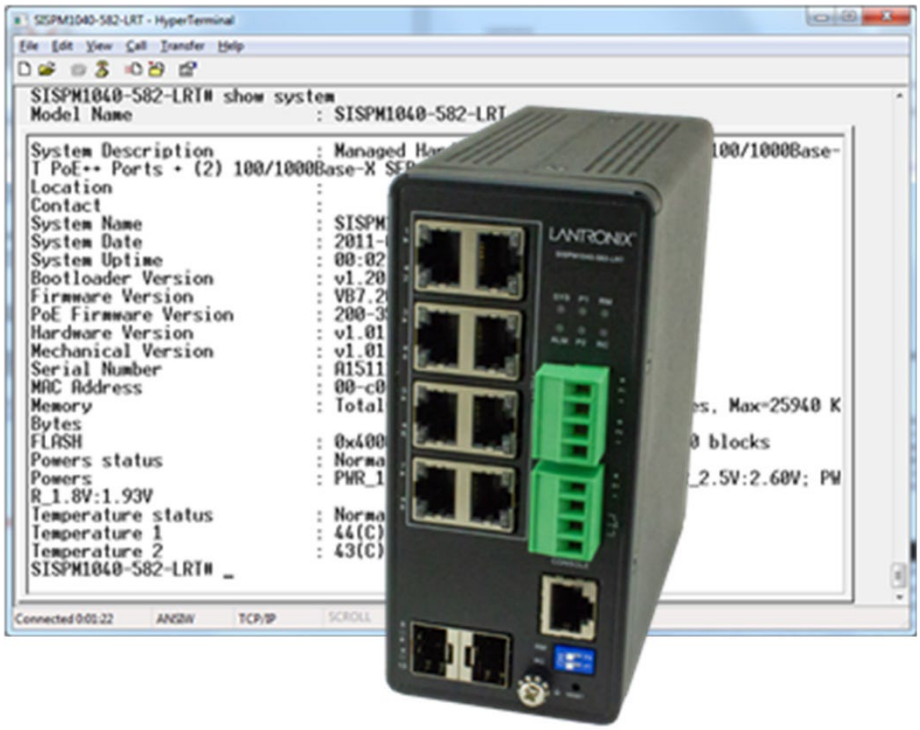

SISPM1040-582-LRT

Managed Hardened PoE++ Switch (8) 10/100/1000Base-T PoE++ Ports + (2) 100/1000Base-X SFP Slot

CLI Reference

Part Number 33757
Revision J November 2023

Intellectual Property

Warranty

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

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Revision History

Date	Rev	Description
9/28/21	G	FW VB7.20.0075: add API command “get_config_action_status” and fix API cannot delete old interface VLAN. Fix PoE Power Requested and Power Allocated not match. Add DI reboot switch when DI input goes High and fix DDM information updating. Fix DI/DO bug and fix PMD auto negotiation advertised capability info in LLDP packet of fiber ports. Fix Port issue with TN-EOT-CO and TN-EOT-RT copper modules. Add ‘ SystemDORelayOpenClose’ to MIB. Add note on debug command use.
9/28/22	H	FW vB.7.20.0121: update RADIUS server and add two new DMS icons. Initial Lantronix rebrand. Add First Time Wizard and DHCP IP per port and update SNMP and Auth Method default settings. Add DHCP option 229 (lighting server). Add ConsoleFlow and LPM features and update DMS Google Maps API information. Remove CLI command summary.
11/7/23	J	Change ConsoleFlow to Percepxion. Add DHCP per Port VLAN. Update SSH. Update to TLSv1.2 ciphers. Add two public OIDs. Automatically save config changes to Start-Up Configuration in Percepxion server. FW v B7.20.0191: Add API support in HTTPS. Update to Dropbear 2022.82.

Contents

1 Introduction

The SISPM1040-582-LRT is a managed PoE++ switch suitable for connecting and powering devices in hardened environments. It has (8) 10/100/1000 PoE++ ports with (2) 100/1000 dual speed SFP slots. The switch can supply up to 90 Watts per port on (4) ports or 60 Watts per port on (8) ports simultaneously. The switch also includes the embedded Device Management System (DMS) software that provides the advanced tools necessary for total management of all IP addressable devices. The unique DMS provides security integrators with lower overall cost, less downtime and easier management of the entire PoE+ network. Lantronix hardened switches are certified to operate reliably in harsh environments such as those found on factory floors, outdoor enclosures or other challenging environments.

1.1 Key Features

- Rapid Ring / Ring To Ring / Rapid Chain
- DMS (Device Management System) built in
- IEEE 802.3af/at/bt PoE++ Power over Ethernet
- ITU-T G.8031 Ethernet Linear Protection Switching (EPS)
- ITU-T G.8032 Ethernet Ring Protection Switching (ERPS)
- IEEE 1588v2 PTP
- IEEE 802.3ah OAM
- IEEE 802.1ag CFM (ITU-T Y.1731 Performance Monitoring)
- DHCP Server, DHCP Relay, DHCP Snooping, DHCP Per Port
- IEEE 802.3az Energy Efficient Ethernet (EEE) for green Ethernet applications
- IPv4/IPv6 L3 static route
- Percepxion and LPM support

1.2 Manual Overview

This manual gives specific information on how to operate and use the management functions of the switch via its Command Line Interface (CLI). This manual is intended for use by network administrators who are responsible for operating and maintaining network equipment; it assumes a working knowledge of general switch functions, the RS-232 Console , Internet Protocol (IP), and Telnet Protocol.

1.3 Related Manuals

- SISPM1040-582-LRT Quick Start Guide, 33754
- SISPM1040-582-LRT Install Guide, 33755
- SISPM1040-582-LRT Web User Guide, 33756
- SISPM1040-582-LRT CLI Reference, 33757 (this manual)
- SISPM1040-582-LRT API User Guide, 33826

Go to the Lantronix Resource Center for Lantronix Firmware, Manuals, Tech Support, Knowledge Base, FAQs, etc. Note that this manual provides links to third part web sites for which Lantronix is not responsible.

For SFP or SFP+ information see Lantronix SFP webpage.

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

2 CLI Management

Follow the steps below to make a network connection for CLI command management.

1. Locate the correct DB-9 (RS-232) cable with a female DB-9 connector. RS-232 cable is used for connecting a terminal or terminal emulator to the Managed Switch's RJ45 port to access the command line interface.
2. Attach the RJ45 serial port on the switch's front panel which used to connect to the switch for console configuration
3. Attach the other end of the DB-9 cable to an ASCII terminal emulator or PC Com-1, 2 port. For example, PC runs Microsoft Windows HyperTerminal utility.
4. At "Com Port Properties" menu, configure the parameters as below (see the next section).

Baud rate	115200
Stop bits	1
Data bits	8
Parity	N
Flow control	none

2.1 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 username and password to login into the Managed Switch are listed below:

Username: admin

Password: admin

After you log in successfully, the prompt displays as "<sys_name>#". It means you are an administrator and have full privileges for configuring the switch. If not logged in as the administrator, the prompt will be shown as "<sys_name>>", which means you are a guest and are not allowed the full set of CLI commands. Each CLI command has its privilege level of 0-15.

2.2 Navigating the Command Line

To display	Press	Description
more	-	dash key
next page	Space	space bar
continue	g	g key
quit	^C	Control C
parameters	?	Single question mark
syntax	??	Two question marks
available commands in table format	Tab key	available commands in table format

2.3 CLI Command Modes

The CLI is divided into several modes. If a user has enough privilege to run a particular command, the user has to 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 in the screen. The command modes are listed as below:

Command Modes

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

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

2.4 Changing 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

2.5 Command Line Messages

Message: *Wrong username or password!*
Recovery: Re-try the login with the correct username and password credentials.

Message: *There are too many users in the system.*
Recovery: Try to log in later.

Message: *% Incomplete command.*
Recovery: Try entering the command again with all required parameters.

Message: *% Invalid word detected at '^' marker.*
Recovery: Try entering the command again with correctly entered parameters.

2.6 Privilege Levels

Every command has a privilege level (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.

2.7 Exec Mode (Global) Commands

Enter a question mark (**?**) at the command line prompt to display the global Exec mode commands.

```
SISPM1040-582-LRT# ?
    CableDiag     Cable Diagnostic keyword
    clear         Reset functions
    configure     Enter configuration mode
    copy          Copy from source to destination
    debug         Debugging functions
    delete        Delete one file in flash: file system
    dir           Directory of all files in flash: file system
    disable       Turn off privileged commands
    do            To run exec commands in config 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
    ipv6          IPv6 configuration commands
    link-oam      Link OAM configuration
    logout        Exit from EXEC mode
    more          Display file
    no            Negate a command or set its defaults
    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          Show running system information
    terminal      Set terminal line parameters
    traceroute    traceroute program
SISPM1040-582-LRT#
```

The global Exec mode commands are described below.

Command: **?** or **??** or **Tab**

Description: Enter one question mark (**?**) with no space in the command line to display a command description.
Enter one question mark (**?**) with space in the command line to display the parameters available.
Enter two question marks (**??**) in the command line to display the syntax available.
Press the Tab key to display available commands in table format.

Syntax : **?** (with or without space before)
?? (without space before)
<Tab>

Parameters: None.

Example 1: Enter a single question mark (**?**) in the command line to display the parameters available.

```
SISPM1040-582-LRT# show ?
    aaa                 Authentication, Authorization and Accounting methods
    access              Access management
    access-list          Access list
    aggregation          Aggregation port configuration
    always-on-poe        Show Always On PoE Status
    clock               Configure time-of-day clock
    command-history-log   Command Histry List
    dot1x               IEEE Standard for port-based Network Access Control
    eps                 Ethernet Protection Switching
    erps                Ethernet Ring Protection Switching
    evc                 Ethernet Virtual Connections
    event               Show trap event configuration
    green-ethernet       Green ethernet (Power reduction)
    history             Display the session command history
    interface           Interface status and configuration
    ip                  Internet Protocol
    ipmc                IPv4/IPv6 multicast configuration
    ipv6                IPv6 configuration commands
    lacp                LACP configuration/status
    line                TTY line information
-- more --, next page: Space, continue: g, quit: ^C
```

Example 2: Enter two question marks (**??**) in the command line to display the syntax available.

```
SISPM1040-582-LRT# show??
show aaa
show access management [ statistics | <access_id_list> ]
show access-list [ interface [ ( <port_type> [ <v_port_type_list> ] ) ] ] [ rate-limiter [
<rate_limiter_list> ] ] [ ace statistics [ <ace_list> ] ]
show access-list ace-status [ static ] [ link-oam ] [ loop-protect ] [ dhcp ] [ptp ] [ upnp ] [ arp-
inspection ] [ evc ] [ mep ] [ ipmc ] [ ip-source-guard ] [ ip-mgmt ] [ tt-loop ] [ y1564 ] [ dms-
client ] [ dms-server ] [ dms-ssdp ] [ dms-onvif ] [ agv-car ] [ dms-mdns ] [ ztp ] [ rapid-ring ] [
lacp-on-air ] [ mrp] [ conflicts ] [ switch <switch_list> ]
show aggregation [ mode ]
show clock
show clock detail
show command-history-log status
show dot1x statistics { eapol | radius | all } [ interface ( <port_type> [ <v_port_type_list> ] ) ]
show dot1x status [ interface ( <port_type> [ <v_port_type_list> ] ) ] [ brief ]
show eps [ <inst> ] [ detail ]
show erps { [ <groups> ] } [ detail | statistics ]
show evc statistics { [ <evc_id> | all ] } [ ece [ <ece_id> ] ] [ interface ( <port_type> [
<port_list> ] ) ] [ pw <pw_num_list> ] [ cos <cos> ] [ green | yellow | red | discard ] [ frames |
bytes ]
-- more --, next page: Space, continue: g, quit: ^C
```

Example 3: Press the Tab key to display available commands in table format.

```
SISPM1040-582-LRT# show <tab>
aaa                   access               access-list
aggregation           always-on-poe        clock
command-history-log   dot1x                eps
erps                  evc                  event
green-ethernet        history              interface
ip                    ipmc                 ipv6
lacp                  line                 link-oam
lldp                  logging              loop-protect
mac                   map-api-key          mep
monitor               mrp                  mvr
ntp                   platform             poe
port-security         privilege            process
ptp                   pvlan                qos
radius-server         rapid-ring           rmon
running-config        sflow                smtp
snmp                  spanning-tree        switchport
system                tacacs-server        terminal
udld                  upnp                 user-privilege
users                 version              vlan
voice                 web
SISPM1040-582-LRT#
```

Command: **CableDiag**

Description: Run Cable Diagnostic test on copper ports.

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

Parameters:

interface	Interface keyword
GigabitEthernet	1 Gigabit Ethernet Port
<port_type_id>	Port ID in 1/1-8

Example:

```
SISPM1040-582-LRT# CableDiag interface GigabitEthernet 1/3
Starting Cable Diagnostic - Please wait
Interface             Link Status    Test Result    Length
--------------------  -------------  -------------  -------------
GigabitEthernet 1/3    Link Down      detect error or check cable length is between 7-120 meters
SISPM1040-582-LRT# CableDiag interface GigabitEthernet 1/8
Starting Cable Diagnostic - Please wait
Interface             Link Status    Test Result    Length
--------------------  -------------  -------------  -------------
GigabitEthernet 1/8    1G             detect error or check cable length is between 7-120 meters
SISPM1040-582-LRT# CableDiag interface GigabitEthernet 1/7
Starting Cable Diagnostic - Please wait
Interface             Link Status    Test Result    Length
--------------------  -------------  -------------  -------------
GigabitEthernet 1/7    Link Down     Abnormal        3(m)
SISPM1040-582-LRT#
```

Messages: *% No such interface: GigabitEthernet 1/9* displays if you enter the command on a fiber port.

Command: **dot1x**

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

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

Parameters:

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

Example:

```
SISPM1040-582-LRT# dot1x initialize interface * 1/5 GigabitEthernet 1/5
SISPM1040-582-LRT# dot1x initialize
SISPM1040-582-LRT#
```

Command: **Exit**

Description: Exit from EXEC mode.

Syntax : **exit**

Parameters: None

Example:

```
SISPM1040-582-LRT# exit

Username:
Password:
Wrong username or password!
Username: admin
Password:
SISPM1040-582-LRT# con ter
SISPM1040-582-LRT(config)# exit
SISPM1040-582-LRT# exit?
   exit    Exit from EXEC mode
   <cr>
SISPM1040-582-LRT#
```

Command: **Help**

Description: Description of the interactive help system.

Syntax : **help**

Parameters: None

Example:

```
SISPM1040-582-LRT# 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?'.)

SISPM1040-582-LRT#
```

Command: **Logout**

Description: Exit from EXEC mode.

Syntax : logout <cr>

Parameters: Press Enter to log back in.

Example:

```
SISPM1040-582-LRT# logout

Username:
Password:
```

Command: **more**

Description: Display file.

Syntax : **more** <path>

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 57 characters and a hyphen must not be first character. The file name content that only contains '.' is not allowed.

Example:

```
SISPM1040-582-LRT# more?
   more    Display file
SISPM1040-582-LRT# more?
more <path>
SISPM1040-582-LRT# more tftp://server/path-and-filename
% Loading /path-and-filename from TFTP server server

SISPM1040-582-LRT#
```

Messages: *% TFTP load error: Network error*

3 Clear Commands

Command	Function
access	Access management
access-list	Access list
dot1x	IEEE Standard for port-based Network Access Control
eps	Ethernet Protection Switching.
erps	Ethernet Ring Protection Switching
evc	Ethernet Virtual Connections
ip	Interface Internet Protocol config commands
ipv6	IPv6 configuration commands
lacp	Clear LACP statistics
link-oam	Clear Link OAM statistics
lldp	Clears LLDP statistics.
logging	System logging message
mac	MAC Address Table
mep	Maintenance Entity Point
mvr	Multicast VLAN Registration configuration
port-security	Enable/disable port security globally.
ptp	Precision Time Protocol
sflow	Statistics flow.
spanning-tree	STP Bridge
statistics	Clear statistics for one or more given interfaces

Command: **access**

Description: Clear Access management.

Syntax : **access**

Parameters: None

Example:

```
SISPM1040-582-LRT# clear access management statistics ?
   <cr>
SISPM1040-582-LRT# clear access management statistics
SISPM1040-582-LRT#
```

Command: a**ccess list**

Description: Clear Access list.

Syntax : clear access-list ace statistics

Parameters:

ace	Access list entry
statistics	Traffic statistics

Example:

```
SISPM1040-582-LRT# clear access-list ace statistics
SISPM1040-582-LRT#
```

Command: **dot1x**

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

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

Parameters:

statistics	Clears the statistics counters
interface	Interface
GigabitEthernet	1 Gigabit Ethernet Port
PORT_TYPE_LIST	Port list in 1/1-10 for Gigabitethernet

Example:

```
SISPM1040-582-LRT# clear dot1x statistics?
interface  <cr>
SISPM1040-582-LRT# clear dot1x statistics
SISPM1040-582-LRT# clear dot1x statistics interface ?
   *                All switches or All ports
   GigabitEthernet    1 Gigabit Ethernet Port
SISPM1040-582-LRT# clear dot1x statistics interface GigabitEthernet 1/2-4
SISPM1040-582-LRT#
```

Command: **eps**

Description: Clear Ethernet Protection Switching.

Syntax : **clear** eps <inst> wtr

Parameters:

<uint>	The EPS instance number.
wtr	Clear active WTR

Example:

```
SISPM1040-582-LRT# clear eps 1 wtr?
   wtr     Clear active WTR.
   <cr>
SISPM1040-582-LRT# clear eps 1 wtr
Error: EPS instance is not created
SISPM1040-582-LRT#
```

Command: **erps**

Description: Clear Ethernet Ring Protection Switching.

Syntax : **clear** erps [<groups>] statistics

Parameters:

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

Example:

```
SISPM1040-582-LRT# clear erps ?
   1~64         Zero or more ERPS group numbers
   statistics    Clear ERPS statistics
SISPM1040-582-LRT# clear erps 1 ?
   statistics    Clear ERPS statistics
SISPM1040-582-LRT# clear erps 1 statistics ?
   <cr>
SISPM1040-582-LRT# clear erps 1 statistics
% No such ERPS group: 1
SISPM1040-582-LRT# clear erps?
   erps    Ethernet Ring Protection Switching
SISPM1040-582-LRT# clear erps?
clear erps [ <groups> ] statistics
SISPM1040-582-LRT# clear erps
```

Command: **evc**

Description: Clear Ethernet Virtual Connections.

Syntax : **clear** evc statistics { [<evc_id> | all] } [ece [<ece_id>]] [interface (<port_type> [<port_list>])] [pw <pw_num_list>]

Parameters:

statistics	Statistic counters
interface	Interface
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
<port_type_list>	Port list for all port types
<cr>	

Example:

```
SISPM1040-582-LRT# clear evc?
   evc    Ethernet Virtual Connections
SISPM1040-582-LRT# clear evc?
clear evc statistics { [ <evc_id> | all ] } [ ece [ <ece_id> ] ] [ interface ( <port_type> [
<port_list> ] ) ] [ pw <pw_num_list> ]
SISPM1040-582-LRT# clear evc ?
   statistics    Statistic counters
SISPM1040-582-LRT# clear evc statistics ?
   interface    Interface
   <cr>
SISPM1040-582-LRT# clear evc statistics
SISPM1040-582-LRT# clear evc statistics interface ?
   *                All switches or All ports
   GigabitEthernet    1 Gigabit Ethernet Port
SISPM1040-582-LRT# clear evc statistics interface GigabitEthernet 1/3-7
SISPM1040-582-LRT#
```

Command: **ip**

Description: Clear Interface Internet Protocol config commands.

Syntax :
clear ip arp
clear ip dhcp detailed statistics { server | client | snooping | relay | helper | all } [interface (<port_type> [<in_port_list>])]
clear ip dhcp relay statistics
clear ip dhcp server binding <ip>
clear ip dhcp server binding { automatic | manual | expired }
clear ip dhcp server statistics
clear ip dhcp snooping statistics [interface (<port_type> [<in_port_list>])]
clear ip igmp snooping [vlan <v_vlan_list>] statistics
clear ip statistics [system] [interface vlan <v_vlan_list>] [icmp] [icmp-msg <type>]

Parameters:		
	arp	Clear ARP cache
	dhcp	Dynamic Host Configuration Protocol
	igmp	Internet Group Management Protocol
	statistics	Traffic statistics
	relay	DHCP relay agent configuration
	snooping	DHCP snooping
	interface	Select an interface to configure
	GigabitEthernet	1 Gigabit Ethernet Port
	vlan	IPv4 traffic interface
	<vlan_list>	VLAN identifier(s): VID
	detailed	Detailed statistics
	relay	DHCP relay agent configuration
	server	Miscellaneous DHCP server information
	snooping	DHCP snooping
	<ipv4_ucast>	IP address of the binding
	type	Type of bindings to clear
	automatic	Clear automatic bindings to expired bindings
	expired	Clear expired bindings for free
	manual	Clear manual bindings to expired bindings
	icmp	IPv4 ICMP traffic
	icmp-msg	IPv4 ICMP traffic for designated message type
	interface	Select an interface to configure
	system	IPv4 system traffic
	vlan	IPv4 interface traffic

Example:

```
SISPM1040-582-LRT# clear ip arp
SISPM1040-582-LRT# clear ip dhcp detailed  statistics all
SISPM1040-582-LRT# clear ip dhcp server binding 192.168.1.11
SISPM1040-582-LRT# $ing statistics interface GigabitEthernet 1/1-10
SISPM1040-582-LRT# clear ip statistics system interface vlan 10
% Failed to clear IPv4 VLAN 10 statistics.
SISPM1040-582-LRT#
```

Command: **IPv6**

Description: Clear IPv6 configuration commands.

Syntax :

clear ipv6 dhcp-client statistics [interface vlan <v_vlan_list>]
clear ipv6 mld snooping [vlan <v_vlan_list>] statistics
clear ipv6 neighbors
clear ipv6 statistics [system] [interface vlan <v_vlan_list>] [icmp] [icmp-msg <type>]
clear ipv6 statistics [system] [interface vlan <v_vlan_list>] [icmp] [icmp-msg <type>]

Parameters:	dhcp-client	Manage DHCPv6 client service
	mld	Multicasat Listener Discovery
	neighbors	Ipv6 neighbors
	statistics	Traffic statistics
	snooping	Snooping MLD
	statistics	Running MLD snooping counters
	statistics	Traffic statistics
	vlan	Ipv6 interface traffic
	<vlan_list>	VLAN identifier(s): VID
	icmp	IPv6 ICMP traffic
	icmp-msg	IPv6 ICMP traffic for designated message type
	interface	Select an interface to configure
	system	IPv6 system traffic
	< 0~255>	ICMP message type; ranges from 0 to 255
	vlan	VLAN of IPv6 interface
	vlan	Search by VLAN
	<vlan_list>	IPv6 interface VLAN list

Example:

```
SISPM1040-582-LRT# clear ipv6 mld snooping vlan 3 statistics
SISPM1040-582-LRT# clear ipv6 neighbors
SISPM1040-582-LRT# Clear ipv6 statistics system icmp icmp-msg 2
SISPM1040-582-LRT# clear ipv6 dhcp-client statistics interface vlan 100
% Invalid DHCPv6 client interface Vlan100
SISPM1040-582-LRT# clear ipv6 statistics icmp icmp-msg 5
SISPM1040-582-LRT#
```

Command: **LACP**

Description: Clear LACP statistics.

Syntax : **clear** lacp statistics

Parameters:	statistics	Clear all LACP statistics

Example:

```
SISPM1040-582-LRT# clear lacp statistics
SISPM1040-582-LRT#
```

Command: **link-oam**

Description: Clear Link OAM statistics.

Syntax : **clear** link-oam statistics
clear link-oam statistics interface (* | GigabitEthernet) <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
<port_type_list>	Port list for all port types
<port_type_list>	Port list in 1/1-10

Example:

```
SISPM1040-582-LRT# clear link-oam?
   link-oam    Clear Link OAM statistics
SISPM1040-582-LRT# clear link-oam?
clear link-oam statistics [ interface ( <port_type> [ <plist> ] ) ]
SISPM1040-582-LRT# clear link-oam ?
statistics
SISPM1040-582-LRT# clear link-oam statistics ?
   interface    Clear Link OAM statistic on a specific interface or all
                interfaces.
   <cr>
SISPM1040-582-LRT# clear link-oam statistics
SISPM1040-582-LRT# clear link-oam statistics interface GigabitEthernet 1/10
SISPM1040-582-LRT#
```

Command: **lldp**

Description: Clear LLDP statistics for one or more given interfaces.

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

Parameters:

|	Output modifiers
global	Clear global counters
interface	Interface keyword.
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
<port_type_list>	Port list in 1/1-10
<cr>	

Example:

```
SISPM1040-582-LRT# clear lldp statistics??
clear lldp statistics { [ interface ( <port_type> [ <plist> ] ) ] | global }
SISPM1040-582-LRT# clear lldp statistics interface GigabitEthernet 1/6-9
SISPM1040-582-LRT# clear lldp statistics
SISPM1040-582-LRT# clear lldp statistics global
SISPM1040-582-LRT#
```

Command: **logging**

Description: Clear System logging messages.

Syntax :

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

clear logging flash

Parameters:		
	alert	Severity 1: Action must be taken immediately
	crit	Severity 2: Critical conditions
	debug	Severity 7: Debug-level messages
	emerg	Severity 0: System is unusable
	error	Severity 3: Error conditions
	flash	Clear all logging messages on Flash
	info	Severity 6: Informational messages
	notice	Severity 5: Normal but significant condition
	warning	Severity 4: Warning conditions
	<cr>	

Example:

```
SISPM1040-582-LRT# clear logging?
   logging    System logging message
   <cr>
SISPM1040-582-LRT# clear logging debug
SISPM1040-582-LRT#
```

Command: **mac**

Description: Clear MAC Address table.

Syntax : **clear** mac address-table

Parameters: address-table Flush MAC Address table.

Example:

```
SISPM1040-582-LRT# clear mac address-table
SISPM1040-582-LRT#
```

Command: **mep**

Description: Clear Maintenance Entity Point.

Syntax : **clear** mep <inst> { lm | dm | tst | bfd }

Parameters:		
	<uint>	The MEP instance.
	bfd	Clear G.8113.2 BFD CC/CV statistics counters.
	dm	Clear DM measuring information.
	lm	Clear LM measuring information.
	tst	Clear TST measuring information.

Example:

```
SISPM1040-582-LRT# clear mep 1 dm
Error: MEP instance is not enabled
SISPM1040-582-LRT#
```

Command: **mvr**

Description: Clear Multicast VLAN Registration configuration.

Syntax : **clear** mvr [vlan <v_vlan_list> | name <mvr_name>] 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:

```
SISPM1040-582-LRT# clear  mvr vlan 25 statistics
% Invalid MVR VLAN ID 25.

SISPM1040-582-LRT# clear  mvr vlan 1 statistics

SISPM1040-582-LRT#
```

Command: **port-security**

Description: Clear port security. If running config has sticky MAC address, then these MAC addresses are automatically set to be static MAC addresses on the MAC Table.

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

Parameters:

port-security	Enable/disable port security globally.
sticky	port security sticky function per interface.
All	clear all sticky mac at all ports
interface	Choose port
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
<port_type_list>	Port list for all port types

Example:

```
SISPM1040-582-LRT# clear port-security ?
   sticky    port security sticky function per interface.
SISPM1040-582-LRT# clear port-security?
   port-security    Enable/disable port security globally.
SISPM1040-582-LRT# clear port-security?
clear port-security sticky { All | interface ( <port_type> [ <plist> ] ) }
SISPM1040-582-LRT# clear port-security?
   port-security    Enable/disable port security globally.
SISPM1040-582-LRT# clear port-security sticky ?
   All         clear all sticky mac at all ports
   interface    Choose port
SISPM1040-582-LRT# clear port-security sticky interface ?
   *                All switches or All ports
   GigabitEthernet    1 Gigabit Ethernet Port
SISPM1040-582-LRT# $lear port-security sticky interface GigabitEthernet 1/5-8
SISPM1040-582-LRT#
```

Command: **ptp**

Description: Clear PTP network-clock configuration.

Syntax : **clear** ptp <clockinst> servo

Parameters: <0-3>
servo
<cr>

Example:

```
SISPM1040-582-LRT# clear ptp ?
   <0-3>
SISPM1040-582-LRT# clear ptp?
clear ptp <clockinst> servo
SISPM1040-582-LRT# clear ptp 0 ?
   servo
SISPM1040-582-LRT# clear ptp 0 servo ?
   <cr>
SISPM1040-582-LRT# clear ptp 0 servo
Clock instance 0 : does not exist
%% Failed to set network-clock configuration.

SISPM1040-582-LRT#
```

Command: **sflow**

Description: Clear sFlow statistics.

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

Parameters:

statistics	sFlow statistics
receiver	Clear statistics for receiver.
samplers	Clear statistics for samplers
interface	Interface
<port_type>	GigabitEthernet
<Samplers : option>	runtime
<port_type_list>	Port list in 1/1-10 for Gigabitethernet

Example:

```
SISPM1040-582-LRT# clear sflow ?
   statistics    sFlow statistics.
SISPM1040-582-LRT# clear sflow statistics ?
   receiver    Clear statistics for receiver.
   samplers    Clear statistics for samplers.
SISPM1040-582-LRT# clear sflow statistics receiver ?
   <cr>
SISPM1040-582-LRT# clear sflow statistics receiver
SISPM1040-582-LRT# clear sflow statistics samplers ?
   interface    Clear statistics for a specific interface or interfaces.
   <cr>
SISPM1040-582-LRT# clear sflow statistics samplers
SISPM1040-582-LRT#
```

Command **spanning-tree**

Description: Clear STP Bridge.

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

Parameters:

detected-protocols	Set the STP migration check
statistics	STP statistics
interface	Choose port
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
<port_type>	GigabitEthernet
<port_type_list>	Port list in 1/1-10 for Gigabitethernet

Example:

```
SISPM1040-582-LRT# clear spanning-tree ?
   detected-protocols    Set the STP migration check
   statistics           STP statistics
SISPM1040-582-LRT# $cted-protocols interface GigabitEthernet 1/1-10
SISPM1040-582-LRT#
```

Command: **statistics**

Description: Clear statistics for a given interface.

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

Parameters:

*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
interface	Interface
<port_type_list>	Port list for all port types

Example:

```
SISPM1040-582-LRT# clear statistics GigabitEthernet 1/1-10
SISPM1040-582-LRT# clear statistics * 1/3 *
SISPM1040-582-LRT#
```

4 Configure Mode Commands

Enter the `configure terminal` command to got fro Exec mode to Config mode.

Command	Function
aaa	Authentication, Authorization and Accounting
access	Access management
access-list	Access list
aggregation	Aggregation mode
always-on-poe	Enable Always-on PoE
banner	Define a login banner
clock	Configure time-of-day clock
command-history-log	Enable to Save Command Histry to Flash
debug	Debugging functions
default	Set a command to its defaults
dms	Enable DMS Master
do	To run exec commands in config mode
dot1x	IEEE Standard for port-based Network Access Control
enable	Modify enable password parameters
end	Go back to EXEC mode
eps	Ethernet Protection Switching.
erps	Ethernet Ring Protection Switching
evc	Ethernet Virtual Connections
event	Trap event severity level
exec-timeout	Autologout timeout
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
ipmc	IPv4/IPv6 multicast configuration
ipv6	IPv6 configuration commands
lacp	LACP settings
line	Configure a terminal line
lldp	LLDP configurations.
logging	System logging message
loop-protect	Loop protection configuration
mac	MAC table entries/configuration
map-api-key	Set google map key string
mep	Maintenance Entity Point
monitor	Monitoring different system events
mrp	MRP Configuration
mvr	Multicast VLAN Registration configuration
no	Negate a command or set its defaults
ntp	Configure NTP
percepxion	Percepxion configuration

poe	Power Over Ethernet.
port-security	Enable/disable port security globally.
privilege	Command privilege parameters
ptp	Precision time Protocol (1588)
qos	Quality of Service
radius-server	Configure RADIUS
rapid-ring	Set Rapid Ring's configurations
ring-to-ring	Set Ring to Ring's configurations
rmon	Remote Monitoring
sflow	Statistics flow.
smtp	Set email information
snmp-server	Set SNMP server's configurations
spanning-tree	Spanning Tree protocol
switchport	Set switching mode characteristics
system	Set Board Configuration
tacacs-server	Configure TACACS+
tzidx	Configure timezone city/area
udld	Enable UDLD in the aggressive or normal mode and to set the configurable message timer on all fiber-optic ports.
upnp	Set UPnP configuration
username	Establish User Name Authentication
vlan	VLAN commands
voice	Voice appliance attributes
web	Web

Command: **configure terminal**

Description: Change from Exec mode to Config mode.

Syntax : configure terminal

Parameters: <cr>

Example:

```
SISPM1040-582-LRT# configure terminal
SISPM1040-582-LRT(config)#
```

Command: **aaa**

Description: Configure Authentication, Authorization and Accounting.

Syntax : **aaa** accounting http tacacs [exec]

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

aaa accounting { http | https } tacacs [exec]

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

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

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

aaa authorization { http | https } tacacs [fallback]

Parameters:

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

Example:

```
SISPM1040-582-LRT(config)# aaa accounting console tacacs commands 14 exec
SISPM1040-582-LRT(config)# aaa authentication login http radius
SISPM1040-582-LRT(config)# aaa authorization ssh tacacs ommands 15 config-commands fallback
```

```
SISPM1040-582-LRT(config)# aaa  authorization https tacacs fallback
SISPM1040-582-LRT(config)#
```

Command: **access**

Description: Configure Access management.

Syntax :

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

Parameters:		
	management	Access management configuration
	< 1-16>	ID of access management entry
	< 1-4094>	The VLAN ID for the access management entry
	< ipv4_addr>	Start IPv4 address
	< ipv6_addr>	Start IPv6 address
	all	All services
	snmp	SNMP service
	telnet	TELNET/SSH service
	to	End address of the range
	web	Web service

Example:

```
SISPM1040-582-LRT(config)# access management 1 100 192.168.1.30 all
SISPM1040-582-LRT(config)# access management 1 100 10.0.4.90 snmp telnet web
SISPM1040-582-LRT(config)#
```

Table : configure – access-list Commands

Command	Function
ace	Access list entry
rate-limiter	Rate limiter

Command: **ace**

Description: Access list entry

Syntax :

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

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

Parameters:

<1-256>	ACE ID
update	Update an existing ACE
ace	Access list entry
action	Access list action
dmac-type	The type of destination MAC address
evc-policer	EVC policer
frametype	Frame type
ingress	Ingress
logging	Logging frame information
lookup	Second lookup
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
tag	Tag
tag-priority	Tag priority
vid	VID field
deny	Deny
filter	Filter
permit	Permit
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 etype
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 IPv4
ipv6-icmp	Frame type of IPv6 ICMP
ipv6-tcp	Frame type of IPv6 TCP
ipv6-udp	Frame type of IPv6 UDP
interface	Select an interface to configure
<port_type>	Gigabitethernet
*	All switches or All ports
Gigabitethernet	1 Gigabit Ethernet port
<port_type_id>	Port ID in the format of switch-no/port-no ex, 1/1-10 for Gigabitethernet
<port_type>	* or Gigabitethernet
<port_type_list>	Port list in 1/1-10
any	Don't-care the ingress interface

<0-255>	Policy ID
policy-bitmask	The bitmask for policy ID
<0x0-0xFF>	The value of policy bitmask
<1-4095>	The value of VID field
<0-7>	The value of tag priority
dip	Destination IP address field
ip-flag	IP flag
ip-protocol	IPv4 protocol field
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
shutdown	Shutdown incoming port. The shutdown feature only works when the packet length is less than 1518 (without VLAN tags).
sip	Source IP address field
tag	Tag

Example:

```
SISPM1040-582-LRT(config)# access-list ace 10 action deny
SISPM1040-582-LRT(config)# access-list ace 1 dmac-type broadcast frame-type ipv4-tcp
SISPM1040-582-LRT(config)# access-list ace 2 action deny dmac-type broadcast rate-limiter 1 redirect
interface GigabitEthernet 1/4 tag untagged
% The specific DMAC type(unicast, multicast or broadcast) is not supported when ACE any frame type.
SISPM1040-582-LRT(config)#
```

Command: **rate-limiter**

Description: Configure Rate limiter.

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

Parameters:

100kbps	100k bits per second
<1~16>	Rate limiter ID
pps	Packets per second
<0-10000>	Rate value
<0-3276700>	Rate value

Example:

```
SISPM1040-582-LRT(config)# access-list rate-limiter 100kbps 111
SISPM1040-582-LRT(config)# access-list rate-limiter 100kbps 500
SISPM1040-582-LRT(config)# access-list rate-limiter 1 pps 90000
SISPM1040-582-LRT(config)#
```

Command: **aggregation**

Description: Configure Aggregation mode.

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

Parameters:

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

Example:

```
SISPM1040-582-LRT(config)# aggregation mode ip port dmac smac
SISPM1040-582-LRT(config)#
```

Command: **always-on-poe**

Description: Enable Always-on PoE. When enabled, during a switch warm restart, the switch will continue supplying PoE power to the PDs (FW VB7.10.2658 and above).

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

Parameters:

|	Output modifiers
<cr>	

Example:

```
SISPM1040-582-LRT(config)# always-on-poe
Always-on PoE Status : Enable
SISPM1040-582-LRT(config)#
```

Command: **banner**

Description: Define a login banner.

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

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:

```
banner exec LINE
Enter TEXT message.  End with the character 'L'.
L
```

Command: **clock**

Description: Configure time-of-day clock.

Syntax :

set	set clock
summer-time	Configure summer (daylight savings) time
timezone	Configure time zone

clock set <icliDateWord> { <icliTimeWord24> | <icliTimeWord12> { AM | PM } }
clock summer-time <word16> date [<start_month_var> <start_date_var> <start_year_var> <start_hour_var> <end_month_var> <end_date_var> <end_year_var> <end_hour_var> [<offset_var>]]
clock summer-time <word16> recurring [<start_week_var> <start_day_var> <start_month_var> <start_hour_var> <end_week_var> <end_day_var> <end_month_var> <end_hour_var> [<offset_var>]]
clock timezone <word_var> <hour_var> [<minute_var> [<subtype_var>]]

Parameters:

Example:

```
SISPM1040-582-LRT(config)# clock set 2022/02/21 17:35:31
2022-02-21T17:35:31+00:00
SISPM1040-582-LRT(config)#
```

Command: **command-history-log**

Description: Enable to Save Command History to Flash.

Syntax : **command-history-log**

Parameters: None

Example:

```
SISPM1040-582-LRT(config)# command-history-log?
   command-history-log    Enable to Save Command Histry to Flash
   <cr>
SISPM1040-582-LRT(config)# command-history-log?
command-history-log
SISPM1040-582-LRT(config)# command-history-log
SISPM1040-582-LRT(config)#
```

Command: **debug**

Description: Debugging functions in Config mode. Note that there are also Exec mode and Interface Config mode debug commands.

Warning: The use of 'debug' commands may negatively impact system behavior. Do not enable unless instructed to. Some debug commands when enabled they stay on, consuming CPU and memory and ultimately slowing the system down.

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

Note: Debug commands are only for use by, or at the direction of Lantronix Technical Support.

Command: **default**

Description: Set a command to its defaults.

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

Parameters:

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

Example:

```
SISPM1040-582-LRT(config)# default access-list rate-limiter 1
SISPM1040-582-LRT(config)# default access-list rate-limiter
SISPM1040-582-LRT(config)#
```

Command: **dms**

Description: Set DMS service mode (Device Management System)

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

Parameters:

service-mode	DMS mode
disabled	DMS mode is disabled
enabled	DMS mode is enabled
priority	DMS priority. Choose a DMS priority level for the switch.
high	DMS priority is high; this switch will be the DMS Controller (Master) switch.
low	DMS priority is low priority (default)
mid	DMS priority is mid-level priority
non	DMS priority is non; the switch will never become the Controller (Master) switch.

Example:

```
SISPM1040-582-LRT(config)# dms service-mode enabled
SISPM1040-582-LRT(config)# dms service-mode enabled priority mid
SISPM1040-582-LRT(config)# dms service-mode enabled priority high
SISPM1040-582-LRT(config)#
```

Command: **do**

Description: Run Exec commands in Config mode.

Syntax : <line> Exec Command

Parameters: do <command>

Example:

```
SISPM1040-582-LRT(config)# do show vlan
VLAN  Name                            Interfaces
----  ------------------------------  ----------
1     default                         Gi 1/1-10
100   VLAN0100                        Gi 1/2-3
200   VLAN0200                        Gi 1/2-3

SISPM1040-582-LRT(config)#
```

Command: **end**

Description: Go back to EXEC mode.

Syntax : **end** <cr>

Parameters: end Go back to EXEC mode

<cr>

Example:

```
SISPM1040-582-LRT(config)# end
SISPM1040-582-LRT#
```

Command: **eps**

Description: Configure Ethernet Protection Switching.

Syntax :

eps <inst> 1plus1 { bidirectional | { unidirectional [aps] } }
eps <inst> command { lockout | forced | manualp | manualw | exercise | freeze |lockoutlocal }
eps <inst> domain { port | tunnel-tp | pw } architecture { 1plus1 | 1for1 } work-flow { <flow_w> | <port_type> <port_w> } protect-flow { <flow_p> | <port_type><port_p> }
eps <inst> holdoff <hold>
eps <inst> mep-work <mep_w> mep-protect <mep_p> mep-aps <mep_aps>
eps <inst> revertive { 10s | 30s | 5m | 6m | 7m | 8m | 9m | 10m | 11m | 12m | {wtr-value <wtr_value> } }

Parameters:

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

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

Example:

```
SISPM1040-582-LRT(config)# eps 1 1plus1 bidirectional
SISPM1040-582-LRT(config)# eps 1 command manualw
SISPM1040-582-LRT(config)# eps 1 revertive 10m
SISPM1040-582-LRT(config)# eps 1 domain port architecture 1for1 work-flow GigabitEthernet 1/4 protect-
flow GigabitEthernet 1/6
SISPM1040-582-LRT(config)# eps 1 holdoff 50
SISPM1040-582-LRT(config)# eps 1 mep 2 mep-protect 3 mep-aps 4
SISPM1040-582-LRT(config)#
```

Messages:

Error: EPS instance is not created

Error: Working MEP and protecting SF MEP is same instance

Command: **erps**

Description: Configure Ethernet Ring Protection Switching.

Syntax :

erps <group> guard <guard_time_ms>
erps <group> holdoff <holdoff_time_ms>
erps <group> major port0 interface <port_type> <port0> port1 interface <port_type> <port1> [interconnect]
erps <group> mep port0 sf <p0_sf> aps <p0_aps> port1 sf <p1_sf> aps <p1_aps>
erps <group> revertive <wtr_time_minutes>
erps <group> rpl { owner | neighbor } { port0 | port1 }
erps <group> sub port0 interface <port_type> <port0> { { port1 interface <port_type> <port1> } | { interconnect <major_ring_id> } } [virtual-channel]
erps <group> topology-change propagate
erps <group> version { 1 | 2 }
erps <group> vlan { none | [add | remove] <vlans> }

Parameters:

1-64	ERPS group number
guard	Guard
holdoff	Hold-off time
major	Major ring
mep	MEP
revertive	Revertive
rpl	Ring Protection Link
sub	Sub-ring
topology-change	Topology Change
version	Version
vlan	VLAN
10-2000	Guard time in 10 ms steps between 10 and 2000 ms
0-10000	Hold-off time in ms
port0	ERPS Port 0 interface
interface	Ethernet interface
GigabitEthernet	1 Gigabit Ethernet Port
<port_type_id>	Port ID in 1/1-10
port1	ERPS Port 1 interface
interconnect	Major ring is interconnected
sf	Signal Fail
1-100	Index of Port 0 SignalFail MEP
aps	Automatic Protection Switching
1-100	Index of Port 0 APS MEP
1-12	Wait-to-restore time in minutes
neighbor	Neighbor role
owner	Owner role
port0	ERPS Port 0 interface
port1	ERPS Port 1 interface
interconnect	Sub-ring is interconnected

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:

```
SISPM1040-582-LRT(config)# erps 1 guard 10
SISPM1040-582-LRT(config)# erps 1 guard 10
SISPM1040-582-LRT(config)# erps 1 holdoff 0
SISPM1040-582-LRT(config)# $erface GigabitEthernet 1/2 interconnect
SISPM1040-582-LRT(config)# erps 1 mep port0 sf 1 aps 1 port1 sf 1 aps 1
SISPM1040-582-LRT(config)# erps 1 revertive 1
SISPM1040-582-LRT(config)# erps 1 rpl owner port1
SISPM1040-582-LRT(config)# erps 1 sub port0 interface GigabitEthernet 1/10 interconnect 1 virtual-
channel
SISPM1040-582-LRT(config)# erps 1 topology-change propagate
SISPM1040-582-LRT(config)# erps 1 ver 1
SISPM1040-582-LRT(config)# erps 1 ver 2
SISPM1040-582-LRT(config)# erps 1 vlan 10-30
SISPM1040-582-LRT(config)# erps 1 vlan add 10-30
SISPM1040-582-LRT(config)# erps 1 vlan remove 15-17
SISPM1040-582-LRT(config)# do show erps
(L=Link Up/Down; B=Blocked/Unblocked)     Maj RPL  RPL   RPL  FSM   R-APS
Gr Typ V Rev Port 0     L B Port 1     L B Grp Role Port  Blck State TX RX FOP
--+---+-+---+----------+-+-+----------+-+-+---+----+-----+----+-----+--+--+---
 1 S-I 2 Rev Gi 1/10    U B -          U U 1   -    -     -    NONE  N     N
SISPM1040-582-LRT(config)#
```

Messages:

% ERPS group 1: Given protection group does not exist

% ERPS group 1: Given protection group already created

% ERPS group 1: Port 0 and port 1 are the same

% ERPS group 1: Generic error occurred

Command: **evc**

Description: Configure Ethernet Virtual Connections.

Syntax :

evc [update] <evc_id> { [vid <evc_vid>] } [ivid <ivid>] [interface (<port_type> [<port_list>])] { [leaf { [vid <leaf_vid>] [ivid <leaf_ivid>] [interface { (<port_type> [<leaf_port_list>]) | none }] }*1] } [learning [disable]] [policer { <policer_id> | none | discard }] [inner-tag add { [type { none | c-tag | s-tag | s-custom-tag }] [vid-mode { normal | tunnel }][vid <it_add_vid>] [preserve [disable]] [pcp <it_add_pcp>] [dei <it_add _dei>] }*1] [outer-tag add vid <ot_add_vid>] [pw [<pw_num_list>] [split-horizon <pw_num_list_split_horizon>]]

evc ece [update] <ece_id> [next { <ece_id_next> | last }] [lookup { basic | advanced }] [interface (<port_type> [<port_list>])] [smac { <smac> | any }] [dmac { <dmac> | unicast | multicast | broadcast | any }] [outer-tag {[match { [type { untagged | tagged | c-tagged | s-tagged | any }] [vid { <ot_match_vid> | any }] [pcp { <ot_match_pcp> | any }] [dei { <ot_match_dei> |any }] }*1] [add { [mode { enable | disable }] [vid <ot_add_vid>] [preserve [disable]] [pcp-mode { classified | fixed | mapped }] [pcp <ot_add_pcp >] [dei-mode { classified | fixed | dp }] [dei <ot_add_dei>] }*1] }*1] [inner-tag { [match { [type { untagged | tagged | c-tagged | s-tagged | any }] [vid { <it_match_vid> | any }] [pcp { <it_match_pcp> | any }] [dei { <it_m atch_dei> | any }] }*1] [add { [type { none | c-tag | s-tag | s-custom-tag }] [vid <it_add_vid>] [preserve [disable]] [pcp-mode { classified | fixed | mapped }] [pcp <it_add_pcp>] [dei-mode { classified | fixed | dp }] [dei <it_add_dei>] }*1] }*1] [frame-type { any | { ipv4 [proto { <pr4> | udp | tcp | any }] [dscp { <dscp4> | any }] [sip { <sip4> | any }] [dip { <dip4> | any }] [fragment { yes | no | any }] [sport { <sp4> | any }] [dport { <dp4> | any }] } | { ipv6 [proto { <pr6> | udp | tcp | any }] [dscp { <dscp6> | any }] [sip { <sip6> | any }] [dip { <dip6> | any }] [sport { <sp6> |any }] [dport { <dp6> | any }] } | { etype [etype-value { <etype_value> | an y }] [etype-data { <etype_data> | any } [<etype_mask>]] } | { llc [dsap {<dsap> | any }] [ssap { <ssap> | any }] [control { <control> | any }] [llc-data { <llc_data> | any } [<llc_mask>]] } | { snap [oui { <oui> | any }] [pid { <pid> | any }] } | { l2cp { stp | pause | lacp | lamp | loam | dot1x | elmi | pb | pb-gvrp | lldp | gmrp | gvrp | uld | pagp | pvst | cisco-vlan | cdp | vtp | dtp | cisco-stp | cisco-cfm } }] [direction { both | uni-to-nni | nni -to-uni }] [rule-type { both | rx | tx }] [tx-lookup { vid | pcp-vid | isdx}] [l2cp { [mode { tunnel | peer | forward | discard }] [tmac { cisco | custom }] }*1] [evc { <evc_id> | none }] [policer { <policer_id> | none | disc ard | evc }] [pop <pop>] [policy <policy_no>] [cos { <cos> | disable }] [dpl { <dpl> | disable }]

evc policer [update] <policer_id> [{ enable | disable }] [type { mef | single }] [mode { coupled | aware | blind }] [rate-type { line | data }] [cir<cir>] [cbs <cbs>] [eir <eir>] [ebs <ebs>]

Parameters:

<1-256>	EVC identifier
ece	EVC Control Entry
policer	Policer (ingress bandwidth profile)
update	Update existing entry
inner-tag	Setup inner tag options
interface	Setup NNI port list
ivid	Setup internal EVC VLAN ID
learning	Setup learning
outer-tag	Setup outer tag options
vid	Setup EVC VLAN ID
add	Setup inner tag add properties
dei	Setup added tag DEI
pcp	Setup added tag PCP
preserve	Setup tag PCP/DEI preservation
type	Setup added tag type
vid	Setup added tag VLAN ID

vid-mode	Setup inner tag VLAN ID mode
<0-1>	Added tag DEI
disable	Disable learning
<vlan_id>	Added tag VLAN ID
<0-7>	Added tag PCP
c-tag	Add C-tag
none	No tag added
s-custom-tag	Add custom S-tag
s-tag	Add S-tag
normal	Use EVC VLAN ID in outer tag
tunnel	Use EVC VLAN ID in inner tag
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
<port_type_list>	Port list for all port types
<1-4095>	EVC VLAN ID
cos	Setup Class of Service
direction	Setup ECE direction
dmac	Setup matched DMAC
evc	EVC mapping
frame-type	Setup matched frame type
interface	Setup UNI
next	Setup the ECE ID of the next entry
outer-tag	Setup outer tag options
policy	Setup ACL policy
pop	Setup tag popping
smac	Setup matched SMAC
cbs	Setup CBS
cir	Setup CIR
disable	Disable policer
ebs	Setup EBS for MEF policer
eir	Setup EIR for MEF policer
enable	Enable policer
mode	Setup policer mode
rate-type	Setup rate type
type	Setup policer type
<cr>	

Example:

```
SISPM1040-582-LRT(config)# evc 1 outer-tag add vid 3
SISPM1040-582-LRT(config)# evc ece 1 cos 3 direction nni-to-uni frame-type any
SISPM1040-582-LRT(config)# evc policer 1 type mef cbs 5000 cir 6500 mode aware rate-type line
SISPM1040-582-LRT(config)#
```

Command: **event**

Description: Set Trap event severity level.

Syntax :

event group { AC-Power | ACL | ACL-Log | Access-Mgmt | Auth-Failed | AUTO-SAVING | Cold-Start | Config-Info | DI-1-Normal | Digital-Out | Firmware-Upgrade | Import-Export | LACP | Link-Status | Login | Logout | Mgmt-IP-Change | Module-Change | NAS | Password-Change | PoE-PD-On | Port-Security | PWR-1-Off-On | PWR-2-Off -On | Spanning-Tree | Warm-Start | DC-Power | Battery-Power | BCS-Protection | DMS | Advanced | Dying-Gasp | PoE-Auto-Check | Poe-Auto-Power-Reset | FAN | ZTU-FAIL | Surveillance | SCP-Success | SCP-Fail } { level <lvl> | syslog { enable | disable } | trap { enable | disable } | smtp { enable | disable } | ipush { enable | disable } }

event group { PWR-1-On-Off | PWR-2-On-Off | DI-1-Abnormal | Loop-Protect | Temperature | Voltage | Rapid-Ring-Break | Rapid-Chain-Break | Rapid-Ring-Error | PoE-PD-Off | Over-Max-PoE-Power-Limitation | PoE-PD-Over-Current | OTP | MRP-Event} { level <lvl> | syslog { enable | disable } | trap { enable | disable } | smtp { enable | disable } | ipush { enable | disable } | digital-out { enable | disable } }

Parameters:		
	group	Configure trap event severity level
	ACL	Group ID ACL
	ACL-Log	Group ID ACL Log
	Access-Mgmt	Group ID Access Management
	Auth-Failed	Group ID Auth Fail
	Cold-Start	Group ID Cold Start
	Config-Info	Group ID Config Info
	DI-1-Abnormal	Group ID DI 1 Abnormal
	DI-1-Normal	Group ID DI 1 Normal
	DMS	Group ID DMS
	Digital-Out	Group ID Digital Out
	Firmware-Upgrade	Group ID Firmware Upgrade
	Import-Export	Group ID Import Export
	LACP	Group ID LACP
	Login	Group ID Login
	Logout	Group ID Logout
	Loop-Protect	Group ID Loop Protect
	MRP-Event	Group ID MRP Event
	Mgmt-IP-Change	Group ID Management IP Change
	Module-Change	Group ID Module Change
	NAS	Group ID NAS
	Over-Max-PoE-Power-Limitation	Group ID Over Max PoE Power Limitation
	PWR-1-Off-On	Group ID PWR 1 Off => On
	PWR-1-On-Off	Group ID PWR 1 On => Off
	PWR-2-Off-On	Group ID PWR 2 Off => On
	PWR-2-On-Off	Group ID PWR 2 On => Off
	Password-Change	Group ID Password Change
	PoE-PD-Off	Group ID PoE PD Off
	PoE-PD-On	Group ID PoE PD On
	PoE-PD-Over-Current	Group ID PoE PD Over Current
	Poe-Auto-Power-Reset	Group ID PoE Auto Power Reset
	Port-Security	Group ID Port Security
	Rapid-Chain-Break	Group ID Rapid Chain Break
	Rapid-Ring-Break	Group ID Rapid Ring Break

Rapid-Ring-Error	Group ID Rapid Ring Error
SCP-Fail	Group ID SCP Fail
SCP-Success	Group ID SCP Success
Spanning-Tree	Group ID Spanning Tree
Temperature	Group ID Temperature
Voltage	Group ID Voltage
Warm-Start	Group ID Warm Start

Example:

```
SISPM1040-582-LRT(config)# event group Mgmt-IP-Change trap enable
SISPM1040-582-LRT(config)# event group Auth-Failed level ?
   <0-7>    <0> Emergency ,<1> Alert ,<2> Critical ,<3> Error ,<4> Warning
            ,<5> Notice ,<6> Informationl ,<7> Debug
SISPM1040-582-LRT(config)# event group Auth-Failed level 2
SISPM1040-582-LRT(config)# event group digital smtp enable
SISPM1040-582-LRT(config)# event group digital syslog enable
SISPM1040-582-LRT(config)# event group digital syslog enable
SISPM1040-582-LRT(config)# do show event port
Port Active  LinkOn  LinkOff Overload RxThreshold TrafficDuration Syslog  Trap  SMTP    DigitalOut Severity
---- ------- ------- ------- -------- ----------- --------------- ------- ------- ------- ---------- --------
1    enable  enable  enable  disable  0          1              enable  disable disable disable    Warning
2    enable  enable  enable  disable  0          1              enable  disable disable disable    Warning
3    enable  enable  enable  disable  0          1              enable  disable disable disable    Warning
4    enable  enable  enable  disable  0          1              enable  disable disable disable    Warning
5    enable  enable  enable  disable  0          1              enable  disable disable disable    Warning
6    enable  enable  enable  disable  0          1              enable  disable disable disable    Warning
7    enable  enable  enable  disable  0          1              enable  disable disable disable    Warning
8    enable  enable  enable  disable  0          1              enable  disable disable disable    Warning
9    enable  enable  enable  disable  0          1              enable  disable disable disable    Warning
-- more --, next page: Space, continue: g, quit: ^C
```

Command: **exec-timeout**

Description: Set Autologout inactivity timeout period in minutes.

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

Parameters:

autologout	autologout
0	off – will not log out at all
1	1 min
10	10 min (default)
2	2 min
20	20 min
3	3 min
30	30 min
4	4 min
40	40 min
5	5 min
50	50 min
60	60 min

Example:

```
SISPM1040-582-LRT(config)# exec-timeout autologout 30
SISPM1040-582-LRT(config)# exec-timeout autologout 0
SISPM1040-582-LRT(config)#
```

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

In summary:

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

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

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

Command: **exit**

Description: Exit from current mode (Exec mode) and disconnect from the terminal program.

Syntax : **exit** <cr>

Parameters: None.

Example:

```
SISPM1040-582-LRT# exit
```

Command: **green-ethernet**

Description: Set EEE to be optimized for least power consumption (the default is optimized for least traffic latency).

Syntax : **green-ethernet** eee optimize-for-power

Parameters: <cr>

Example:

```
SISPM1040-582-LRT(config)# green-ethernet eee optimize-for-power
SISPM1040-582-LRT(config)#
```

Command: **gvrp**

Description: Configure GVRP feature. GVRP (GARP VLAN Registration Protocol) is used for registering VLAN trunking between multilayer switches.

Syntax : **gvrp** time { [join-time <jointime>] [leave-time <leavetime>] [leave-all-time <leavealltime>] }*1

Parameters:

max-vlans	Number of simultaneous VLANs that GVRP can control
time	Configure GARP protocol timer parameters. IEEE 802.1D-2004, clause 12.11.
<1-4095>	Number of max-vlans
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 centi seconds. Range is 1-20. Default is 20.
<1000-5000>	leave-all-time in units of centi seconds Range is 1000-5000. Default is 1000.
<60-300>	leave-time in units of centi seconds. Range is 60-300. Default is 60.
<cr>	

Example:

```
SISPM1040-582-LRT(config)# gvrp max-vlans 333
SISPM1040-582-LRT(config)# gvrp time join-time 8 leave-all-time 2500 leave-time 90
SISPM1040-582-LRT(config)#
```

Command: **hostname**

Description: Set system's network name.

Syntax : **hostname** <hostname>

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

Example:

```
SISPM1040-582-LRT(config)# hostname ABC123
ABC123(config)# hostname SISPM1040-582-LRT
SISPM1040-582-LRT(config)#
```

Command: **interface**

Description: Select an interface to configure. See chapter 26 Interface Config Mode Commands on page 209.

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

Parameters:

*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
vlan	VLAN interface configurations
<port_type_list>	Port list for all port types
<port_type_list>	Port list in 1/1-10
<vlan_list>	List of VLAN interface numbers, 1~4095

Example:

```
SISPM1040-582-LRT(config)# interface GigabitEthernet 1/1-8
SISPM1040-582-LRT(config-if)# poe weekday Fri hour 22
SISPM1040-582-LRT(config-if)# interface vlan 3
SISPM1040-582-LRT(config-if-vlan)# ip address dhcp
SISPM1040-582-LRT(config-if-vlan)#
```

Command: **ip**

Description: Configure Internet Protocol.

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 excluded-address <low_ip> [<high_ip>]
ip dhcp pool <pool_name>
ip dhcp relay
ip dhcp relay information option
ip dhcp relay information policy { drop | keep | replace }
ip dhcp server per-port
ip dhcp server per-port [vlan { <pertPortVLAN> }]
ip dhcp snooping
ip dns proxy
ip domain name { <v_domain_name> | dhcp [ipv4 | ipv6] [interface vlan <v_vlan_id_dhcp>] }
ip gateway interface <ifc>
ip helper-address <v_ipv4_ucast>
ip http port <port>
ip http secure-certificate { upload <url_file> [pass-phrase <pass_phrase>] | generate }
ip http secure-server port <port>
ip igmp host-proxy [leave-proxy]
ip igmp snooping
ip igmp snooping vlan <v_vlan_list>
ip igmp ssm-range <v_ipv4_mcast> <ipv4_prefix_length>
ip igmp unknown-flooding
ip link-local interface <ifc>
ip name-server [<order>] { <v_ipv4_addr> | { <v_ipv6_addr> [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>
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	Dynamic Host Configuration Protocol
dns	Domain Name System
domain	IP DNS Resolver
gateway	Gateway address binding interface

```
  helper-address      DHCP relay server
  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
  interface           ARP inspection entry interface configuration
  GigabitEthernet     1 Gigabit Ethernet Port
  <port_type_id>      Port ID in 1/1-10
  <vlan_id>           Select a VLAN id to configure
  <mac_ucast>         Select a MAC address to configure
  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
  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
  ipv6                DNS setting is derived from DHCPv6; Default selection
  <ipv4_ucast>        IP address of the DHCP relay server
  port                Service port number
  secure-certificate    HTTPS certificate
  secure-server       secure web server
  host-proxy          IGMP proxy configuration
  per-port            Enable DHCP server per port
  snooping            Snooping IGMP
  ssm-range           IPv4 address range of Source Specific Multicast
  unknown-flooding      Flooding unregistered IPv4 multicast traffic
  interface           Select an interface to configure
  <0-3>               Preference of DNS server. Default selection is 0
  <ipv4_addr>         A valid IPv4 unicast address
  <ipv6_addr>         A valid IPv6 unicast address
  dhcp                Dynamic Host Configuration Protocol
  server              support scp server
  disable             Set mode to scp Disable
  enable              Set mode to scp Enable
  binding             IP source binding
  interface           IP source binding entry interface configuration
  GigabitEthernet     1 Gigabit Ethernet Port
```

keyregen	Regenerate ssh key
port	Service port number
<1-65534>	Port number
source	verify source
translate	IP verify source translate all entries
<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 have 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.
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 has it
replace	Replace the original relay information when receive a DHCP message that already contains it.
<ipv4_addr>	Low IP address to exclude
<ipv4_addr>	High IP address to exclude

Example 1:

```
SISPM1040-582-LRT(config)# ip link-local interface 1
SISPM1040-582-LRT(config)# ip verify source translate
IP Source Guard:
       Translate 0 dynamic entries into static entries.
SISPM1040-582-LRT(config)# ip route 192.168.1.100 255.255.255.0 192.168.1.1
% Interface routes are automatically generated by system. Can not add interface route manually.
SISPM1040-582-LRT(config)# ip ssh keyregen
W ssh 06:38:34 148/ssh_change_key#503: Warning: It will take some time. Please wait for key generating
complete...

W ssh 06:38:51 148/ssh_change_key#538: Warning: ECDSA : Public key portion is:
 521 ecdsa-sha2-nistp521 AAAAE2VjZHNhLXNoYTItbmlzdHA1MjEAAAAIbmlzdHA1MjEAAACFBAE
AcJ6GN1lFi7fGtIZFyDxtmYO77KnOhPHCZpOxtl00/9Ip34FrUJuco2flCrgkkJ8+jGX3igG7fOkgduV
PUqwqMwCrBtdKU8ED+t09sv3i9EdqCdBXsRNlBdLO5YTza/vyR+7P3nMtn7oyoNGert+cwVdJdNuV+rg
ENnEmKvHB9O4baQ==
ECDSA: md5 49:dc:4f:1d:e8:97:ec:77:39:a7:fc:48:dc:cf:3a:87


W ssh 06:38:51 148/ssh_change_key#555: Warning: Key generation completed

SISPM1040-582-LRT(config)# ip dhcp server per-port
SISPM1040-582-LRT(config)# ip scp server enable
SISPM1040-582-LRT(config)# ip http secure-server port 443
SISPM1040-582-LRT(config)# ip http secure-certificate generate
SISPM1040-582-LRT(config)# ip dhcp relay information policy drop
SISPM1040-582-LRT(config)# ip dhcp relay information policy keep
SISPM1040-582-LRT(config)# ip dhcp excluded-address 2.3.4.5 3.4.5.6
SISPM1040-582-LRT(config)#
```

Example 2:

```
SISPM1040-582-LRT(config)# ip gateway interface 1
SISPM1040-582-LRT(config)# ip dhcp server per-port vlan 10
SISPM1040-582-LRT(config)#
```

Messages:
% Ip gateway interface 10 binding error!
% No such interface type: v

Example 3 **: DHCP option 3** in FW v7.20.0034: a default gateway can be received on a VLAN other than VLAN 1. Build two DHCP servers with different default routers.

1. Port 1 connect DHCP server 1, configure VLAN 1000; the server will give 192.168.110.x, and the default router is 192.168.110.254.
2. Port 3 connect DHCP server 2, configure VLAN 2000; the server will give 192.168.120.x, and the default router is 192.168.120.254.

```
3. # configure terminal
4. (config)# vlan 1,1000,2000
5. (config)# interface GigabitEthernet 1/1
6. (config-if)# switchport access vlan 1000
7. (config)# interface GigabitEthernet 1/3
8. (config-if)# switchport access vlan 2000
9. (config)# interface vlan 1000
10.(config-if-vlan)# ip address 192.168.110.77 255.255.255.0
11.(config)# interface vlan 2000
12.(config-if-vlan)# ip address 192.168.120.77 255.255.255.0
13.(config)# ip gateway interface 1000
14.(config)# interface vlan 1000
15.(config-if-vlan)# ip address dhcp
16.(config)# interface vlan 2000
17.(config-if-vlan)# ip address dhcp
18.# show ip route
19.(config)# ip gateway interface 2000
20.# show ip route
```

Expected results:
In step 18 you can see 0.0.0.0/0 via 192.168.110.254 <UP GATEWAY HW_RT>.
In step 20, you can see 0.0.0.0/0 via 192.168.120.254 <UP GATEWAY HW_RT>.

Command: **ip dhcp pool**

Description: Configure an IP DHCP Pool.

Syntax :

bootfile <bootFile>
broadcast <ip>
client-identifier { fqdn <identifier> | mac-address <mac> }
client-name <host_name>
default-router <ip> [<ip1> [<ip2> [<ip3>]]]
dns-server <ip> [<ip1> [<ip2> [<ip3>]]]
do <command>
domain-name <domain_name>
end
exit
hardware-address <mac>
help
host <ip> <subnet_mask>
lease { <day> [<hour> [<min>]] | infinite }
netbios-name-server <ip> [<ip1> [<ip2> [<ip3>]]]
netbios-node-type { b-node | h-node | m-node | p-node }
netbios-scope <netbios_scope>
network <ip> <subnet_mask>
nis-domain-name <domain_name>
nis-server <ip> [<ip1> [<ip2> [<ip3>]]]
no bootfile
no broadcast
no client-identifier
no client-name
no default-router
no dns-server
no domain-name
no hardware-address
no host
no lease
no netbios-name-server
no netbios-node-type
no netbios-scope
no network
no nis-domain-name
no nis-server
no ntp-server
no tftp-server
no vendor class-identifier <class_id>
ntp-server <ip> [<ip1> [<ip2> [<ip3>]]]
tftp-server <tftpServer>
vendor class-identifier <class_id> specific-info <hexval>

Parameters:

<word32>	Pool name in 32 characters
bootfile	Boot file name
broadcast	Broadcast address in use on the client's subnet
client-identifier	Client identifier
client-name	Client host name
default-router	Default routers
dns-server	DNS servers
do	To run exec commands in config mode
domain-name	Domain name
end	Go back to EXEC mode
exit	Exit from current mode
hardware-address	Client hardware address
help	Description of the interactive help system
host	Client IP address and mask
lease	Address lease time
netbios-name-server	NetBIOS (WINS) name servers
netbios-node-type	NetBIOS node type
netbios-scope	NetBIOS scope
network	Network number and mask
nis-domain-name	NIS domain name
nis-server	Network information servers
no	Negate a command or set its defaults
ntp-server	NTP servers
tftp-server	TFTP servers
vendor	Vendor configuration
<word32>	Boot file name
<ipv4_addr>	Broadcast IP address
fqdn	FQDN type of client identifier
mac-address	MAC address type of client identifier
<line128>	FQDN in 128 characters
<mac_addr>	MAC address of client
<word32>	Client host name in 32 characters
<ipv4_ucast>	Router's IP address
<ipv4_ucast>	Server's IP address
do	<command>
<word128>	Domain name
<mac_ucast>	Client MAC address
<ipv4_ucast>	Network number
<ipv4_netmask>	Network mask in dotted-decimal notation, excluding 255.255.255.255
<0-365>	Days
infinite	Infinite lease
<0-23>	Hours
<0-59>	Minutes
<ipv4_ucast>	Server's IP address
b-node	Broadcast node
h-node	Hybrid node
m-node	Mixed node

p-node	Peer-to-peer node
<line128>	NetBIOS scope identifier, in 128 characters
<ipv4_ucast>	Network number
<ipv4_netmask>	Network mask in dotted-decimal notation, excluding 255.255.255.255
<word128>	NIS domain name
<ipv4_ucast>	Server's IP address

no bootfile
no broadcast
no client-identifier
no client-name
no default-router
no dns-server
no domain-name
no hardware-address
no host
no lease
no netbios-name-server
no netbios-node-type
no netbios-scope
no network
no nis-domain-name
no nis-server
no ntp-server
no tftp-server
no vendor class-identifier <class_id>

<ipv4_ucast>	Server's IP address
<word32>	TFTP servers
class-identifier	Vendor class identifier
<string64>	Class identifier in 64 characters
vendor class-identifier	<class_id>
specific-info	<hexval>
A.B.C.D	Lighting Server's IP address

Example 1 : Enter 'config-dhcp-pool' mode and configure a DHCP pool:

```
SISPM1040-582-LRT(config)# ip dhcp pool BobB
SISPM1040-582-LRT(config-dhcp-pool)# bootfile CartC
SISPM1040-582-LRT(config-dhcp-pool)# broadcast 188.222.22.23
SISPM1040-582-LRT(config-dhcp-pool)# client-identifier fqdn BobBDomain1
SISPM1040-582-LRT(config-dhcp-pool)# $ntifier mac-address 11-22-33-44-55-66
SISPM1040-582-LRT(config-dhcp-pool)# client-name BobB
SISPM1040-582-LRT(config-dhcp-pool)# default-router 2.3.4.5
SISPM1040-582-LRT(config-dhcp-pool)# dns-server 3.5.7.9
SISPM1040-582-LRT(config-dhcp-pool)# do show ip interface brief
Vlan Address             Method   Status
---- ------------------- -------- ------
   1 192.168.1.77/24      Manual   UP
   2 192.168.2.7/24       Manual   DOWN
   3 192.169.2.3/16       Manual   DOWN
SISPM1040-582-LRT(config-dhcp-pool)#
SISPM1040-582-LRT(config-dhcp-pool)# domain-name Dpool-1
SISPM1040-582-LRT(config-dhcp-pool)# end
SISPM1040-582-LRT# configure terminal
```

```
SISPM1040-582-LRT(config)# ip dhcp pool ?
   <word32>    Pool name in 32 characters
SISPM1040-582-LRT(config)# ip dhcp pool BobB
SISPM1040-582-LRT(config-dhcp-pool)# hardware-address 22-44-66-88-99-11
SISPM1040-582-LRT(config-dhcp-pool)# lease 300 12 30
SISPM1040-582-LRT(config-dhcp-pool)# netbios-name-server 2.3.5.5
SISPM1040-582-LRT(config-dhcp-pool)# netbios-node-type p-node
SISPM1040-582-LRT(config-dhcp-pool)# netbios-scope ScoID4
SISPM1040-582-LRT(config-dhcp-pool)# nis-domain-name TomM
SISPM1040-582-LRT(config-dhcp-pool)# nis-server 132.32.33.3
SISPM1040-582-LRT(config-dhcp-pool)# ntp-server 168.68.77.6
SISPM1040-582-LRT(config-dhcp-pool)# tftp-server TrivFTPSrvr1
SISPM1040-582-LRT(config-dhcp-pool)#
```

Example 2: Show the DHCP pool settings:

```
SISPM1040-582-LRT# show ip dhcp pool

Pool Name: BobB
-------------------------------------------
  Type is -
  IP is -
  Subnet mask is -
  Subnet broadcast address is 188.222.22.23
  Lease time is 300 days 12 hours 30 minutes
  Default router is 2.3.4.5
  Domain name is Dpool-1
  DNS server is 3.5.7.9
  NTP server is 168.68.77.6
  TFTP server is TrivFTPSrvr1
  Boot file is CartC
  Netbios name server is 2.3.5.5
  Netbios node type is P node
  Netbios scope identifier is ScoID4
  NIS domain name is TomM
  NIS server is 132.32.33.3
  Vendor class information is -
  Client identifer is type of MAC address that is 11:22:33:44:55:66
  Hardware address is 22:44:66:88:99:11
  Client name is BobB

Pool Name: DHCP-Per_Pool
-------------------------------------------
  Type is -
  IP is -
  Subnet mask is -
  Subnet broadcast address is -
  Lease time is 1 days 0 hours 0 minutes
  Default router is -
  Domain name is -
  DNS server is -
  NTP server is -
  TFTP server is -
  Boot file is -
  Netbios name server is -
  Netbios node type is -
  Netbios scope identifier is -
  NIS domain name is -
  NIS server is -
  Vendor class information is -
  Client identifer is -
  Hardware address is -
```

```
  Client name is -

Pool Name: pool1
-----------------------------------------------
  Type is -
  IP is -
  Subnet mask is -
  Subnet broadcast address is -
  Lease time is 1 days 0 hours 0 minutes
  Default router is -
  Domain name is -
  DNS server is -
  NTP server is -
  TFTP server is -
  Boot file is -
  Netbios name server is -
  Netbios node type is -
  Netbios scope identifier is -
  NIS domain name is -
  NIS server is -
  Vendor class information is -
  Client identifer is -
  Hardware address is -
  Client name is -

SISPM1040-582-LRT#
```

Example 3: Set DHCP option 229; specify a lighting server available to the client:

```
SISGM1040-582-LRT(config-dhcp-pool)# lighting server ?
A.B.C.D Server's IP address
SISGM1040-582-LRT(config-dhcp-pool)# lighting server 192.168.1.101
SISGM1040-582-LRT(config-dhcp-pool)#
```

This feature should be enabled for any ports used for lighting nodes as it significantly reduces the delay time between when a lighting node is connected to a port and when the switch allows network communication from the lighting node to the lighting gateway. Note: If multicast traffic is not allowed on your network, you can configure the network DHCP server to pass the lighting gateway server IP address in DHCP Option 229.

Command: **ip scp server**

Description: Configure IP SCP Server parameters. SCP (Secure Copy) lets you transfer configuration and firmware files from their servers to the switches. The Secure copy (SCP) file transfer protocol helps transfer computer files securely from a local host to a remote host. SCP file transfer uses authentication and encryption provided by the SSH Protocol. SCP maintains the confidentiality of the data transferred and protects the authenticity by blocking packet sniffers from extracting valuable information from the data packets including password credentials.

Syntax: **ip scp** server { enable | disable }

Parameters:

	server	Support scp server
	disable	Set mode to scp Disabled
	enable	Set mode to scp Enabled

Example:

```
SISPM1040-582-LRT(config)# ip scp server enable
SISPM1040-58-LRT(config)#
```

Firmware version v7.10.1863 added the Secure Copy (SCP) feature on the switch to provide a secure and authenticated method for these features requirements:

1. Download/upload switch startup configuration file.
2. Upgrade switch firmware.
3. Upgrade PoE controller MCU PD69200 MCU code on PoE switch.

A. Switch is SCP server, add SCP command on switch CLI as shown below:
1. Device(config)# ip scp server enable /disable
(SCP default is disabled)

B. Support Windows (WINSCP) and Linux SCP Client on PC to perform these functions:
2. Download Startup Configuration File from Switch to PC, the scp command as shown below:
scp user@host:config/startup.cfg TargetFile

3. Upload Startup Configuration File from PC to Switch, the scp command as shown below:
scp SourceFile user@host:config/startup.cfg

4. PC send new firmware to switch and upgrade switch‘s firmware, the scp command as shown below:
scp SourceFile user@host:image/switch_firmware_upgrade

5. PC send new PoE controller MCU PD69200 software code to switch and upgrade PoE switch‘s PD69200 MCU code, the scp command as shown below:
scp SourceFile user@host:image/pd69200_code_upgrade

Command: **ipmc**

Description: Configure IPv4/IPv6 multicast parameters.

Syntax : **ipmc** profile
ipmc profile <profile_name>
ipmc range <entry_name> { <v_ipv4_mcast> [<v_ipv4_mcast_1>] | <v_ipv6_mcast> [<v_ipv6_mcast_1>] }

Parameters:

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

Example:

```
SISPM1040-582-LRT(config)# ipmc?
   ipmc    IPv4/IPv6 multicast configuration
SISPM1040-582-LRT(config)# ipmc profile test
SISPM1040-582-LRT(config-ipmc-profile)# ?
   default       Set a command to its defaults
   description    Additional description about the profile in 64 characters
   do            To run exec commands in config mode
   end           Go back to EXEC mode
   exit          Exit from current mode
   help          Description of the interactive help system
   no            Negate a command or set its defaults
   range         A range of IPv4/IPv6 multicast addresses for the profile
SISPM1040-582-LRT(config-ipmc-profile)# exit
SISPM1040-582-LRT(config)#
```

Messages: *% Invalid range name 11111.*

Command: **ipv6**

Description: IPv6 configuration commands.

Syntax :

ipv6 mld host-proxy [leave-proxy]
ipv6 mld snooping
ipv6 mld snooping vlan <v_vlan_list>
ipv6 mld ssm-range <v_ipv6_mcast> <ipv6_prefix_length>
ipv6 mld unknown-flooding
ipv6 route <v_ipv6_subnet> { <v_ipv6_ucast> | interface vlan <v_vlan_id> <v_ipv6_addr> }

Parameters:

mld	Multicast Listener Discovery
route	Configure static routes
host-proxy	MLD proxy configuration
snooping	Snooping MLD
ssm-range	IPv6 address range of Source Specific Multicast
unknown-flooding	Flooding unregistered IPv6 multicast traffic
leave-proxy	MLD proxy for leave configuration
vlan	MLD VLAN
<vlan_list>	VLAN identifier(s): VID
<ipv6_mcast>	Valid IPv6 multicast address
<ipv6_subnet>	IPv6 prefix x:x::y/z
<ipv6_ucast>	IPv6 unicast address (except link-local address) of next-hop
interface	Select an interface to configure
vlan	VLAN Interface
<vlan_id>	VLAN identifier(s): VID
<ipv6_linklocal>	IPv6 link-local address of next-hop
<8-128>	Prefix length ranges from 8 to 128

Example:

```
SISPM1040-582-LRT(config)# ipv6 mld host-proxy leave-proxy
SISPM1040-582-LRT(config)# ipv6 mld snooping vlan 1
SISPM1040-582-LRT(config)# ipv6 route??
ipv6 route <v_ipv6_subnet> { <v_ipv6_ucast> | interface vlan <v_vlan_id> <v_ipv6_addr> }
SISPM1040-582-LRT(config)# ipv6 mld unknown-flooding
SISPM1040-582-LRT(config)# ipv6 mld ssm-range ff02::1 12
SISPM1040-582-LRT(config)# ipv6 route fd00::/8 2001:0db8:85a3:0000:0000:8a2e:0370:7334
SISPM1040-582-LRT(config)#
```

Messages:

% Invalid operation for gateway address assignment.

% Link-local address will not be accepted!

Command: **lacp**

Description: Configure LACP settings. The LACP on Air feature provides LACP link aggregation via a wireless AP.

Syntax :

lacp on-air index <v_1_to_8> { { port <port_type> <in_port_type_id> } | { couple-ip <ip1> <ip2> } }
lacp system-priority <v_1_to_65535>

Parameters:

on-air	Lets you set up LACP on Air ports and the Couple IP address for access management.
system-priority	System priority
lacp system-priority	<v_1_to_65535>
<1-65535>	Priority value, lower means higher priority
index	Index
<1-8>	1-8 (lacp on-air index)
couple-ip	Set couple ip address
port	Port
<ipv4_addr>	IPv4 Address
<ipv4_addr>	IPv4 Address
GigabitEthernet	1 Gigabit Ethernet Port
<port_type_id>	Port ID in 1/1-10
<cr>	

Example:

```
SISPM1040-582-LRT(config)# lacp system-priority 333
SISPM1040-582-LRT(config)# do show lacp system
System Priority: 300
SISPM1040-582-LRT(config)# $r index 1 couple-ip 192.168.1.30 192.168.1.40
SISPM1040-582-LRT(config)# lacp on-air index 1 port ?
   GigabitEthernet    1 Gigabit Ethernet Port
SISPM1040-582-LRT(config)# lacp on-air index 1 port GigabitEthernet 1/2
SISPM1040-582-LRT(config)# $r index 1 couple-ip 192.168.1.77 192.168.1.78
SISPM1040-582-LRT(config)# do show lacp on-air
LACP On Air configuration

Index   Port   Couple IP
----- -------- --------------- ---------------
  1   Disabled    192.168.1.77    192.168.1.78
  2         2    192.168.1.77        0.0.0.0
  3         3        0.0.0.0        0.0.0.0
  4   Disabled        0.0.0.0        0.0.0.0
  5   Disabled        0.0.0.0        0.0.0.0
  6   Disabled        0.0.0.0        0.0.0.0
  7   Disabled        0.0.0.0        0.0.0.0
  8   Disabled        0.0.0.0        0.0.0.0
SISPM1040-582-LRT(config)# lacp on-air index 1 couple-ip 199.11.9.1 189.33.16.5
SISPM1040-582-LRT(config)#
```

Command: **line**

Description: Configure a terminal line in config-line mode.

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

Parameters:

<0~16>	List of line numbers
console	Console terminal line
vty	Virtual terminal
debug	Debugging functions
do	To run exec commands in config mode
editing	Enable command line editing
end	Go back to EXEC mode
exec-banner	Enable the display of the EXEC banner
exec-timeout	Set the EXEC timeout
exit	Exit from current mode
help	Description of the interactive help system
history	Control the command history function
length	Set number of lines on a screen
location	Enter terminal location description
motd-banner	Enable the display of the Message Of The Day banner
no	Negate a command or set its defaults
privilege	Change privilege level for line
width	Set width of the display terminal
<line>	Exec Command
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)
<line32>	One text line describing the terminal's location in 32 characters
level	Assign default privilege level for line
<0-15>	Default privilege level for line
<0,40-512>	Number of characters on a screen line (0 for unlimited width)
0	Console Line number
<0~15>	List of VTY numbers
<0-1440>	Timeout in minutes

Example:

```
SISPM1040-582-LRT(config)# line  console 0
SISPM1040-582-LRT(config-line)# do show version brief
Version      : SISPM1040-582-LRT (standalone) VB7.20.0190
Build Date   : 2023-09-04T09:39:13+08:00

SISPM1040-582-LRT(config-line)# exec-timeout 1440
SISPM1040-582-LRT(config-line)# history size 16
SISPM1040-582-LRT(config-line)# no ?
    editing         Enable command line editing
    exec-banner     Enable the display of the EXEC banner
    exec-timeout    Set the EXEC timeout
    history         Control the command history function
    length          Set number of lines on a screen
    location        Enter terminal location description
    motd-banner     Enable the display of the MOTD banner
    privilege       Change privilege level for line
    width           Set width of the display terminal
SISPM1040-582-LRT(config-line)# location SVTLab
```

Command: **lldp**

Description: LLDP and LLDP-MED configuration commands.

Syntax :

lldp holdtime <val>
lldp med datum { wgs84 | nad83-navd88 | nad83-mllw }
lldp med fast <v_1_to_10>
lldp med location-tlv altitude { meters | floors } <v_word11>
lldp med location-tlv civic-addr { { country <country> } | { state | county | city | district | block | street | leading-street-direction | trailing-street-suffix | street-suffix | house-no | house-no-suffix | landmark | additional-info | name | zip-code | building | apartment | floor | room-number | place-type | postal-community-name | p-o-box | additional-code } <v_line> }
lldp med location-tlv elin-addr <v_word25>
lldp med location-tlv latitude { north | south } <v_word8>
lldp med location-tlv longitude { west | east } <v_word9>
lldp med media-vlan-policy <policy_index> { voice | voice-signaling | guest-voice-signaling | guest-voice | softphone-voice | video-conferencing | streaming-video | video-signaling } { untagged | tagged <v_vlan_id> [l2-priority <v_0_to_7>] } [dscp <v_0_to_63>]
lldp reinit <val>
lldp timer <val>
lldp transmission-delay <val>

Parameters:

holdtime	Sets LLDP hold time (The neighbor switch will discarded the LLDP information after "hold time" multiplied with "timer" seconds).
med	Media Endpoint Discovery.
reinit	LLDP tx reinitialization delay in seconds.
timer	Sets LLDP TX interval (The time between each LLDP frame transmitted in seconds).
transmission-delay	Sets LLDP transmission-delay (the amount of time that the transmission of LLDP frames will delayed after LLDP configuration has changed) in seconds.)
<2-10>	2-10 seconds.
datum	Datum (geodetic system) type.
fast	Number of times to repeat LLDP frame transmission at fast start.
location-tlv	LLDP-MED Location Type Length Value parameter.
media-vlan-policy	Used to 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>	fast
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 addtion 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.
meters Specify the altitude in meters.
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
<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.

Example:

```
SISPM1040-582-LRT(config)# lldp holdtime 5
SISPM1040-582-LRT(config)# lldp med fast 5
SISPM1040-582-LRT(config)# lldp reinit 3
SISPM1040-582-LRT(config)# lldp timer 555
SISPM1040-582-LRT(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 1332
SISPM1040-582-LRT(config)# do show lldp
LLDP Configuration
------------------
TX Interval : 13356
TX Hold : 4
```

```
TX Delay : 3339
TX Reinit : 2
SISPM1040-582-LRT(config)#
```

Command: **logging**

Description: Configure System logging messages.

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

Parameters:

host	Syslog host
on	Enable Switch logging host mode
port	Service port number
<domain_name>	The domain name is to provide a mechanism for naming resources on the Internet. A complete domain name consists of one or more subdomain names separated by dots.
<ipv4_ucast>	The IPv4 address of the log server.
<ipv6_ucast>	The IPv6 address of the log server.
<1-65535>	Port number

Example:

```
SISPM1040-582-LRT(config)# logging host 192.168.1.40
SISPM1040-582-LRT(config)# logging port 654
SISPM1040-582-LRT(config)#
```

Command: **loop-protect**

Description: Loop protection configuration.

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

Parameters:

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

Example:

```
SISPM1040-582-LRT(config)# loop-protect
SISPM1040-582-LRT(config)# loop-protect shutdown-time 50000
SISPM1040-582-LRT(config)# loop-protect transmit-time 5
SISPM1040-582-LRT(config)#
```

Command: **mac**

Description: MAC table entries/configuration

Syntax : **mac** address-table aging-time <v_0_10_to_1000000>
mac address-table learning vlan <vlan_list>
mac address-table static <v_mac_addr> vlan <v_vlan_id> [interface (<port_type> [<v_port_type_list>])]

Parameters:

address-table	MAC table entries/configuration
aging-time	Mac address aging time
learning	Mac Learning
static	Static MAC address
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	1 Gigabit Ethernet Port
<port_type_list>	Port list for all port types
<port_type_list>	Port list in 1/1-10
<0,10-1000000>	Aging time in seconds, 0 disables aging

Example:

```
SISPM1040-582-LRT(config)# mac address-table aging-time 3333
SISPM1040-582-LRT(config)# mac address-table learning vlan 100-400
SISPM1040-582-LRT(config)# mac address-table static 11:22:33:44:55:66 vlan 456 interface GigabitEthernet
 1/7
SISPM1040-582-LRT(config)#
```

Command: **map-api-key**

Description: Set Google Map key string. This command lets you set up the Google Map API Key so you can use the DMS Map View for enterprise applications. You need a valid API key and a Google Cloud Platform billing account to access Google core product. If not, DMS Map View will not be able to load Google Maps correctly. To get a Google Map API key:

1: In a Web browser access https://developers.google.com/maps/documentation/directions/get-api-key. 2: Follow the onscreen instructions.

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

Parameters: <word127>

Example:

```
SISPM1040-582-LRT(config)# map-api-key?
   map-api-key    Set google map key string
SISPM1040-582-LRT(config)# map-api-key ?
   <word127>
SISPM1040-582-LRT(config)# map-api-key IAzaSyDgPyXgANx7L6-SYYxhYUvdbPIlQKnNiog
SISPM1040-582-LRT(config)#
```

Command: **mep**

Description: Configure Maintenance Entity Point.

Syntax :

mep <inst> [mip] { up | down } domain { port | evc | vlan | tp-link | tunnel-tp | pw | lsp } [vid <vid>] [flow <flow>] level <level> [interface <port_type> <port>]
mep <inst> ais [fr1s | fr1m] [protect]
mep <inst> aps <prio> [multi | uni] { laps | { raps [octet <octet>] } }
mep <inst> cc <prio> [fr300s | fr100s | fr10s | fr1s | fr6m | fr1m | fr6h]
mep <inst> ccm-tlv
mep <inst> client domain { evc | vlan | lsp } flow <cflow> [level <level>] [ais-prio [<aisprio> | ais-highest]] [lck-prio [<lckprio> | lck-highest]]
mep <inst> dm <prio> [multi | { uni mep-id <mepid> }] [single | dual] [rdtrp | flow] interval <interval> last-n <lastn>
mep <inst> dm bin fd <num_fd_var>
mep <inst> dm bin ifdv <num_ifdv_var>
mep <inst> dm bin threshold <threshold_var>
mep <inst> dm ns
mep <inst> dm overflow-reset
mep <inst> dm proprietary
mep <inst> dm synchronized
mep <inst> lb <prio> [dei] [multi | { uni { { mep-id <mepid> } | { mac <mac>} } } | mpls ttl <mpls_ttl>] count <count> size <size> interval <interval>
mep <inst> lck [fr1s | fr1m]
mep <inst> level <level>
mep <inst> link-state-tracking
mep <inst> lm <prio> [multi | uni] [single | dual] [fr10s | fr1s | fr6m | fr1m | fr6h] [flr <flr>] [threshold <loss_th>]
mep <inst> lm flow-counting
mep <inst> lm oam-counting { [y1731 | all] }
mep <inst> lm-avail interval <interval> flr-threshold <flr_th>
mep <inst> lm-avail maintenance
mep <inst> lm-hli flr-threshold <flr_th> interval <interval>
mep <inst> lm-notif los-int-cnt-holddown <los_int_cnt_holddown> los-th-cnt-holddown <los_th_cnt_holddown> hli-cnt-holddown <hli_cnt_holddown>
mep <inst> lm-sdeg tx-min <tx_min> flr-threshold <flr_th> bad-threshold <bad_th> good-threshold <good_th>
mep <inst> lt <prio> { { mep-id <mepid> } | { mac <mac> } } ttl <ttl>
mep <inst> meg-id <megid> { itu | itu-cc | { ieee [name <name>] } }
mep <inst> mep-id <mepid>
mep <inst> peer-mep-id <mepid> [mac <mac>]
mep <inst> performance-monitoring
mep <inst> syslog
mep <inst> tst <prio> [dei] mep-id <mepid> [sequence] [all-zero | all-one | one-zero] rate <rate> size <size>
mep <inst> tst rx
mep <inst> tst tx
mep <inst> vid <vid>
mep <inst> voe
mep os-tlv oui <oui> sub-type <subtype> value <value>

Parameters:

<1-100>	The MEP instance number.
os-tlv	Organization-Specific TLV
ais	Alarm Indication Signal
aps	Automatic Protection Switching protocol.
cc	Continuity Check.
ccm-tlv	The CCM TLV enable/disable
client	
dm	Delay Measurement.
down	This MEP is a Down-MEP.
lb	Loop Back.
lck	Locked Signal.
level	The MEG level of the MEP.
link-state-tracking	Link State Tracking. When LST is enabled in an instance, Local SF or received 'isDown' in CCM Interface Status TLV, will bring down the residence port. Only valid in Up-MEP. The CCM rate must be 1 f/s or faster.
lm	Loss Measurement.
lm-avail	Availability for Loss Measurement
lm-hli	High Loss Interval for Loss Measurement
lm-notif	Loss Measurement JSON notifications
lm-sdeg	Signal Degrade for Loss Measurement
lt	Link Trace.
meg-id	The ITU/IEEE MEG-ID.
mep-id	The MEP-ID.
mip	This MEP instance is a half-MIP.
peer-mep-id	The peer MEP-ID.
performance-monitoring	Performance monitoring Data Set collection (MEF35).
syslog	Enable syslog.
tst	Test Signal
up	This MEP is a UP-MEP.
vid	The MEP VID.
voe	MEP is VOE based.
fr1m	Frame rate is 1 f/min.
fr1s	Frame rate is 1 f/s.
protect	The AIS can be used for protection. At the point of state change three AIS PDU is transmitted as fast as possible.
<0-7>	Priority in case of tagged OAM. In the MPLS and EVC domain this is the COS-ID.
<0-7>	Priority in case of tagged OAM. In the MPLS and EVC domain this is the COS-ID.
domain	Client flow domain.
evc	EVC client flow.
lsp	MPLS-TP LSP client flow.
vlan	VLAN client flow.
flow	Client flow instance.
<uint>	Client flow instance number value.
ais-prio	AIS injection priority.
lck-prio	LCK injection priority.
level	The MEG level on the client layer.
<0-7>	AIS injection priority value.

ais-highest	Request the highest possible AIS priority.
lck-prio	LCK injection priority.
level	The MEG level on the client layer.
<0-7>	The MEG level value.
<0-7>	Priority in case of tagged OAM. In the MPLS and EVC domain this is the COS-ID.
bin	Delay Measurement Binning.
ns	Nano Seconds
overflow-reset	Reset all Delay Measurement results on total delay counter overflow.
proprietary	Proprietary Delay Measurement.
synchronized	Near end and far end is real time synchronized.
dual	Delay Measurement based on 1DM PDU transmission.
flow	The two way delay is calculated as round trip symmetrical flow delay. The far end residence time is subtracted.
interval	Interval between PDU transmission in 10ms. Min value is 10.
multi	OAM PDU is transmitted with multicast MAC.
rdtrp	The two way delay is calculated as round trip delay. The far end residence time is not subtracted.
single	Delay Measurement based on DMM/DMR PDU.
uni	OAM PDU is transmitted with unicast MAC. The MAC is taken from peer MEP MAC database.
<uint>	Interval value.
last-n	The last N dalays used for average last N calculation. Min value is 10.
<uint>	The last N value.
oui	Organizationally Unique Identified.
<0-0xFFFFFF>	
sub-type	Sub-Type
<0-0xFF>	Sub-Type value - one octet.
value	Value
<0-0xFF>	Value value - one octet

Example:

```
SISPM1040-582-LRT(config)# mep 1 cc 3 fr1m
This MEP is not enabled
SISPM1040-582-LRT(config)# mep 1 cc 3 fr1m
Error: Invalid number of peer's for this configuration
SISPM1040-582-LRT(config)# mep 1 cc 1 fr1m
SISPM1040-582-LRT(config)# mep 1 ccm-tlv
SISPM1040-582-LRT(config)# mep os-tlv oui 02 sub-type 0 value 1
SISPM1040-582-LRT(config)#
```

Command: **monitor**

Description: Configure a Mirror session.

Syntax : **monitor** session <session_number> [destination { interface (<port_type> [<di_list>]) | remote vlan <drvid> reflector-port <port_type> <rportid> } | source { interface (<port_type> [<si_list>]) [both | rx | tx] | remote vlan <srvid> | vlan <source_vlan_list> | cpu [both | rx | tx] } | intermediate { interface (<port_type> [<ii_list>]) | remote vlan <irvid> }]

Parameters:

session	Configure a MIRROR session
<1>	MIRROR session number
destination	MIRROR destination interface or VLAN
intermediate	MIRROR intermediate interface, VLAN
source	MIRROR source interface, VLAN
interface	MIRROR destination interface
remote	MIRROR destination Remote
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
<port_type_list>	Port list for all port types
<port_type_list>	Port list in 1/1-10
interface	MIRROR intermediate interface
remote	MIRROR intermediate Remote
vlan	MIRROR intermediate Remote number
<vlan_id>	Remote MIRROR intermediate RMIRROR VLAN number
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
<vlan_id>	Remote MIRROR source RMIRROR VLAN number
<vlan_list>	MIRROR source VLAN
reflector-port	Remote MIRROR reflector interface
<port_type_id>	Remote MIRROR reflector interface number

Example:

```
SISPM1040-582-LRT(config)# monitor session 1 destination remote vlan 200 ?
   reflector-port    Remote MIRROR reflector interface
SISPM1040-582-LRT(config)# $ destination remote vlan 200 reflector-port ?
   GigabitEthernet    1 Gigabit Ethernet Port
SISPM1040-582-LRT(config)# $ote vlan 200 reflector-port GigabitEthernet 1/6
% Any device connected to a port set as a reflector port loses connectivity until the Remote Mirroring
is disabled.
SISPM1040-582-LRT(config)# monitor session 1 intermediate interface *
SISPM1040-582-LRT(config)# monitor session 1 intermediate remote vlan 100
SISPM1040-582-LRT(config)#
```

Messages:

% Interface GigabitEthernet 1/7 already configured as destination port.

% Any device connected to a port set as a reflector port loses connectivity until the Remote Mirroring is disabled.

Command: **mrp**

Description: Create 1-2 new Media Redundancy Protocol instances, set parameters, and delete instances. MRP is a data network protocol standardized by the International Electrotechnical Commission as IEC 62439-2. MRP allows Ethernet switch rings to overcome any single failure with recovery time much faster than achievable with Spanning Tree Protocol. See the IETF website for more MRP information. See chapter 27 MRP Pre-Requisites and Application Examples on page 246.

Syntax :

mrp <domainId> client blocked-state { enable | disable }
mrp <domainId> client link-interval <downInterval> <upInterval> [<linkChangeCount>]
mrp <domainId> diag-clear
mrp <domainId> manager link-change-react { enable | disable }
mrp <domainId> manager media-redundancy { enable | disable }
mrp <domainId> manager nonblocking-supported { enable | disable }
mrp <domainId> manager priority <priority>
mrp <domainId> manager test-interval <testInterval> [<shortTestInterval>]
mrp <domainId> manager test-monitoring <count> [<extendedCount>]
mrp <domainId> manager topology-change <topoChangeInterval> [<topoChangeRepeatCount>]
mrp <domainId> name <domainName>
mrp <domainId> ringport { primary | secondary } <port_type> <mrp_port>
mrp <domainId> ringport-delete { primary | secondary }
mrp <domainId> role { manager | client }
mrp <domainId> status { enable | disable }
mrp <domainId> uuid <domainUUID>
mrp <domainId> vlan <vlanId>
mrp domain delete <domainId>
mrp domain new <domainId>

Parameters:

<1-2>	DomainID of Domain to modify
domain	Create/Delete MRP Domain
client	Operate on an MRP Client
diag-clear	Clear Diagnostic stats for MRP Domain
manager	Operate on an MRP Manager
name	Set name for Domain
ringport	Set/Add Ringport
ringport-delete	Delete Ringport
role	Set role in Domain to manager or client
status	Enable/Disable a domain
uuid	Set UUID for Domain
vlan	Set VLAN for Domain
delete	Delete an MRP Domain
new	Create a new MRP Domain
<1-2>	Domain ID of Domain to be deleted
<1-2>	Domain ID of new Domain
blocked-state	Enable/Disable Blocked State support for MRP Client
link-interval	Set Client Link Intervals and Count for MRP Client
disable	Disable Client Blocked State support
enable	Enable Client Blocked State support (default)
<1-50>	Client Link Down Interval in ms (default=20)
<1-50>	Client Link Up Interval in ms (default=20)

<1-10>	Client Link Change Count (default=4)
link-change-react	Enable/Disable Manager Link Change Reaction
media-redundancy	Enable/Disable Manager Media Redundancy Mode (MRM)
nonblocking-supported	Enable/Disable Manager Non-blocking support
priority	Set Manager Priority
test-interval	Set Manager Test Intervals
test-monitoring	Set Manager Test Monitoring values
topology-change	Set Manager Topology Change settings
disable	Disable Manager link change reaction (default)
enable	Enable Manager link change reaction
disable	Disable Manager Monitor mode
enable	Enable Manager Monitor mode (default)
disable	Disable Manager Non-blocking support (default)
enable	Enable Manager Non-blocking support
<0-15>	New Manager Priority (0 is highest, default=8)
<word32>	Updated Domain name
primary	Set primary Ringport
secondary	Set secondary Ringport
GigabitEthernet	1 Gigabit Ethernet Port
<port_type_id>	Port ID in 1/1-10
primary	Delete the primary Ringport
secondary	Delete the secondary Ringport
client	Set role in Domain to client
manager	Set role in Domain to manager
disable	Disable Domain
enable	Enable Domain

Example:

```
SISPM1040-582-LRT(config)# mrp domain new 1
SISPM1040-582-LRT(config)# mrp 1 diag-clear
SISPM1040-582-LRT(config)# mrp 1 name ccc
SISPM1040-582-LRT(config)# mrp 1 role client
SISPM1040-582-LRT(config)#
```

Messages:

W mrp 146/mrp_icli_client_blocked_state#501: Warning: MRP Client Blocked State: unable to modify domain with Id 1, Domain is enabled

W mrp 145/mrp_icli_domain_new#183: Warning: MRP Domain Create: unable to create domain with Id 1, Domain exists

W mrp 146/mrp_icli_domain_uuid#219: Warning: MRP Domain UUID: The UUID incorrect

Command: **mvr**

Description: Multicast VLAN Registration configuration. The MVR protocol is used for Layer 2 (IP)-networks to enable multicast-traffic from a source VLAN to be shared with subscriber-VLANs. You can create up to four MVR VLANs with corresponding channel profile for each Multicast VLAN.
Caution: MVR source ports are not recommended to be overlapped with management VLAN ports.

Syntax: **mvr**
mvr name <mvr_name> channel <profile_name>
mvr name <mvr_name> frame priority <cos_priority>
mvr name <mvr_name> frame tagged
mvr name <mvr_name> igmp-address <v_ipv4_ucast>
mvr name <mvr_name> last-member-query-interval <ipmc_lmqi>
mvr name <mvr_name> mode { dynamic | compatible }
mvr vlan <v_vlan_list> [name <mvr_name>]
mvr vlan <v_vlan_list> channel <profile_name>
mvr vlan <v_vlan_list> frame priority <cos_priority>
mvr vlan <v_vlan_list> frame tagged
mvr vlan <v_vlan_list> igmp-address <v_ipv4_ucast>
mvr vlan <v_vlan_list> last-member-query-interval <ipmc_lmqi>
mvr vlan <v_vlan_list> mode { dynamic | compatible }

Parameters:

name	MVR multicast name
<word16>	MVR multicast VLAN name
vlan	MVR multicast vlan
channel	MVR channel configuration
frame	MVR control frame in TX
igmp-address	MVR address configuration used in IGMP
last-member-query-interval	Last Member Query Interval in tenths of a second
mode	MVR mode of operation
<word16>	Profile name in 16 char's
<vlan_list>	MVR multicast VLAN list
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; MVR membership reports are forbidden on source ports.
dynamic	Dynamic MVR operation mode (default); MVR allows dynamic MVR membership reports on source ports.

Example:

```
SISPM1040-582-LRT(config)# mvr name MCVID10 mode compatible
SISPM1040-582-LRT(config)# mvr vlan 10
SISPM1040-582-LRT(config)# mvr vlan 10 last-member-query-interval 3500
SISPM1040-582-LRT(config)# mvr name MCVID10 frame priority 4
SISPM1040-582-LRT(config)# mvr name MCVID10 igmp-address 192.168.1.99
SISPM1040-582-LRT(config)# mvr name MCVID10 last-member-query-interval 900
SISPM1040-582-LRT(config)# do show mvr

MVR is now enabled to start group registration.
```

```
Switch-1 MVR-IGMP Interface Status

IGMP MVR VLAN 10 (Name is MCVID10) 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 10 (Name is MCVID10) 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>
SISPM1040-582-LRT(config)#
SISPM1040-582-LRT(config)#
```

Messages:

% Invalid MVR VLAN MCVID10.

% Failed to set MVR interface mode setting.

% Failed to set MVR interface channel.

% Failed to set MVR frame tagged settings.

% Failed to set MVR interface mode setting.

% Only the first given MVR VLAN applies interface configuration.

% Invalid MVR VLAN ID 1.

% Invalid operation.

Command: **no**

Negate a command or set its defaults. Table : no Commands (**Config** mode).

Command	Function
aaa	Authentication, Authorization and Accounting
access	Access management
access-list	Access list
aggregation	Aggregation mode
always-on-poe	Disable Always On PoE
banner	Define a login banner
clock	Configure time-of-day clock
command-history-log	Disable to Save Command Histry to Flash
debug	Debugging functions
dot1x	IEEE Standard for port-based Network Access Control
enable	Modify enable password parameters
eps	Ethernet Protection Switching.
erps	Ethernet Ring Protection Switching
evc	Ethernet Virtual Connections
exec-timeout	No Auto-logout timeout
green-ethernet	Green ethernet (Power reduction)
gvrp	Enable GVRP feature
hostname	Set system's network name
interface	Select an interface to configure
ip	Internet Protocol
ipmc	IPv4/IPv6 multicast configuration
ipv6	IPv6 configuration commands
lacp	LACP settings
lldp	LLDP configurations.
logging	System logging message
loop-protect	Loop protection configuration
mac	MAC table entries/configuration
map-api-key	Google Map API key
mep	Maintenance Entity Point
monitor	Monitoring different system events
mvr	Multicast VLAN Registration configuration
ntp	Configure NTP
poe	Power Over Ethernet.
port-security	Enable/disable port security globally.
privilege	Command privilege parameters
ptp	Precision time Protocol (1588)
qos	Quality of Service
radius-server	Configure RADIUS
rmon	Remote Monitoring
sflow	Statistics flow.
snmp-server	Enable SNMP server
spanning-tree	STP Bridge
switchport	VLAN
system	Set the system description
tacacs-server	Configure TACACS+
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
<cword>	Valid words are:

Aggregation	DHCP	DHCPv6_Client	DMS_client
DMS_server	Debug	Diagnostics	EEE
EPS	ERPS	ETH_LINK_OAM	EVC
Green_Ethernet	IP	IPMC_Snooping	Install_Wizard
LACP	LLDP	Loop_Protect	MAC_Table
MEP	MRP	MVR	Maintenance
NTP	POE	PTP	Ports
Private_VLANs	QoS	RMirror	R_RING
SMTP	Security	Spanning_Tree	System
TS_client	TS_server	Trap_Event	Trouble_Shooting
UDLD	UPnP	VCL	VLAN_Translation
VLANs	VTUN	Voice_VLAN	XXRP
level	sFlow		

Command: **no**

Negate a command or set its defaults. Table : no Commands (**Exec** mode).

Command	Function
debug	Debugging functions
port-security	Port security (MAC limit)
ptp	Misc non persistent 1588 settings.
terminal	Set terminal line parameters
interrupt-monitor	Print out of reception of the selected interrupt source.
ipv6	IPv6 configuration commands
misc	Miscellaneous commands
trace	No debug trace
hunt	No debug trace hunt
source	The selected interrupt source.
<uint>	Possible values are *enum vtss_interrupt_source_t* values found in file board/interrupt_api.h
nd	IPv6 Neighbor Discovery debugging
shutdown	Reopen one or more ports whose limit is exceeded and shut down.
interface	Switch interface to configure
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
<0-3>	Clock instance [0-3]
wireless	Enable wireless mode for one or more interfaces.
mode	Enable wireless mode for an interface.
interface	Interface
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
<port_type_list>	Port list in 1/1-10
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:

```
SISPM1040-582-LRT# no port-security shutdown interface GigabitEthernet 1/10
SISPM1040-582-LRT#
```

Command: **no**

Negate a command or set its defaults. Table : no Commands (**Interface Config** mode)

access-list	Access list
aggregation	Aggregation keyword
debug	Debugging functions
description	To clear port description
dot1x	IEEE Standard for port-based Network Access Control
duplex	Set duplex to default.
excessive-restart	Restart backoff algorithm after 16 collisions
flowcontrol	Configure flow control.
frame-length-check	Do not drop frames with mismatch between EtherType/Length field and actual payload size.
green-ethernet	Green ethernet (Power reduction)
gvrp	Enable GVRP on interface or interfaces
ip	Internet Protocol
ipv6	IPv6 configuration commands
lacp	Enable LACP on this interface
link-oam	Enable or Disable(when the no keyword is entered) Link OAM on the interface
lldp	LLDP configurations.
loop-protect	Loop protection configuration on port
mac	MAC keyword
mtu	Maximum transmission unit
mvr	Multicast VLAN Registration configuration
poe	Power Over Ethernet.
port-security	Enable/disable port security per interface.
ptp	Disable PTP for the interface(s)
pvlan	Private VLAN
qos	Quality of Service
rmon	Configure Remote Monitoring on an interface
sflow	Statistics flow.
shutdown	Shutdown of the interface.
spanning-tree	Enable/disable STP on this interface
speed	Configure speed to default.
switchport	Switching mode characteristics
udld	Disable UDLD

Example:

```
SISPM1040-582-LRT(config)# no switchport vlan mapping 10 200
SISPM1040-582-LRT(config)#
```

Command: **ntp**

Description: Configure NTP server.

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

Parameters:

automatic	Configure Automatic
interval	Configure NTP Time-Sync Interval
server	Configure NTP server
<5,10,15,30,60,120>	Time-Sync Interval in seconds
<1-5>	index number
ip-address	ip address
<domain_name>	domain name
<ipv4_ucast>	ipv4 address
<ipv6_ucast>	ipv6 address

Example:

```
SISPM1040-582-LRT(config)# ntp server 1 ip-address 192.168.1.70
SISPM1040-582-LRT(config)# ntp server 1 ip-address domain1
SISPM1040-582-LRT(config)# ntp server 1 ip-address 1.2.3.4
SISPM1040-582-LRT(config)# ntp interval 10
SISPM1040-582-LRT(config)# ntp automatic
SISPM1040-582-LRT(config)# exit
SISPM1040-582-LRT# show ntp status
NTP Mode : disabled
Automatic: enabled
Idx   Server IP host address (a.b.c.d)
---   ------------------------------------------------------
1

Idx   Server IP host address (a.b.c.d) or a host name string
---   ------------------------------------------------------
1     2.4.6.8
2
3
4
5
SISPM1040-582-LRT#
```

Command: **percepxion**

Description: Percepxion configuration. See Appendix C Percepxion and LPM Commands on page 263.

Syntax:

Parameters:

Example:

Command: **poe**

Description: Configure Power Over Ethernet (before FW VB7.10.2658).

Syntax : **poe** capacitor-detection

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

poe ping-check { enable | disable }

poe profile id <id> name <entry_name>

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

poe reboot-chip mode { enable | disable }

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

Parameters:

capacitor-detection	PoE legacy mode on
management	Use management mode to configure PoE power management method.
ping-check	Enable/Disable POE Ping Check.
profile	poe scheduling profile
reboot-chip	poe schedules to reboot PoE chip
allocation-consumption	Max. port power determined by allocated, and power is managed according to power consumption.
allocation-reserved-power	Max. port power determined by allocated, and power is managed according to reserved power.
class-consumption	Max. port power determined by class, and power is managed according to power consumption.
class-reserved-power	Max. port power determined by class, and power is managed according to reserved power.
lldp-consumption	Max. port power determined by LLDP Media protocol, and power is managed according to power consumption.
lldp-reserved-power	Max. port power determined by LLDP Media protocol, and power is managed according to reserved power.

Example:

```
SISPM1040-582-LRT(config)# poe ping-check enable
SISPM1040-582-LRT(config)# poe management mode alloc
allocation-consumption     allocation-reserved-power
SISPM1040-582-LRT(config)# poe management mode allocation-
allocation-consumption     allocation-reserved-power
SISPM1040-582-LRT(config)# $e management mode allocation-reserved-power ?
   <cr>
SISPM1040-582-LRT(config)# $e management mode allocation-reserved-power
SISPM1040-582-LRT(config)#
```

Command: **poe**

Description: Configure Power Over Ethernet (FW VB7.10.2658 and after).

Syntax :

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

Parameters:

ping-check	Enable/Disable POE Ping Check.
profile	poe scheduling profile
reboot-chip	poe schedules to reboot PoE chip
disable	Disable POE Ping Check.
enable	Enable POE Ping Check.
id	poe scheduling profile id
<1-16>	poe scheduling profile id, from 1 to 16
Fri	Configure PoE Power scheduling on Friday
Mon	Configure PoE Power scheduling on Monday
Sat	Configure PoE Power scheduling on Saturday
Sun	Configure PoE Power scheduling on Sunday
Thr	Configure PoE Power scheduling on Thursday
Tue	Configure PoE Power scheduling on Tuesday
Wed	Configure PoE Power scheduling on Wednesday
name	poe scheduling profile name, the name length is 32
<0-23>	start hour
<0-55>	start miniute, value must be multiples of 5
<0-23>	end hour
<0-55>	end miniute, value must be multiples of 5
Fri	Configure PoE Reboot scheduling on Friday
Mon	Configure PoE Reboot scheduling on Monday
Sat	Configure PoE Reboot scheduling on Saturday
Sun	Configure PoE Reboot scheduling on Sunday
Thr	Configure PoE Reboot scheduling on Thursday
Tue	Configure PoE Reboot scheduling on Tuesday
Wed	Configure PoE Reboot scheduling on Wednesday
mode	Configure poe reboot mode
<0-23>	start hour
<0-55>	start miniute, value must be multiples of 5
Mon	Configure PoE Reboot scheduling on Monday

Sat	Configure PoE Reboot scheduling on Saturday
Sun	Configure PoE Reboot scheduling on Sunday
Thr	Configure PoE Reboot scheduling on Thursday
Tue	Configure PoE Reboot scheduling on Tuesday
Wed	Configure PoE Reboot scheduling on Wednesday
<cr>	

Example:

```
SISPM1040-582-LRT(config)# poe ping-check enable
SISPM1040-582-LRT(config)# poe profile id 1 Sun 9  30 4 55
SISPM1040-582-LRT(config)# poe reboot-chip fri 4 20  Wed 0 15
SISPM1040-582-LRT(config)#
```

Command: **port-security**

Description: Enable/disable port security globally and set aging time.

Syntax : **port-security**
port-security aging
port-security aging time <v_10_to_10000000>
<cr>

Parameters:

aging	Enable/disable port security aging.
time	Time in seconds between check for activity on learned MAC addresses.
<10-10000000>	seconds

Example:

```
SISPM1040-582-LRT(config)# port-security aging time 1000
SISPM1040-582-LRT(config)#
```

Command: **privilege**

Description: Configure Command privilege parameters.

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

Parameters: <cword> Valid words are 'config-vlan' 'configure' 'dhcp-pool' 'exec' 'if-vlan' 'interface' 'ipmc-profile' 'line' 'snmps-host' 'stp-aggr'

Example:

```
SISPM1040-582-LRT(config)# privilege if-vlan level 15 if-vlan ?
   <line128>    Initial valid words and literals of the command to modify, in
                128 characters
   <cr>
SISPM1040-582-LRT(config)# privilege if-vlan level 15 if-vlan ?
privilege <mode_name> level <privilege> <cmd>
SISPM1040-582-LRT(config)# privilege config-vlan level 10 LINE
SISPM1040-582-LRT(config)# privilege configure level 10 LINE
SISPM1040-582-LRT(config)# privilege dhcp-pool level 10 LINE
SISPM1040-582-LRT(config)#
```

Command: **ptp**

Description: Configure Precision Time Protocol (1588).

Syntax :

ptp <clockinst> clk sync <threshold> ap <ap>
ptp <clockinst> domain <domain>
ptp <clockinst> filter [delay <delay>] [filter-type { basic | ms-pdv }] [period <period>] [dist <dist>]
ptp <clockinst> ho [filter <ho_filter>] [adj-threshold <adj_threshold>]
ptp <clockinst> log <debug_mode>
ptp <clockinst> mode { boundary | e2etransparent | p2ptransparent | master | slave | bcfrontend } [onestep | twostep] [ethernet | ethernet-mixed | ip4multi | ip4mixed | ip4unicast | oam | onepps] [oneway | twoway] [id <v_clock_id>][vid <vid> [<prio>] [tag]] [mep <mep_id>] [profile { ieee1588 | g8265.1 | g8275.1 }] [clock-domain 0] [dscp <dscp_id>]
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 phase-mode
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>]
ptp <clockinst> uni <idx> [duration <duration>] <ip>
ptp ext [output | input | out-in] [ext <clockfreq>] [vcxo | ltc-freq | synce-dpll | osc | ltc-phase]
ptp ref-clock { mhz125 | mhz156p25 | mhz250 }
ptp system-time { get | set }
ptp tc-internal [mode <mode>]

Parameters:

<0-3>	Clock instance [0-3]
ext	Update 1PPS and External clock output config and vcxo frequency rate adjustment option
system-time	Enable synchronization between PTP time and system time
tc-internal	Define the internal mode used in TC's
clk	Set PTP slave clock options
domain	Clock domain for PTP
filter	Set filter parameters
ho	Set PTP Servo holdover parameters
log	Set the PTP debug mode
mode	Enable a PTP instance
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
<1-1000>	[1..1000] Threshold in ns for offsetFromMaster 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
delay	Set delay filter parameter
dist	Set offset filter dist parameter
filter-type	Define offset filter type
period	Set offset filter period parameter
<0-6>	Log2 of timeconstant in delay lowpass filter, valid range: 1-6, Setting the value to 0 means use the same filter function as for the offset measurement, in this case the delay filter uses the 'period' and 'dist' parameters.
<1-10>	Distance between servo update n number of measurement periods, valid range: 1-10
basic	Basic offset filter
ms-pdv	MS-PDV
<1-10000>	Measurement period in number of sync events, valid range: 1-10000
<10-86400>	[10..86400] Holdover filter and stabilization period
adj-threshold	Set adjustment threshold
<1-4>	1-4 Debug log mode, 1 => log offset from master, 2 => log sync packets, 3 => log Delay_req, 4 => log both
bcfrontend	Boundary Clock front end
boundary	Ordinary / Boundary clock
e2etransparent	End to end transparent clock
master	Master only clock
p2ptransparent	Peer to peer transparent clock
slave	Slave only clock
<0-255>	PTP clock priority1: range = 0-255
<0-255>	PTP clock priority2: range = 0-255
ad	Set 'D' parameter in the servo
ai	Set 'I' parameter in the servo
ap	Set 'P' parameter in the servo
displaystates	Enable logging of servo parameters on the console
phase-mode	Enable phase mode in the servo
offset-fail	set the offset-fail threshold
offset-ok	set the offset-ok threshold
stable-offset	set the stable-offset threshold
freq-traceable	frequency is traceable
leap-59	leap59 in current day
leap-61	leap61 in current day
ptptimescale	timing is a PTP time scale
time-source	set timesource
time-traceable	timing is traceable
utc-offset	set utc offset
valid	UTC offset is valid
<0-4>	Index in the slave table [0..4]

Example:

```
SISPM1040-582-LRT(config)# ptp 1 clk sync 1 ap 1
SISPM1040-582-LRT(config)# ptp 1 ho adj-threshold 1 filter 19
SISPM1040-582-LRT(config)# ptp 1 log 2
SISPM1040-582-LRT(config)# ptp system-time get
System clock synch mode (Get PTP time from System time)
SISPM1040-582-LRT(config)#
```

QoS

Table : configure – qos Commands

Command	Function
map	Global QoS Map/Table
qce	QoS Control Entry
storm	Storm policer

Command: **map**

Description: Configure Global QoS Map/Table.

Syntax :

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

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

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

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

Parameters:		
	cos-dscp	Map for CPS to DSCP
	dscp-classify	Map for DSCP classify enable
	dscp-cos	Map for DSCP to COS
	dscp-cos	Map for DSCP to COS
	dscp-ingress-translation	Map for DSCP ingress translation

Example:

```
SISPM1040-582-LRT(config)# qos map cos-dscp 5 dpl 1 dscp 20
SISPM1040-582-LRT(config)# qos map dscp-cos be cos 5 dpl 1
SISPM1040-582-LRT(config)#
```

Command: **qce**

Description: Configure QoS Control Entry.

Syntax :

qos qce refresh

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

Parameters:

<1-256>	QCE ID
refresh	Refresh QCE tables in hardware
update	Update an existing QCE
<1-256>	QCE ID
action	Setup action
dmac	Setup matched DMAC
frame-type	Setup matched frame type
interface	Interfaces
last	Place QCE at the end
next	Place QCE before the next QCE ID
smac	Setup matched SMAC. If 'qos qce addr destination' is set, this parameter specifies the DMAC
tag	Setup tag options
cos	Setup class of service action
dpl	Setup drop precedence level action
dscp	Setup DSCP action
pcp-dei	Setup PCP and DEI action
policy	Setup ACL policy action
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

<1-256>	The next QCE ID
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
action	Setup action
dmac	Setup matched DMAC
frame-type	Setup matched frame type
interface	Interfaces
smac	Setup matched SMAC. If 'qos qce addr destination' is set, this parameter specifies the DMAC
tag	Setup tag options
<1-256>	The next QCE ID
<mac_addr>	Matched SMAC (XX-XX-XX-XX-XX-XX)
any	Match any SMAC
dei	Setup matched DEI
pcp	Setup matched PCP
type	Setup matched tag type
vid	Setup matched VLAN ID
<cr>	

Example:

```
SISPM1040-582-LRT(config)# qos qce 100 action cos default dmac any tag dei ?
   <0-1>    Matched DEI
   any      Match any DEI
SISPM1040-582-LRT(config)# qos qce 100 action cos default dmac any tag dei 1 ?
SISPM1040-582-LRT(config)# qos qce 100 action cos default dmac any tag dei 1
SISPM1040-582-LRT(config)#
```

Command: **storm**

Description: Configure QoS Storm policer.

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

Parameters:

broadcast	Police broadcast frames
multicast	Police multicast frames
unicast	Police unicast frames
<1-1024000>	Policer rate (default fps). Valid values are:{ 1, 2, 4, 8, 16, 32, 64, 128, 256, 512 } fps or kfps | 1024 fps | { 1000, 2000, 4000, 8000, 16000, 32000, 64000, 128000, 256000, 512000, 1024000 } fps .
fps	Unit is frames per second (default)
kfps	Unit is kiloframes per second

Example:

```
SISPM1040-582-LRT(config)# qos storm broadcast 256 kfps
SISPM1040-582-LRT(config)# qos storm unicast 4000 kfps
% QOS: max rate is 1024 when using kfps
SISPM1040-582-LRT(config)# qos storm unicast 1 fps
SISPM1040-582-LRT(config)#
```

Messages: *% QOS: 1024 must be in {1, 2, 4, 8, 16, 32, 64, 128, 256, 512} fps or kfps | 1024 kfps*

Command: **radius**

Description: Configure up to five RADIUS servers.

Syntax :

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

Parameters:

attribute	NAS attributes
deadtime	Time to stop using a RADIUS server that doesn't respond
host	Specify a RADIUS server
key	Server specific 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
<1-1440>	Time in minutes
<word1-255>	Hostname or IP address
<word1-63>	The UNENCRYPTED (Plain Text) secret key. Notice that you have no chance to get the Plain Text secret key after this command. The system will always display the ENCRYPTED password.
encrypted	Specifies an ENCRYPTED secret key will follow
unencrypted	Specifies an UNENCRYPTED secret key will follow
<1-1000>	Number of retries for a transaction (retransmits)
<1-1000>	Wait time in seconds
acct-port	UDP port for RADIUS accounting server
auth-port	UDP port for RADIUS authentication server
key	Server specific key (overrides default)
retransmit	Specify the number of retries to active server (overrides default)
timeout	Time to wait for this RADIUS server to reply (overrides default)
<0-65535>	UDP port number or 0 to disable accounting
<0-65535>	UDP port number or 0 to disable authentication
<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:

```
SISPM1040-582-LRT(config)# radius-server attribute 32 NasId1
SISPM1040-582-LRT(config)# radius-server host RadHst1 acct-port 1813
SISPM1040-582-LRT(config)# radius-server host RadHst1 auth-port 1812
SISPM1040-582-LRT(config)# radius-server host mmmmm acct-port 1813 auth-port 1812 key admin2-
Engineering retransmit 300 timeout 500
```

Command: **rapid-ring / rapid-chain**

Description: Configure Rapid Ring parameters. **Note** that STP must be disabled. **Note** that Rapid Ring and Rapid Chain can be configured via the front panel DIP switch (i.e., without using the Web UI or CLI). See the *Install Guide* for details.

Syntax :

rapid-ring entry <entryindex> role disabled port1 <port_type> <rport1> port2 <port_type> <rport2>
rapid-ring entry <entryindex> role master port1 <port_type> <rport1> port2 <port_type> <rport2>
rapid-ring entry <entryindex> role member port1 <port_type> <rport1> port2 <port_type> <rport2>
rapid-ring entry <entryindex> role rapid-chain port1 <port_type> <rport1> port2<port_type> <rport2>

Parameters:

entry	Set entry index
<uint8>	index
role	Set role value
disabled	role value disabled
master	role value master
member	role value member
rapid-chain	role value rapid-chain
port1	Set port1
GigabitEthernet	1 Gigabit Ethernet Port
<port_type_id>	Port ID in 1/1-10
port2	Set port2

Example 1: Configure and show *Rapid Ring* configuration:

```
SISPM1040-582-LRT(config)# rapid-ring entry 1 role master port1 GigabitEthernet 1/5 port2
GigabitEthernet 1/6
SISPM1040-582-LRT(config)# rapid-ring entry 1 GigabitEthernet 1/8 port2 GigabitEthernet 1/10
SISPM1040-582-LRT(config)# end
SISPM1040-582-LRT# show rapid-ring
Entry Index              : 1
Rapid Ring Role          : Master
Rapid Ring Port 1        : 8
Rapid Ring Port 2        : 10
Rapid Ring Port 1 State   : Discarding
Rapid Ring Port 2 State   : Discarding

Entry Index              : 2
Rapid Ring Role          : Member
Rapid Ring Port 1        : 3
Rapid Ring Port 2        : 4
Rapid Ring Port 1 State   : Discarding
Rapid Ring Port 2 State   : Forwarding

Ring-to-Ring Role        : Active
Ring-to-Ring Port        : 5
Ring-to-Ring Port State   : Discarding
SISPM1040-582-LRT#
```

Example 2: Configure and show *Rapid Chain* configuration:

```
SISPM1040-582-LRT(config)# rapid-ring entry 1 role rapid-chain port1 GigabitEthernet 1/5 port2
GigabitEthernet 1/6
SISPM1040-582-LRT(config)# do show rapid-ring
Entry Index              : 1
Rapid Ring Role          : Rapid-Chain
Rapid Ring Port 1        : 5
Rapid Ring Port 2        : 6
Rapid Ring Port 1 State   : Discarding
```

```
Rapid Ring Port 2 State   : Discarding

Entry Index             : 2
Rapid Ring Role         : Member
Rapid Ring Port 1       : 3
Rapid Ring Port 2       : 4
Rapid Ring Port 1 State   : Discarding
Rapid Ring Port 2 State   : Forwarding

Ring-to-Ring Role       : Active
Ring-to-Ring Port       : 5
Ring-to-Ring Port State   : Discarding
SISPM1040-582-LRT(config)#
```

Messages:

Message: *Rapid-Chain only one set. :* make sure the ports are not be same.

Message: *R_RING_ICLI_system_set error in port 8, STP is enable* : disable STP and any other ring technologies.

Message: *The ports should not be same. :* make sure the ports are not be same.

Command: **ring-to-ring**

Description: Configure Ring to Ring parameters. **Note**: STP must be disabled. **Note** that Ring-to-Ring can be configured via the front panel DIP switch (i.e., without using the Web UI or CLI). See the *Install Guide* for details.

Syntax : **ring-to-ring** role active port <port_type> <rport>
ring-to-ring role backup port <port_type> <rport>
ring-to-ring role disabled port <port_type> <rport>

Parameters:

role	Set role value
active	role value active
backup	role value backup
disabled	role value disabled
port	Set port
GigabitEthernet	1 Gigabit Ethernet Port
<port_type_id>	Port ID in 1/1-10

Example: Configure and show *Ring-to- Ring* configuration:

```
SISPM1040-582-LRT(config)# ring-to-ring role active port GigabitEthernet 1/8
SISPM1040-582-LRT(config)# ring-to-ring role backup port GigabitEthernet 1/8
SISPM1040-582-LRT(config)# end
SISPM1040-582-LRT# show rapid-ring
Entry Index             : 1
Rapid Ring Role         : Rapid-Chain
Rapid Ring Port 1       : 5
Rapid Ring Port 2       : 6
Rapid Ring Port 1 State   : Discarding
Rapid Ring Port 2 State   : Discarding

Entry Index             : 2
Rapid Ring Role         : Member
Rapid Ring Port 1       : 3
Rapid Ring Port 2       : 4
Rapid Ring Port 1 State   : Discarding
Rapid Ring Port 2 State   : Forwarding

Ring-to-Ring Role       : Backup
```

```
Ring-to-Ring Port        : 8
Ring-to-Ring Port State   : Discarding
SISPM1040-582-LRT#
```

Message: *R_TO_R_ICLI_system_set error in port 4, same with rapid ring port*
Meaning: You configured a port as both a ring-to-ring port and as a rapid-ring port.
Recovery: Change either the ring-to-ring port or the rapid-ring port.

Message: *R_TO_R_ICLI_system_set error in port 4, STP is enable*
Meaning: You annot have more than one ring technology enabled at one time.
Recovery: Disable STP.

Command: **rmon**

Description: Configure Remote Monitoring. **Note**: rising threshold must be larger than falling threshold.

Syntax :

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

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

Parameters:

alarm	Configure an RMON alarm
event	Configure an RMON event
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 broad-cast and multi-cast packets delivered to a higher-layer protocol
ifInOctets	The total number of octets received on the interface, including framing characters
ifInUcastPkts	The number of uni-cast 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 broad-cast and multi-cast packets that request to transmit
ifOutOctets	The number of octets transmitted out of the interface , including framing characters
ifOutUcastPkts	The number of uni-cast 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
<0-65535>	Event to fire on falling threshold crossing
both	Trigger alarm when the first value is larger than the rising threshold or less than the falling threshold (default)
falling	Trigger alarm when the first value is less than the falling threshold
rising	Trigger alarm when the first value is larger than the rising threshold
description	Specify a description of the event
log	Generate RMON log when the event fires
trap	Generate SNMP trap when the event fires
<word127>	SNMP community string

Example:

```
SISPM1040-582-LRT(config)# $ng-threshold 1 falling-threshold 0 both
SISPM1040-582-LRT(config)# rmon event 1 log trap 11111
SISPM1040-582-LRT(config)#
```

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

Command: **sflow**

Description: Configure Statistics flow.

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

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 its configuration is reset to defaults.

ipv4	Collector address IPv4.
ipv6	Collector address IPv6.
<domain_name>	Domain name identifying the collector receiver
<ipv4_addr>	IPv4 address identifying the collector receiver
<ipv6_ucast>	IPv6 address identifying the collector receiver
collector-port	Collector UDP port
<1-65535>	Port number
<200-1468>	bytes
<0-2147483647>	Number of seconds.

Example:

```
SISPM1040-582-LRT(config)# sflow agent-ip ipv4 192.168.1.2
SISPM1040-582-LRT(config)# sflow collector-port 3
SISPM1040-582-LRT(config)# sflow max-datagram-size 333
SISPM1040-582-LRT(config)# sflow timeout 3333
SISPM1040-582-LRT(config)#
```

Command: **smtp**

Description: Set email information.

Syntax :

smtp delete { server | username | sender | returnpath | mailaddress <index> }
smtp mailaddress <index> <mail_addr_name>
smtp returnpath <return_path>
smtp sender <sender_name>
smtp server <hostname>
smtp username <username> <password>

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

Example:

```
SISPM1040-582-LRT(config)# smtp mailaddress 1 jeffs@transition.com
SISPM1040-582-LRT(config)# smtp returnpath abcd4321
SISPM1040-582-LRT(config)# smtp username jeffs admin123
SISPM1040-582-LRT(config)# do show smtp
Mail Server     :
User Name       : jeffs
Password        : ********
Sender          :
Return Path     : abcd4321
Email Adress 1  : jeffs@transition.com
Email Adress 2  :
Email Adress 3  :
Email Adress 4  :
Email Adress 5  :
Email Adress 6  :
SISPM1040-582-LRT(config)# smtp delete username
SISPM1040-582-LRT(config)# do show smtp
Mail Server     :
User Name       :
Password        :
Sender          :
Return Path     : abcd4321
Email Adress 1  : jeffs@transition.com
Email Adress 2  :
Email Adress 3  :
Email Adress 4  :
Email Adress 5  :
Email Adress 6  :
SISPM1040-582-LRT(config)#
```

snmp-server

Configure SNMP Server commands

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
trap	Set trap's configurations
user	Set the SNMPv3 user's configurations
version	Set the SNMP server's version
view	MIB view configuration

Command: **access**

Description: Set SNMP server access parameters.

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

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:

```
SISPM1040-582-LRT(config)# snmp-server access Acc-1 model v3 level auth read readView1 write
writeView1
SISPM1040-582-LRT(config)#
```

Messages: The group name 'Acc-1' is not exist

Command: **community**

Description: Set the SNMP community.

Syntax : **snmp-server community** v2c <comm> [ro | rw]
snmp-server community v2c readcommunity { enable | disable }
snmp-server community v2c writecommunity { enable | disable }
snmp-server community v3 <v3_comm> [<v_ipv4_addr> <v_ipv4_netmask>]
snmp-server community writecommunity { enable | disable }

Parameters:

v2c	SNMPv2c
v3	SNMPv3
writecommunity	SNMP server WriteCommunity
disable	Disable SNMP server WriteCommunity
enable	Enable SNMP server WriteCommunity
<word255>	Community word
ro	Read only
rw	Read write

Example:

```
SISPM1040-582-LRT(config)# snmp-server community v3 SCOMv3 192.168.1.80 255.255.255.0
SISPM1040-582-LRT(config)# snmp-server community writecommunity enable
SISPM1040-582-LRT(config)# snmp-server community v2c Scomm1 ro
SISPM1040-582-LRT(config)# snmp-server community v2c Scomm1 rw
SISPM1040-582-LRT(config)# snmp-server community v2c text
```

Command: **contact**

Description: Set the SNMP server's contact string.

Syntax : **snmp-server** contact <v_line255>

Parameters: <line255> contact string

Example:

```
SISPM1040-582-LRT(config)# snmp-server contact text
SISPM1040-582-LRT(config)# snmp-server contact JSinEngineering Red Circle Drive Minnetonka MN
SISPM1040-582-LRT(config)#
```

Command: **engine-id**

Description: Set SNMP server local engine ID. The format of 'Engine ID' may not be all zeros or all 'ff'H and is restricted to 5 - 32 octet string.

Syntax : **snmp-server** engine-id local <engineID>

Parameters: engine-id Set SNMP engine ID

Example:

```
SISPM1040-582-LRT(config)# snmp-server engine-id local 1234567891
SISPM1040-582-LRT(config)#
```

Command: **host**

Description: Set SNMP host configuration name and enter 'config-snmps-host' mode.

Syntax : **snmp-server** host <conf_name>
do <command>
end
exit
help
host <v_ipv6_ucast> [<udp_port>] [traps | informs]
host { <v_ipv4_ucast> | <v_word> } [<tcp_udp_port>] [traps | informs]
informs retries <retries> timeout <timeout>
no host
no informs
no shutdown
no trapmode { disable | udp | tcp }
no version
shutdown
trapmode { disable | udp | tcp }
version { v1 [<v1_comm>] | v2 [<v2_comm>] | v3 [probe | engineID <v_word10_to_64>] [<securtyname>] }

Parameters:

<word32>	Name of the host configuration
debug	Debugging functions
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
host	host configuration
informs	Send Inform messages to this host
no	Negate a command or set its defaults
shutdown	Disable the trap configuration
trapmode	Configure trap mode
version	Set SNMP trap version
<domain_name>	hostname of SNMP trap host
<ipv4_ucast>	IP address of SNMP trap host
<ipv6_ucast>	IP address of SNMP trap host
<1-65535>	TCP/UDP port of the trap messges
traps	Send Trap messages to this host
disable	Disable Trap mode
tcp	Enable TCP Trap mode
udp	Enable UDP Trap mode
v1	SNMP trap version 1
v2	SNMP trap version 2
v3	SNMP trap version 3
<word255>	SNMP trap community

Example:

```
SISPM1040-582-LRT(config)# snmp-server host SnmpHost-1
SISPM1040-582-LRT(config-snmps-host)# ?
   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
    host        host configuration
    informs     Send Inform messages to this host
    no          Negate a command or set its defaults
    shutdown    Disable the trap configuration
    trapmode    Configure trap mode
    version     Set SNMP trap version
SISPM1040-582-LRT(config-snmps-host)# host 192.168.1.77 456 informs
SISPM1040-582-LRT(config-snmps-host)# host 192.168.1.77 456 traps
SISPM1040-582-LRT(config-snmps-host)# trapmode tcp
SISPM1040-582-LRT(config-snmps-host)# trapmode udp
SISPM1040-582-LRT(config-snmps-host)# version v2 SnmpTrapComm'ty-1
SISPM1040-582-LRT(config-snmps-host)#
```

Command: **location**

Description: Set the SNMP server's location string.

Syntax : **snmp-server** location <v_line255>

Parameters:

location	Set the SNMP server's location string
<line255>	location string

Example:

```
SISPM1040-582-LRT(config)# snmp-server location Engineering Red Circle Drive Minnetonka MN
SISPM1040-582-LRT(config)#
```

Command: **security-to-group**

Description: Set SNMP security-to-group configuration.

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

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:

```
SISPM1040-582-LRT(config)# snmp-server security-to-group model v2c name text group text
SISPM1040-582-LRT(config)# snmp-server security-to-group model v3 name BobB group Engin'g
SISPM1040-582-LRT(config)#
```

Command: **trap**

Description: Set SNMP trap's configurations.

Syntax : **snmp-server** trap

Parameters: <cr>

Example:

```
SISPM1040-582-LRT(config)# snmp-server trap
SISPM1040-582-LRT(config)#
```

Command: **user**

Description: Set the SNMPv3 user configuration.

Syntax :

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

Parameters:

<word32>	Username
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
<word8-40>	SHA unencrypted password
encrypted	Specifies an ENCRYPTED password will follow.
priv	Set Privacy
aes	Set AES protocol
des	Set DES protocol
<word8-32>	Privacy unencrypted password
encrypted	Specifies an ENCRYPTED password will follow.

Example:

```
SISPM1040-582-LRT(config)# snmp-server user text engine-id 1234567891 md5 12345678 priv aes 12345678
SISPM1040-582-LRT(config)# snmp-server user BobB engine-id 1234567891 sha 1a2s3d4f5g priv aes
TomT123JJJ&&%#$
SISPM1040-582-LRT(config)# snmp-server user admin1 engine-id 1234567891 md5 BobBnnnnnnnnnnnnn  priv
aes aaaaaaaaaaaaaa
SISPM1040-582-LRT(config)#
```

Command: **version**

Description: Set the SNMP server version.

Syntax : **snmp-server** version { v1 | v2c | v3 }

Parameters:

v1	SNMPv1
v2c	SNMPv2c
v3	SNMPv3

Example:

```
SISPM1040-582-LRT(config)# snmp-server version v2c
SISPM1040-582-LRT(config)# snmp-server version v3
SISPM1040-582-LRT(config)#
```

Command: **view**

Description: SNMP server MIB view configuration.

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

Parameters:

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

Example:

```
SISPM1040-582-LRT(config)# snmp-server view MV1 .0.1 include
SISPM1040-582-LRT(config)# snmp-server view MV1 .0.1 exclude
SISPM1040-582-LRT(config)# snmp-server view MV1 .0.1.1 exclude
SISPM1040-582-LRT(config)# snmp-server view MV1 .0.1.1 include
SISPM1040-582-LRT(config)#
```

Messages:

first character must be '.'

invalid character '-'

SNMP parameter error

spanning-tree

Spanning Tree protocol. 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

Command: **aggregation**

Description: Configure Spanning tree aggregation

Syntax : **spanning-tree** aggregation

Parameters:

do	To run exec commands in config mode
end	Go back to EXEC mode
exit	Exit from current mode
help	Description of the interactive help system
no	Negate a command or set its defaults
spanning-tree	Spanning Tree protocol
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
<0-7>	instance 0-7 (CIST=0, MST2=1...)
cost	STP Cost of this port
port-priority	STP priority of this port
<1-200000000>	Cost range
auto	Use auto cost
<0-240>	Range (lower higher priority)
<cr>	

Example 1: Config mode:

```
SISPM1040-582-LRT(config)# spanning-tree aggregation
SISPM1040-582-LRT(config-stp-aggr)# ?
    do              To run exec commands in config mode
    end             Go back to EXEC mode
    exit            Exit from current mode
    help            Description of the interactive help system
    no              Negate a command or set its defaults
    spanning-tree    Spanning Tree protocol
```

Example 2: Spanning Tree Aggregation Config mode:

```
SISPM1040-582-LRT(config)# spanning-tree aggregation
SISPM1040-582-LRT(config-stp-aggr)# spanning-tree ?
    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
    <cr>
    auto              Auto detect
    point-to-point     Forced to point-to-point
    shared            Forced to Shared
SISPM1040-582-LRT(config-stp-aggr)# spanning-tree auto-edge
SISPM1040-582-LRT(config-stp-aggr)# spanning-tree bpdu-guard
SISPM1040-582-LRT(config-stp-aggr)# spanning-tree edge
SISPM1040-582-LRT(config-stp-aggr)# spanning-tree link-type auto
SISPM1040-582-LRT(config-stp-aggr)# spanning-tree link-type point-to-point
SISPM1040-582-LRT(config-stp-aggr)# spanning-tree link-type shared
SISPM1040-582-LRT(config-stp-aggr)# spanning-tree mst ?
    <0-7>    instance  0-7 (CIST=0, MST2=1...)
SISPM1040-582-LRT(config-stp-aggr)# spanning-tree mst 0 ?
    cost             STP Cost of this port
    port-priority     STP priority of this port
    <1-200000000>     Cost range
    auto             Use auto cost
    <0-240>    Range (lower higher priority)
SISPM1040-582-LRT(config-stp-aggr)# spanning-tree restricted-role
SISPM1040-582-LRT(config-stp-aggr)# spanning-tree restricted-tcn
SISPM1040-582-LRT(config-stp-aggr)#
```

Messages: Could not set MSTP port conf

Command: **edge**

Description: Configure spanning-tree edge ports.

Syntax : **spanning-tree** edge bpdu-filter
spanning-tree edge bpdu-guard

Parameters: bpdu-filter Enable BPDU filter (stop BPDU tx/rx)
bpdu-guard Enable BPDU guard

Example:

```
SISPM1040-582-LRT(config)# spanning-tree edge bpdu-filter
SISPM1040-582-LRT(config)# spanning-tree edge bpdu-guard
SISPM1040-582-LRT(config)#
SISPM1040-582-LRT(config-stp-aggr)# spanning-tree edge
SISPM1040-582-LRT(config-stp-aggr)#
```

Command: **mode**

Description: Configure Spanning tree 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:

```
SISPM1040-582-LRT(config)# spanning-tree mode stp
SISPM1040-582-LRT(config)# spanning-tree mode rstp
SISPM1040-582-LRT(config)#
```

Command: **mst**

Description: Configure Spanning tree MST.

Syntax : **spanning-tree** mst <instance> priority <prio>
spanning-tree mst <instance> vlan <v_vlan_list>
spanning-tree mst forward-time <fwdtime>
spanning-tree mst hello-time <hellotime>
spanning-tree mst max-age <maxage> [forward-time <fwdtime>]
spanning-tree mst max-hops <maxhops>
spanning-tree mst name <name> revision <v_0_to_65535>

Parameters:

<0-7>	instance 0-7 (CIST=0, MST2=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

Example:

```
SISPM1040-582-LRT(config)# spanning-tree mst 7 vlan 10
SISPM1040-582-LRT(config)#
```

Command: **recovery**

Description: Configure Spanning tree recovery interval

Syntax : **spanning-tree** recovery interval <interval>

Parameters: interval The interval <30-86400> Range in seconds

Example:

```
SISPM1040-582-LRT(config)# spanning-tree recovery interval 6000
SISPM1040-582-LRT(config)
```

Command: **transmit**

Description: Configure Spanning tree transmit hold-count

Syntax : **hold-count** Max number of transmit BPDUs per second.

Parameters: <1-10> 1-10 per second, 6 is default

Example:

```
SISPM1040-582-LRT(config)# spanning-tree transmit hold-count 5
SISPM1040-582-LRT(config)#
```

Message: Could not set MSTP port conf

Command: **switchport**

Description: Set switching mode characteristics.

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

Parameters:

vlan	VLAN
mapping	Add VLAN translation entry into a group.
<1-10>	Group id
<vlan_list>	Original vlan-list
<vlan_id>	
<cr>	

Example:

```
SISPM1040-582-LRT(config)# switchport vlan mapping 1 100-300 10
SISPM1040-582-LRT(config)# switchport?
switchport vlan mapping <gid> <vlan_list> <tvid>
SISPM1040-582-LRT(config)# switchport vlan mapping 1 10 100
```

Messages: *%% Failed to add VLAN Translation mapping.*

Command: **system**

Description: Set system configuration.

Syntax : **system** contact <v_line128>
system description <sys_desc>
system di reboot { enable | disable }
system di { high | low }
system di { normal | abnormal } <desc>
system do autorecovery { enable | disable }
system do relay { open | close }
system do { open | close }
system location <v_line128>
system name <v_line128>
system reboot mode { enable | disable }
system reboot { [Sun <hour_v00_0_to_23> <min_v00_0_to_55>] [Mon <hour_v10_0_to_23> <min_v10_0_to_55>] [Tue <hour_v20_0_to_23> <min_v20_0_to_55>] [Wed <hour_v30_0_to_23> <min_v30_0_to_55>] [Thr <hour_v40_0_to_23> <min_v40_0_to_55>] [Fri <hour_v50_0_to_23> <min_v50_0_to_55>] [Sat <hour_v60_0_to_23> <min_v60_0_to_55>] }

Parameters:

contact	Set the SNMP server's contact string (default is blank)
description	Configure System Description
di	Set the Switch DI input configurations
do	Set the Switch DO output configurations
location	Set the SNMP server's location string (default is blank)
name	Set the SNMP server's system model name string
reboot	Set the Switch Reboot configurations
<line128>	contact string
<line128>	System Description string
<line128>	location string
<line128>	name string
abnormal	Set di abnormal description
high	Set High is Normal mode
low	Set low is Normal mode
normal	Set di normal description
reboot	Set the Switch DI reboot configurations
autorecovery	Auto recovery
close	Set close is Normal mode
open	Set open is Normal mode
relay	Set the Switch DO relay configurations
disable	Set Auto recovery disable
enable	Set Auto recovery enable
close	Set off for DO to close state
open	Set on for DO to open state
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
<line64>	DI abnormal description
disable	Set DI reboot system to Disable
enable	Set DI reboot system to “When DI was changed to abnormal”. Set the reboot system of the digital input(DI). The default setting is Disabled (no reboot system action taken). You can set it to “When DI was changed to abnormal” to reboot the switch when DI input goes High. Added at FW v 7.20.0075.

Example:

```
SISPM1040-582-LRT(config)# system di high
SISPM1040-582-LRT(config)# system do relay close
SISPM1040-582-LRT(config)# system do relay open
SISPM1040-582-LRT(config)# system reboot mode enable
SISPM1040-582-LRT(config)# system do autorecovery enable
SISPM1040-582-LRT(config)# system reboot Sun 1 10
SISPM1040-582-LRT(config)# system contact jeffs@transition.com
SISPM1040-582-LRT(config)# system description Desktopw-25104
SISPM1040-582-LRT(config)# system location Eng-2nd Floor BlueCircleDrive
SISPM1040-582-LRT(config)# system name SvtTest/Docs
SvtTest/Docs(config)# do show system
Model Name                 : SISPM1040-582-LRT
System Description          : Desktopw-25104
Location                   : Eng-2nd Floor BlueCircleDrive
Contact                    : jeffs@transition.com
System Name                : SvtTest/Docs
System Date                : 2022-02-22T09:14:54+00:00
System Uptime              : 03:36:18
Bootloader Version          : v1.20
Firmware Version           : VB7.20.0074 2021-07-02
PoE Firmware Version        : 208-352
Hardware Version           : v1.02
Mechanical Version          : v1.01
Serial Number              : A151119BR3600529
MAC Address                : 00-c0-f2-4f-7f-cd
Memory                     : Total=46042 KBytes, Free=26886 KBytes, Max=26189 KBytes
FLASH                      : 0x40000000-0x41ffffff, 512 x 0x10000 blocks
Powers status               : Normal
Powers                     : PWR_1.0V:1.01V; PWR_3.3V:3.29V; PWR_2.5V:2.60V; PWR_1.8V:1.93V
Temperature status          : Normal
Temperature 1              : 47(C) ; 116(F)
Temperature 2              : 47(C) ; 116(F)
SvtTest/Docs(config)#
SISPM1040-582-LRT(config)# system di abnormal Abcde1234
SISPM1040-582-LRT(config)# system di reboot disable
SISPM1040-582-LRT(config)# system di reboot enable
SISPM1040-582-LRT(config)#
```

Command: **tacacs-server**

Description: Configure TACACS+ server.

Syntax :

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

Parameters:

deadtime	Time to stop using a TACACS+ server that doesn't respond
host	Specify a TACACS+ server
key	Set TACACS+ encryption key
port	TCP port for TACACS+ server
<0-65535>	TCP port number
timeout	Time to wait for this TACACS+ server to reply
<1-1440>	Time in minutes (deadtime)
<word1-255>	Hostname or IP address
<word1-63>	The UNENCRYPTED (Plain Text) secret key. Note 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
<word4-224>	The ENCRYPTED (hidden) secret key. Notice the ENCRYPTED secret key will be decoded by system internally. You cannot directly use it as same as the Plain Text and it is not human-readable text normally.
<1-1000>	Wait time in seconds

Example:

```
SISPM1040-582-LRT(config)# tacacs-server deadtime 555
SISPM1040-582-LRT(config)# tacacs-server host 192.168.80.90
SISPM1040-582-LRT(config)# tacacs-server key unencrypted admin
SISPM1040-582-LRT(config)# tacacs-server timeout 400
SISPM1040-582-LRT(config)# do show tacacs
Global TACACS+ Server Timeout      : 400 seconds
Global TACACS+ Server Deadtime     : 555 minutes
Global TACACS+ Server Key          : d645f3b91ae45abe3329aff8cef8d46562669f8522c
e13d1f8046ecd7e40d46d84a7303713c9e3dc70f59c0e32586f586d6cd8760546f68928a5b27536b
bbb9b
No servers configured!
SISPM1040-582-LRT(config)#
```

Command: **tzidx**

Description: Configure timezone city/area.

Syntax : **tzidx** <idx_var>

Parameters: tzidx Configure timezone city/area

<int> Index of city/area

Example:

```
SISPM1040-582-LRT(config)# tzidx 5
SISPM1040-582-LRT(config)# tzidx 50
SISPM1040-582-LRT(config)# tzidx 500
SISPM1040-582-LRT(config)# tzidx 500
SISPM1040-582-LRT(config)# do show clock detail
System Time     : 2011-01-01T04:02:07-08:00

Timezone : Timezone Offset : -4800 ( -480 minutes)
Timezone Acronym : Pacific - Canada

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
-- more --, next page: Space, continue: g, quit: ^C
```

Command: **udld**

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

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

Parameters:

aggressive	Enables UDLD in aggressive mode on all fiber-optic ports.
enable	Enables UDLD in normal mode on all fiber-optic ports.
message	UDLD probe messages
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; the current default message time interval is 7 seconds.

Example:

```
SISPM1040-582-LRT(config)# udld message time-interval 7
SISPM1040-582-LRT(config)# udld enable
SISPM1040-582-LRT(config)# udld aggressive
```

Command: **upnp**

Description: Set UPnP configuration.

Syntax : **upnp**
upnp advertising-duration <v_66_to_86400>
upnp ttl <v_1_to_255>

Parameters:

upnp	Set UPnP configuration
advertising-duration	Set advertising duration
ttl	Set Time To Live value
<66-86400>	advertising duration
<1-255>	TTL value
<cr>	

Example:

```
SISPM1040-582-LRT(config)# upnp
SISPM1040-582-LRT(config)# upnp ttl 100
SISPM1040-582-LRT(config)# upnp advertising-duration 9000
SISPM1040-582-LRT(config)# do show upnp
UPnP Mode               : enabled
UPnP TTL                : 100
UPnP Advertising Duration : 9000
SISPM1040-582-LRT(config)#
```

Command: **username**

Description: Establish User Name Authentication.

Syntax : **username** <username> privilege <priv> password encrypted <encry_password>
username <username> privilege <priv> password none
username <username> privilege <priv> password unencrypted <password>

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.
<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.
<word4-44>	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. **Note** that you have no chance to get the Plain Text password after this command. The system will always display the ENCRYPTED password.

Example:

```
SISPM1040-582-LRT(config)# do show user-priv
username admin privilege 15 password encrypted
995ef36292ed12e247d98dbad724e0ed5a37d3e849f6a223aaefac071fb6a7e1680ee94a8d61a99819b3f02659dc2b12759910
63e2720099c6d43df6efb2cb32
SISPM1040-582-LRT(config)# username jeffs privilege 14 password unencrypted admin123!@#
SISPM1040-582-LRT(config)# do show user-priv
username admin privilege 15 password encrypted
995ef36292ed12e247d98dbad724e0ed5a37d3e849f6a223aaefac071fb6a7e1680ee94a8d61a99819b3f02659dc2b12759910
63e2720099c6d43df6efb2cb32
username jeffs privilege 14 password encrypted
34d3d7e830a55bd971f73a6ca58418336dde12192c5bac0a614d4d53a79ea73d5b937fd2a62ed70047494cdaea7c9f5ee2faee
f7e7678b02aac5bb11131aaba4
SISPM1040-582-LRT(config)#
```

Command: **vlan**

Description: VLAN config commands in Config mode and in Config-vlan mode.

Syntax :
vlan <vlist>
vlan ethertype s-custom-port <etype>
vlan protocol { { eth2 { <etype> | arp | ip | ipx | at } } | { snap { <oui> | rfc-1042 | snap-8021h } <pid> } | { llc <dsap> <ssap> } } group <grp_id>

Parameters:		
	<vlan_list>	ISL VLAN IDs 1~4095
	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	SNAP-based VLAN group
	<0x600-0xffff>	Ether Type (Range: 0x600 - 0xFFFF)
	arp	Ether Type is ARP
	at	Ether Type is AppleTalk
	ip	Ether Type is IP
	ipx	Ether Type is IPX
	group	Protocol-based VLAN group commands
	<word16>	Group Name (Range: 1 - 16 characters)
	<0x0-0xff>	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)
	<word31>	The ASCII name for the VLAN

Example 1 : In Config mode:

```
SISPM1040-582-LRT(config)# vlan protocol eth2 arp group 123
SISPM1040-582-LRT(config)# vlan ethertype s-custom-port 0x1111
SISPM1040-582-LRT(config)# vlan 100
SISPM1040-582-LRT(config)# vlan 1,2,10-20,100-300
SISPM1040-582-LRT(config)#
```

Example 2 : In VLAN Config mode:

```
SISPM1040-582-LRT(config)# vlan 1,2,10-20,100-300
SISPM1040-582-LRT(config-vlan)# ?
   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
   name    ASCII name of the VLAN
   no
SISPM1040-582-LRT(config)# vlan 10
SISPM1040-582-LRT(config-vlan)# name VID-10
SISPM1040-582-LRT(config-vlan)#
```

Messages: *% Cannot modify name for multiple VLANs*

Command: **voice vlan**

Description: Set VLAN for voice traffic / Voice appliance attributes.

Syntax : **voice** vlan
voice vlan aging-time <aging_time>
voice vlan class { <traffic_class> | low | normal | medium | high }
voice vlan oui <oui> [description <description>]
voice vlan vid <vid>

Parameters:

vlan	VLAN for voice traffic
aging-time	Set secure learning aging time
class	Set traffic class
oui	OUI configuration
vid	Set VLAN ID
<10-10000000>	Aging time, 10-10000000 seconds
<0-7>	Traffic class value
<oui>	OUI value
<vlan_id>	VLAN ID, 1-4095
<cr>	

Example:

```
SISPM1040-582-LRT(config)# voice vlan aging-time 3333
SISPM1040-582-LRT(config)# voice vlan class 7
SISPM1040-582-LRT(config)# voice vlan vid 3333
SISPM1040-582-LRT(config)# voice vlan oui A4-BA-DB description myphone
SISPM1040-582-LRT(config)# exit
SISPM1040-582-LRT# show voice vlan oui A4-BA-DB
Telephony OUI  Description
-------------  -----------
A4-BA-DB       myphone
SISPM1040-582-LRT#
SISPM1040-582-LRT(config)# voice vlan oui 00-01-E3 description siemens1 in the lab
SISPM1040-582-LRT(config)# exit
SISPM1040-582-LRT# show voice vlan oui 00-01-E3
Telephony OUI  Description
-------------  -----------
00-01-E3       siemens1 in the lab
SISPM1040-582-LRT#
```

Command: **web**

Description: Configure Web privilege levels.

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

Parameters:

web privilege group names:

Aggregation	DHCP	DHCPv6_Client	DMS_client	DMS_server
Debug	Diagnostics	EEE	EPS	ERPS
ETH_LINK_OAM	EVC	Green_Ethernet	IP	IPMC_Snooping
Install_Wizard	LACP	LLDP	Loop_Protect	MAC_Table
MEP	MRP	MVR	Maintenance	NTP
POE	PTP	Ports	Private_VLANs	QoS
RMirror	R_RING	SMTP	Security	Spanning_Tree
System	TS_client	TS_server	Trap_Event	Trouble_Shooting
UDLD	UPnP	VCL	VLAN_Translation	VLANs
VTUN	Voice_VLAN	XXRP	percepxion	sFlow

level	Web privilege group level
cro	Configuration Read-only level
crw	Configuration Read-write level
sro	Status/Statistics Read-only level
srw	Status/Statistics Read-write level
<0-15>	

Example:

```
SISPM1040-582-LRT(config)# web privilege group ptp level sro 15 crw ?
    <0-15>
SISPM1040-582-LRT(config)# web privilege group ptp level sro 15 crw 15
% The privilege level of 'Status/Statistics Read-only' should be less than or equal to
'Status/Statistics Read-write'
SISPM1040-582-LRT(config)# web privilege group XXRP level crw 15
SISPM1040-582-LRT(config)#
```

5 Copy Commands

These copy commands are valid before FW v7.20.0034. See Appendix B SFTP copy Commands on page 255 for copy commands at FW v7.20.0034 and after.

Command: **copy**

Description: Copy 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:

<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 255 and hyphen must not be first character. The file name content that only contains '.' is not allowed.
running-config	Currently running configuration
startup-config	Startup configuration.
|	Output modifiers.
merge	merge source file with running-config.
replace	replace running-config with source file (default action).
syntax-check	Perform syntax check on source configuration.
save-host-key	Save Host key. Always save SSH host keys in local cache. A host key is a cryptographic key used for authenticating computers in the SSH protocol. Host keys are key pairs, typically using RSA, DSA, or ECDSA algorithms. Public host keys are stored on and/or distributed to SSH clients, and private keys are stored on SSH servers.
ftp-active	FTP active
<cr>	

Example:

```
SISPM1040-582-LRT# copy running-config startup-config replace syntax-check
Building configuration...
% Saving 2804 bytes to flash:startup-config
SISPM1040-582-LRT# copy startup-config running-config merge syntax-check
SISPM1040-582-LRT#
```

Message: % startup-config: Load failed: Cannot read file status.

6 Delete Commands

Command: **delete**

Description: Delete one file in flash: file system.

Syntax : **delete** <path>

Parameters: <url_file> File in FLASH. Syntax: <flash:filename>. A valid file name is a text string drawn from alphabet (A-Za-z), digits (0-9), dot (.), hyphen (-), under score (_). The maximum length is 57 characters and hyphen must not be first character. A file name that only contains '.' is not allowed.

Example:

```
SISPM1040-582-LRT# delete text
SISPM1040-582-LRT#
```

Message: *% Invalid word detected at '^' marker.*

Message: *% Delete of configuration.txt failed: No such entity.*

Message: *% Delete of default-config failed: Read-only.*

7 Dir Commands

Command: **dir**

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

Syntax : **dir** <cr>

Parameters:

| Output modifiers

<cr>

Example:

```
SISPM1040-582-LRT# dir
Directory of flash:
   r- 2010-12-31 23:59:59     716 default-config
   rw 2011-01-01 17:48:58    2804 startup-config
2 files, 3520 bytes total.
SISPM1040-582-LRT#
```

8 Disable Commands

Command: **disable**

Description: Turn off privileged commands.

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

Parameters:

<0-15>
<cr>

Example:

```
SISPM1040-582-LRT# disable 1
SISPM1040-582-LRT>
```

9 Do Commands

Command: **do**

Description: To run Exec mode commands in Config mode or Interface Config mode.

Syntax : **do** <command>

Parameters: <line> Exec Command

Example 1 : In Config mode:

```
SISPM1040-582-LRT(config)# do show clock
System Time     : 2011-01-01T00:01:33+00:00

SISPM1040-582-LRT(config)# do show vlan
VLAN  Name                            Interfaces
----  ------------------------------  ----------
1     default                         Gi 1/1-10

SISPM1040-582-LRT(config)#
```

Example 2 : In Interface Config mode:

```
SISPM1040-582-LRT(config-if-vlan)# do dir
Directory of flash:
    r- 2010-12-31 23:59:59      716 default-config
    rw 2011-01-01 00:02:53     1189 startup-config
2 files, 1905 bytes total.
SISPM1040-582-LRT(config-if-vlan)#
SISPM1040-582-LRT(config-if)# do show logging 3
Switch : 1
ID     : 3
Level  : Warning
Time   : 2011-01-01T00:00:11+00:00
Message:
Link up on port 10
SISPM1040-582-LRT(config-if)#
```

Messages:

% No such interface type: brief

% Fail to execute command in EXEC mode.

10 Dot1x Commands

Command: **dot1x**

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

Syntax : **dot1x** authentication timer inactivity <v_10_to_100000>
dot1x authentication timer re-authenticate <v_1_to_3600>
dot1x feature { [guest-vlan] [radius-qos] [radius-vlan] }*1
dot1x guest-vlan <value>
dot1x guest-vlan supplicant
dot1x max-reauth-req <value>
dot1x re-authentication
dot1x system-auth-control
dot1x timeout quiet-period <v_10_to_1000000>
dot1x timeout tx-period <v_1_to_65535>

Parameters:

authentication	Authentication
feature	Globally enables/disables a dot1x feature functionality.
guest-vlan	Guest VLAN.
max-reauth-req	The number of times a Request Identity EAPoL frame is sent without response before considering entering the Guest VLAN.
re-authentication	Set Re-authentication state.
system-auth-control	Set the global NAS state.
timeout	timeout
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>	inactivity seconds
<1-3600>	re-authenticate 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 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.
<1-255>	Number of times - dot1x max-reauth-req
quiet-period	Time in seconds before a MAC-address that failed authentication gets a new authentication chance.
tx-period	The time between EAPoL retransmissions.
<10-1000000>	seconds of dot1x timeout quiet-period
<1-65535>	seconds of dot1x timeout tx-period

Example:

```
SISPM1040-582-LRT(config)# dot1x guest-vlan 100
SISPM1040-582-LRT(config)# dot1x authentication timer inactivity 5000
SISPM1040-582-LRT(config)# dot1x re-authentication
SISPM1040-582-LRT(config)# dot1x timeout tx-period 9000
SISPM1040-582-LRT(config)# dot1x feature guest-vlan radius-qos radius-vlan
SISPM1040-582-LRT(config)# dot1x authentication timer inactivity 1000
SISPM1040-582-LRT(config)# dot1x feature guest-vlan radius-qos radius-vlan
SISPM1040-582-LRT(config)# dot1x guest-vlan 33
SISPM1040-582-LRT(config)# dot1x max-reauth-req 3
SISPM1040-582-LRT(config)# dot1x system-auth-control
SISPM1040-582-LRT(config)# dot1x timeout quiet-period 3000
SISPM1040-582-LRT(config)# dot1x timeout tx-period 9000
SISPM1040-582-LRT(config)#
```

11 Enable Commands

Command: **enable**

Description: Turn on privileged commands; set password parameters.

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

Parameters:

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

Example:

```
SISPM1040-582-LRT(config)# enable password ?
   <word32>    The UNENCRYPTED (clear-text) password
   level       Set exec level password
SISPM1040-582-LRT(config)# enable password JSPword32
SISPM1040-582-LRT(config)# enable secret ?
   0    Specifies an UNENCRYPTED password will follow
   5    Specifies an ENCRYPTED secret will follow
SISPM1040-582-LRT(config)# enable secret 0 JSPword32
SISPM1040-582-LRT(config)# enable secret 5 administrator&^%765
SISPM1040-582-LRT(config)# enable password level 15 999
SISPM1040-582-LRT(config)# enable secret 0 level 15 admin
SISPM1040-582-LRT(config)#
```

12 ERPS Commands

12.1 ERPS Exec Mode Commands

Command: **erps**

Description: Configure Ethernet Ring Protection Switching.

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

Parameters:

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

Example:

```
SISPM1040-582-LRT# erps 1 command clear port0
SISPM1040-582-LRT# erps 1 command force port0
SISPM1040-582-LRT# erps 1 command manual port0
% ERPS group 1: Generic error occurred
SISPM1040-582-LRT# erps 1 command manual port0 ?
   <cr>
SISPM1040-582-LRT#
```

12.2 ERPS Config Mode Commands

Command: **erps**

Description: Configure Ethernet Ring Protection Switching.

Syntax :

erps <group> guard <guard_time_ms>
erps <group> holdoff <holdoff_time_ms>
erps <group> major port0 interface <port_type> <port0> port1 interface <port_type> <port1> [interconnect]
erps <group> mep port0 sf <p0_sf> aps <p0_aps> port1 sf <p1_sf> aps <p1_aps>
erps <group> revertive <wtr_time_minutes>
erps <group> rpl { owner | neighbor } { port0 | port1 }
erps <group> sub port0 interface <port_type> <port0> { { port1 interface <port_type> <port1> } | { interconnect <major_ring_id> } } [virtual-channel]
erps <group> topology-change propagate
erps <group> version { 1 | 2 }
erps <group> vlan { none | [add | remove] <vlans> }

Parameters:

1-64	ERPS group number
guard	Guard
holdoff	Hold-off time
major	Major ring
mep	MEP
revertive	Revertive
rpl	Ring Protection Link
sub	Sub-ring
topology-change	Topology Change
version	Version
vlan	VLAN
10-2000	Guard time in 10 ms steps between 10 and 2000 ms
0-10000	Hold-off time in ms
port0	ERPS Port 0 interface
1-12	Wait-to-restore time in minutes
neighbor	Neighbor role
owner	Owner role
port0	ERPS Port 0 interface
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
interface	Ethernet interface
GigabitEthernet	1 Gigabit Ethernet Port
<port_type_id>	Port ID in 1/1-10
interconnect	Major ring is interconnected
sf	Signal Fail
1-100	Index of Port 0 SignalFail MEP

aps	Automatic Protection Switching
1-100	Index of Port 0 APS MEP
1-100	Index of Port 1 APS MEP
virtual-channel	Enable virtual channel for sub-ring

Example:

```
SISPM1040-582-LRT(config)# erps 7 major port0 interface GigabitEthernet 1/7 interconnect
SISPM1040-582-LRT(config)#
SISPM1040-582-LRT(config)# erps 1 mep port0 sf 1 aps 1 port1 sf 20 aps 25
SISPM1040-582-LRT(config)# erps 1 revertive 3
SISPM1040-582-LRT(config)# erps 1 rpl neighbor port0
SISPM1040-582-LRT(config)# erps 3 sub port0 interface GigabitEthernet 1/6 interconnect 1 virtual-
channel
SISPM1040-582-LRT(config)# erps 1 topology-change propagate
SISPM1040-582-LRT(config)# erps 1 version 1
SISPM1040-582-LRT(config)# erps 1 version 2
SISPM1040-582-LRT(config)# erps 1 vlan remove 10-100
SISPM1040-582-LRT(config)# erps 1 vlan none
SISPM1040-582-LRT(config)#
```

Messages:

% ERPS group 1: Port 0 and port 1 are the same

% ERPS group 1: Node is configured as neighbour for given group, can not set as RPL

% ERPS group 1: Given protection group already created

% ERPS group 1: Maximum number of VLANs already configured for protection group

13 Firmware Commands

Command: **firmware**

Description: Firmware upgrade/swap. **Caution**: once you have updated to FW vB7.20.0016 you will not be able to go backwards to an earlier FW version.

Syntax : **firmware** swap
firmware upgrade <url_file> [save-host-key]

Parameters:

swap Swap between Active and Alternate firmware image.

upgrade Firmware upgrade.

<**url_file**> Uniform Resource Locator; 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 characters and hyphen must not be first character. The file name content that only contains '.' is not allowed.

save-host-key Always save SSH host keys in local cache. A host key is a cryptographic key used for authenticating computers in the SSH protocol. Host keys are key pairs, typically using RSA, DSA, or ECDSA algorithms. Public host keys are stored on and/or distributed to SSH clients, and private keys are stored on SSH servers.

Example:

```
SISPM1040-582-LRT# firmware swap ?
   <cr>
SISPM1040-582-LRT# firmware upgrade tftp://192.168.1.1/path ?
   <cr>
SISPM1040-582-LRT# firmware upgrade tftp://192.168.1.1/path

SISPM1040-582-LRT# firmware swap
Alternate image activated, now rebooting.
SISPM1040-582-LRT#
```

Messages:
Error fetching firmware: Connection refused
Download of /path from 192.168.1.1 failed: Operation timed out.

14 IPv4 Commands

Command: **ip**

Description: IPv4 configuration command; restart DHCP client on selected VLAN.

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:

```
SISPM1040-582-LRT# ip dhcp retry interface vlan 100
% Failed to restart DHCP client on VLAN = 100.
SISPM1040-582-LRT#
```

15 IPv6 Commands

IPv6 configuration commands.

Command: **ipv6**

Description: IPv6 configuration command; restart DHCP client on selected VLAN.

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

Parameters:

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

Example:

```
SISPM1040-582-LRT# ipv6?
ipv6 dhcp-client restart [ interface vlan <v_vlan_list> ]
SISPM1040-582-LRT# ipv6 dhcp-client restart interface vlan 100
SISPM1040-582-LRT# ipv6 dhcp-client restart
SISPM1040-582-LRT#
```

Messages: *% Invalid DHCPv6 client interface Vlan100*

16 Link OAM Commands

Command: **link-oam**

Description: Link OAM configuration command; start/stop remote loopback test on an interface.

Syntax : **link-oam** remote-loopback { start | stop } interface (<port_type> [<v_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.
<port_type_list>	Port list in 1/1-10
<cr>	

Example:

```
SISPM1040-582-LRT# $oam remote-loopback start interface GigabitEthernet 1/5
% Requested configuration is not supported with the current OAM mode for Gigabit
Ethernet 1/5
SISPM1040-582-LRT#
```

17 No Commands

No commands are available to negate a command or set its defaults in Exec mode, Config mode, and Interface Config mode.

Exec Mode no Commands

debug	Debugging functions
port-security	Port security (MAC limit)
ptp	Misc non persistent 1588 settings.
terminal	Set terminal line parameters

Exec Mode no Command Parameters

no debug interrupt-monitor source <source>
no debug ipv6 nd
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

Command: **no**

Description: Negate a command or set its defaults.

Syntax : **no** debug interrupt-monitor source <source>
no debug ipv6 nd
no debug trace hunt
no port-security shutdown [interface (<port_type> [<v_port_type_list>])]
no ptp <clockinst> wireless mode interface (<port_type> [<v_port_type_list>])
no terminal editing
no terminal exec-timeout
no terminal history size
no terminal length
no terminal width

Parameters:

debug	Debugging functions
port-security	Port security (MAC limit)
ptp	Misc non persistent 1588 settings.
terminal	Set terminal line parameters

Example:

```
SISPM1040-582-LRT# no terminal exec-timeout
SISPM1040-582-LRT#
```

no Commands (Config Mode)

aaa	Authentication, Authorization and Accounting
access	Access management
access-list	Access list
aggregation	Aggregation mode
always-on-poe	Disable Always On PoE
banner	Define a login banner
clock	Configure time-of-day clock
command-history-log	Disable to Save Command Histry to Flash
debug	Debugging functions
dot1x	IEEE Standard for port-based Network Access Control
enable	Modify enable password parameters
eps	Ethernet Protection Switching.
erps	Ethernet Ring Protection Switching
evc	Ethernet Virtual Connections
exec-timeout	Auto-logout
green-ethernet	Green ethernet (Power reduction)
gvrp	Enable GVRP feature
hostname	Set system's network name
interface	Select an interface to configure
ip	Internet Protocol
ipmc	IPv4/IPv6 multicast configuration
ipv6	IPv6 configuration commands
lacp	LACP settings
lldp	LLDP configurations.
logging	System logging message
loop-protect	Loop protection configuration
mac	MAC table entries/configuration
map-api-key	Google Maps API Key
mep	Maintenance Entity Point
monitor	Monitoring different system events
mvr	Multicast VLAN Registration configuration
ntp	Configure NTP
poe	Power Over Ethernet.
port-security	Enable/disable port security globally.
privilege	Command privilege parameters
ptp	Precision time Protocol (1588)
qos	Quality of Service
radius-server	Configure RADIUS
rmon	Remote Monitoring
sflow	Statistics flow.
snmp-server	Enable SNMP server
spanning-tree	STP Bridge
switchport	VLAN
system	Set the system description
tacacs-server	Configure TACACS+
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

Example:

```
SISPM1040-582-LRT(config)# no voice vlan ?
    aging-time    Set secure learning aging time
    class         Set traffic class
    oui           OUI configuration
    vid           Set VLAN ID
    <cr>
SISPM1040-582-LRT(config)# no voice vlan aging-time ?
    <cr>
SISPM1040-582-LRT(config)# no voice vlan aging-time
SISPM1040-582-LRT(config)# no upnp ?
    advertising-duration    Set advertising duration
    ttl                    Set TTL value
    <cr>
SISPM1040-582-LRT(config)# no upnp
SISPM1040-582-LRT(config)# no always-on-poe
Always On PoE Status : Disable
SISPM1040-582-LRT(config)# no exec-timeout autologout
SISPM1040-582-LRT(config)# no map-api-key
SISPM1040-582-LRT(config)# no debug ?
    mep    Maintenance Entity Point.
SISPM1040-582-LRT(config)# no debug mep ?
    <uint>    The MEP instance number.
SISPM1040-582-LRT(config)# no debug mep 1 ?
    dm          Delay Measurement.
    test        Test Generation.
    volatile    The MEP instance is change to volatile.
SISPM1040-582-LRT(config)# no debug mep 1 volatile ?
    <cr>
SISPM1040-582-LRT(config)# no debug mep 1 volatile
Error: VTSS_RC_OK
SISPM1040-582-LRT(config)#
SISPM1040-582-LRT(config)#
```

no Commands (Interface Config Mode)

access-list	Access list
aggregation	Aggregation keyword
debug	Debugging functions
description	To clear port description
dot1x	IEEE Standard for port-based Network Access Control
duplex	Set duplex to default.
excessive-restart	Restart backoff algorithm after 16 collisions (No excessive-restart means discard frame after 16 collisions)
flowcontrol	Configure flow control.
frame-length-check	Do not 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
ip	Internet Protocol
ipv6	IPv6 configuration commands
lacp	Enable LACP on this interface
link-oam	Enable or Disable (when the no keyword is entered) Link OAM on the interface
lldp	LLDP configurations.
loop-protect	Loop protection configuration on port
mac	MAC keyword
mtu	Maximum transmission unit
mvr	Multicast VLAN Registration configuration
poe	Power Over Ethernet.
port-security	Enable/disable port security per interface.
ptp	Disable PTP for the interface(s)
pvlan	Private VLAN
qos	Quality of Service
rmon	Configure Remote Monitoring on an interface
sflow	Statistics flow.
shutdown	Shutdown of the interface.
spanning-tree	Enable/disable STP on this interface
speed	Configure speed to default.
switchport	Switching mode characteristics
udld	Disable UDLD

Example:

```
SISPM1040-582-LRT(config-if)# no flowcontrol
SISPM1040-582-LRT(config-if)# no excessive-restart
SISPM1040-582-LRT(config-if)# no duplex ?
   <cr>
SISPM1040-582-LRT(config-if)# no duplex
E port/conf 04:08:53 149/vtss_appl_port_conf_set#4937: Error: SFP ports only sup
ports full aneg (port_no 8)
E port/conf 04:08:54 149/vtss_appl_port_conf_set#4937: Error: SFP ports only sup
ports full aneg (port_no 9)
Illegal advertise disabling for current mode
SISPM1040-582-LRT(config-if)#
SISPM1040-582-LRT(config-if)# no debug ?
   phy    Select phy for debugging (Note only local PHYs, NOT stack-aware)
SISPM1040-582-LRT(config-if)# no debug phy ?
   loopback    Enable/Disable loopback in the PHY
SISPM1040-582-LRT(config-if)# no debug phy loopback ?
   far     Far end loopback (Cu port)
```

```
    near    Near end loopback (MAC side)
    <cr>
SISPM1040-582-LRT(config-if)# no debug phy loopback ?
no debug phy loopback [ near | far ]
SISPM1040-582-LRT(config-if)# no link-oam ?
    link-monitor        Configure link monitoring
    mib-retrieval       Set MIB retrieval support
    mode               Set Link OAM mode to default(Passive)
    remote-loopback     Link OAM remote loopback support
    variable-retrieve   Set Link OAM mib retrieve info to default ,local-info
    <cr>
SISPM1040-582-LRT(config-if)# no link-oam
SISPM1040-582-LRT(config-if)# no shutdown
SISPM1040-582-LRT(config-if)# no udld port
SISPM1040-582-LRT(config-if)# do show running-config
Building configuration...
enable secret 5 level 15 administrator&^%765
hostname SISPM1040-582-LRT
username admin privilege 15 password encrypted 25f831db4663f6c51ab0c85114dcd8c81
1ff473d7cc8cbe6ee46762a7f31ac1a166370caeefa0109f690b049a11487e82f57f98d5f0503edb
c4d6443f503969a
ip dhcp server per-port
!
vlan 1
!
!
!
!
ip route 0.0.0.0 0.0.0.0 192.168.1.254
vlan ethertype s-custom-port 0xffdf
tzidx 0
no snmp-server user default_user engine-id 800007e5017f000001
radius-server key encrypted 1f1cdd117e737fce5ab65bb8acfdb7a1823a240c4cde4986a8cf
aa58da0f6c659103ea61d02acc2ad9f542be2db4456c3a32084c8f9b377e25d1879b428f8148
radius-server attribute 4 1.2.3.4
radius-server attribute 32 admin
radius-server host RadSrvr1 timeout 60 retransmit 350 key encrypted 30b032b1f6fc
3d94888a2ba60a4080f149065420f23c5c0045343b80edfc51d6727472c09a4ae3ce0b2897286f93
0acde032b8bd3885f53b7f46b42a72a2bee5
radius-server host Radrvr2 timeout 60 retransmit 350 key encrypted d271d8fbc8ac3
70e64f8149c02f80a0506dd4ff28cf329c6abfe986e61479f981d017fdbb60d629c6b5b59f1e6a67
1f63cfc8e16c39b3261f3e46d473eb74d33db003450669c3231f748eee117103362
radius-server host mmmmm timeout 500 retransmit 300 key encrypted 7c852d87fde2dd
e0c23361886b3b0902e298a37410b7c2d173e16f2b6154c2949c3cae02357d1b5afaea05fe989ea2
13cb78e8a610604b4ab643dd3da06b056237f6ebc09b856f0f6744b7f423a614c1
tacacs-server timeout 400
tacacs-server key encrypted 905a8f9126d8b9b4d7668c1e54610f5fb46af98afe340e33a558
47f44455a5efd5f27de0b643e5c2d3e994c85f3ee003d7c00aab8eb3bcb003bba8854bdc7cf293fa
14ac0fd737e83452ce6f19dc6a05c325a527a090055fecb7ea4ea999c360ed8bf0988a8fa07efb4c
72675a04d3b5
tacacs-server host TacSrvr1
voice vlan oui 00-01-E3 description siemens1 in the lab
voice vlan oui A4-BA-DB description myphone
system name SISPM1040-582-LRT
system description Managed Hardened PoE++ Switch (8) 10/100/1000Base-T PoE++ Por
ts + (2) 100/1000Base-X SFP Slot
!
interface GigabitEthernet 1/1
 speed auto
-- more --, next page: Space, continue: g, quit: ^C
```

18 Ping Commands

Command: **ping**

Description: Send ICMP echo messages.

Syntax :

ping ip { <v_ip_addr> | <v_ip_name> } [repeat <count>] [size <size>] [interval <seconds>]

ping ipv6 { <v_ipv6_addr> | <v_ipv6_name> } [repeat <count>] [size <size>] [interval <seconds>] [interface vlan <v_vlan_id>]

Parameters:

ip	IP (ICMP) echo
ipv6	IPv6 (ICMPv6) echo
<domain_name>	ICMP destination IP domain name
<ipv4_addr>	ICMP destination IPv4 address
interval	Specify repeat interval
repeat	Specify repeat count
size	Specify datagram size
<0-30>	0-30; Default is 0
repeat	Specify repeat count
size	Specify datagram size
<1-60>	1-60; Default is 5
size	Specify datagram size
<2-1452>	2-1452; Default is 56 (excluding MAC, IP and ICMP headers)
<cr>	

Example:

```
SISPM1040-582-LRT# ping ip 192.168.1.100 interval 5 size 5 repeat 5
PING server 192.168.1.100, 5 bytes of data.
13 bytes from 192.168.1.100: icmp_seq=0, time<10ms
13 bytes from 192.168.1.100: icmp_seq=1, time=10ms
13 bytes from 192.168.1.100: icmp_seq=2, time<10ms
13 bytes from 192.168.1.100: icmp_seq=3, time<10ms
13 bytes from 192.168.1.100: icmp_seq=4, time<10ms
Sent 5 packets, received 5 OK, 0 bad
SISPM1040-582-LRT#
```

Messages:

recvfrom: Operation timed out

Sent 10 packets, received 0 OK, 0 bad

19 Platform Commands

Command: **platform**

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

Syntax : **platform** debug allow
platform debug deny

Parameters: deny Deny debug commands
allow Allow debug commands
<cr>

Example:

```
SISPM1040-582-LRT# platform debug allow

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

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

SISPM1040-582-LRT# platform debug deny
SISPM1040-582-LRT#
```

Note: Contact Technical Support for debug commands.

20 PTP Commands

Command: **ptp**

Description: Miscellaneous non-persistent 1588 settings. **Note** that there are also Config mode ptp commands available.

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>])

Parameters:

<0-3>	PTP Clock instance [0-3].
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 system clock.
<-10000000-10000000>	Ratio in units of 0,1 PPB, (ratio > 0 => faster clock, ratio < 0 => slower clock).
delay	Base wireless transmission 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 pico seconds).
<0-1000000>	Incremental wireless transmission delay pr. byte (in pico seconds)
interface	Interface parameter.
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
<port_type_list>	Port list in 1/1-10

Example:

```
SISPM1040-582-LRT# ptp 0 local-clock ratio 1
SISPM1040-582-LRT# ptp 0 wireless delay 5000 75000 interface GigabitEthernet 1/8

Wireless mode not available for ptp instance 0, port 8
SISPM1040-582-LRT# ptp 0 local-clock update
SISPM1040-582-LRT# show ptp 0 local-clock
PTP Time (0)    : 2011-01-01T05:01:24-08:00 346,946,300
Clock Adjustment method: Internal Timer
SISPM1040-582-LRT#
```

21 Reload Commands

Command: **reload**

Description: Reload system.

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

Parameters:

defaults	Reload defaults without rebooting.
warm	Reload warm (CPU restart only).
keep-ip	Attempt to keep VLAN1 IP setup.

Example:

```
SISPM1040-582-LRT# reload defaults keep-ip
% Reloading defaults, attempting to keep IP address. Please stand by.
SISPM1040-582-LRT# reload warm
% Warm reload in progress, please stand by.
SISPM1040-582-LRT#
Username: admin
Password:
SISPM1040-582-LRT# reload cold
% Cold reload in progress, please stand by.
SISPM1040-582-LRT#
```

22 Send Commands

Command: **send**

Description: Send a message to other tty lines.

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

Parameters:

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

Example:

```
SISPM1040-582-LRT# send * yes,i do
Enter TEXT message.  End with the character 'y'.
y

----------------------------------------
*** Message from line 1:
es,i do

----------------------------------------
SISPM1040-582-LRT#
```

23 Show Commands

Command	Function
aaa	Authentication, Authorization and Accounting methods
access	Access management
access-list	Access list
aggregation	Aggregation port configuration
always-on-poe	Show Always-on PoE Status
clock	show time-of-day clock
command-history-log	Command Histry List
dms	Device Management System (not displayed by the ? command)
dot1x	IEEE Standard for port-based Network Access Control
eps	Ethernet Protection Switching
erps	Ethernet Ring Protection Switching
evc	Ethernet Virtual Connections
event	Show trap event configuration
format	show date, time and port desr format (not displayed by the ? command)
green-ethernet	Green ethernet (Power reduction)
history	Display the session command history
interface	Interface status and configuration
ip	Internet Protocol
ipmc	IPv4/IPv6 multicast configuration
ipv6	IPv6 configuration commands
lacp	LACP configuration/status
line	TTY line information
link-oam	Link OAM configuration
lldp	Display LLDP neighbors information.
logging	System logging message
loop-protect	Loop protection configuration
mac	Mac Address Table information
map-api-key	show google map key configuration
mep	Maintenance Entity Point
monitor	Monitoring different system events
mrp	Show MRP Status
mvr	Multicast VLAN Registration configuration
ntp	Configure NTP
platform	Platform configuration
poe	Power Over Ethernet.
port-security	Port Security status - Port Security is a module with no direct configuration.
privilege	Display command privilege
process	process
ptp	Precision Time Protocol (1588)
pvlan	PVLAN configuration
qos	Quality of Service
radius-server	RADIUS configuration
rapid-ring	Display Rapid Ring configurations
rmon	RMON statistics
running-config	Show running system information

sflow	Statistics flow.
smtp	Show email information
snmp	Display SNMP configurations
spanning-tree	STP Bridge
switchport	Display switching mode characteristics
system	system
tacacs-server	TACACS+ configuration
terminal	Display terminal configuration parameters
udld	Unidirectional Link Detection (UDLD) configurations, statistics and status
upnp	Display UPnP configuration
user-privilege	Users privilege configuration
users	Display information about terminal lines
version	System hardware and software status
vlan	VLAN status
voice	Voice appliance attributes
web	Web

Command: **aaa**

Description: Show Authentication, Authorization and Accounting methods.

Syntax : **show aaa** <cr>

Parameters: <cr>

Example:

```
SISPM1040-582-LRT# show aaa
Authentication :
  console : local, fallback disabled
  telnet  : local, fallback disabled
  ssh     : local, fallback disabled
  http    : local, fallback disabled
  https   : no, fallback disabled
Authorization :
  console : no, commands disabled, fallback disabled
  telnet  : no, commands disabled, fallback disabled
  ssh     : no, commands disabled, fallback disabled
  http    : no, commands disabled, fallback disabled
  https   : tacacs, commands 0-15 enabled, config-commands enabled, fallback enabled
Accounting :
  console : no, commands disabled, exec disabled
  telnet  : no, commands disabled, exec disabled
  ssh     : no, commands disabled, exec disabled
  http    : no, commands disabled, exec disabled
  https   : no, commands disabled, exec disabled
SISPM1040-582-LRT#
```

Command: **access**

Description: Show Access Management statistics

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

Parameters:

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

Example:

```
SISPM1040-582-LRT# show access management
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
--- ---  ------------------------------ ------------------------------ - - -
SISPM1040-582-LRT#
SISPM1040-582-LRT# show access management statistics

Access Management Statistics:
-----------------------------
HTTP     Receive:         0    Allow:         0    Discard:         0
HTTPS    Receive:         0    Allow:         0    Discard:         0
SNMP     Receive:         0    Allow:         0    Discard:         0
TELNET   Receive:         0    Allow:         0    Discard:         0
SSH      Receive:         0    Allow:         0    Discard:         0
SISPM1040-582-LRT#
```

Command: **access-list**

Description: Show Access List config.

Syntax :

show access-list [interface [(<port_type> [<v_port_type_list>])]] [rate -limiter [<rate_limiter_list>]] [ace statistics [<ace_list>]]

show access-list ace-status [static] [link-oam] [loop-protect] [dhcp] [ptp] [upnp] [arp-inspection] [evc] [mep] [ipmc] [ip-source-guard] [ip-mgmt] [tt-loop] [y1564] [dms-client] [dms-server] [dms-ssdp] [dms-onvif] [agv-car] [dms-mdns] [ztp] [rapid-ring] [lacp-on-air] [mrp] [conflicts] [switch <switch_list>]

Parameters:

|	Output modifiers
ace	Access list entry
ace-status	The local ACEs status
interface	Select an interface to configure
rate-limiter	Rate limiter
<1~256>	ACE ID
arp-inspection	The ACEs that are configured by ARP Inspection module hardware limitations
dhcp	The ACEs that are configured by DHCP module
dms-client	The ACEs that are configured by DMS module
dms-mdns	The ACEs that are configured by DMS module
dms-onvif	The ACEs that are configured by DMS module
dms-server	The ACEs that are configured by DMS module
dms-ssdp	The ACEs that are configured by DMS module
evc	The ACEs that are configured by EVC module
ip-source-guard	The ACEs that are configured by IP Source Guard module
ipmc	The ACEs that are configured by IPMC module
lacp-on-air	The ACEs that are configured by LACP On Air 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
mrp	The ACEs that are configured by MRP module
ptp	The ACEs that are configured by PTP module
rapid-ring	The ACEs that are configured by RRING module
static	The ACEs that are configured by users manually
upnp	The ACEs that are configured by UPnP module
conflicts	The ACEs that did not get applied to the hardware due to hardware limitations
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
<port_type_list>	Port list in 1/1-10
<1~16>	Rate limiter ID
|	Output modifiers
statistics	Traffic statistics

Example 1:

```
SISPM1040-582-LRT# show access-list ace statistics
ID   Type     Ing. Port  Policy   Frame Type                      Action  Rate L.  Port Redir. Mirror    Counter
---- -------- ---------- -------- ------------------------------ ------ -------- ----------- --------  -------
1    GLOBAL   ALL        Any      ANY                             Permit Disabled  Disabled    Disabled  4986
2    GLOBAL   3          Any      ANY                             Permit Disabled  Disabled    Disabled  0
3    GLOBAL   4          Any      EType                           Permit Disabled  Disabled    Disabled  0
```

```
4    GLOBAL   ALL       Any      IPv4                          Permit Disabled  Disabled    Disabled  0
Switch access-list ace number: 4
SISPM1040-582-LRT# show access-list rate-limiter
Switch access-list rate limiter ID 1 is 1 pps
Switch access-list rate limiter ID 2 is 1 pps
Switch access-list rate limiter ID 3 is 1 pps
Switch access-list rate limiter ID 4 is 1 pps
Switch access-list rate limiter ID 5 is 1 pps
Switch access-list rate limiter ID 6 is 1 pps
Switch access-list rate limiter ID 7 is 1 pps
Switch access-list rate limiter ID 8 is 1 pps
;;;
Switch access-list rate limiter ID 16 is 1 pps
SISPM1040-582-LRT#
```

Example 2:

```
SISPM1040-582-LRT# show access-list ace-status arp-inspection conflicts
User
----
S   : static
IPSG: ipSourceGuard
IPMC: ipmc
EVC: evc
MEP : mep
ARPI: arpInspection
UPnP: upnp
PTP : ptp
DHCP: dhcp
LOOP: loopProtect
LOAM: linkOam
DMSC: DMS CLIENT
DMSS: DMS Server
DMSD: DMS SSDP
DMSO: DMS Onvif
DMSM: DMS mDNS
RING: Rapid Ring
LACP: LACP On Air
MRP: MRP
Switch 1 access-list ace number: 0
SISPM1040-582-LRT#
```

Example 3:

```
SISPM1040-582-LRT# show access-list interface rate-limiter 1 ace statistics

Switch access-list ace number: 0

Switch access-list rate limiter ID 1 is 1 pps

GigabitEthernet 1/1 :
---------------------
GigabitEthernet 1/1 access-list action is permit
GigabitEthernet 1/1 access-list policy ID is 0
GigabitEthernet 1/1 access-list rate limiter ID is disabled
  EVC policer ID is disabled
GigabitEthernet 1/1 access-list redirect is disabled
GigabitEthernet 1/1 access-list mirror is disabled
GigabitEthernet 1/1 access-list logging is disabled
GigabitEthernet 1/1 access-list shutdown is disabled
GigabitEthernet 1/1 access-list port-state is enabled
GigabitEthernet 1/1 access-list counter is 461
```

```
GigabitEthernet 1/2 :
---------------------
GigabitEthernet 1/2 access-list action is permit
GigabitEthernet 1/2 access-list policy ID is 0
SISPM1040-582-LRT# show access-list interface rate-limiter 1 ace statistics 1

Switch access-list ace number: 0

Switch access-list rate limiter ID 1 is 1 pps

GigabitEthernet 1/1 :
---------------------
GigabitEthernet 1/1 access-list action is permit
GigabitEthernet 1/1 access-list policy ID is 0
GigabitEthernet 1/1 access-list rate limiter ID is disabled
  EVC policer ID is disabled
GigabitEthernet 1/1 access-list redirect is disabled
GigabitEthernet 1/1 access-list mirror is disabled
GigabitEthernet 1/1 access-list logging is disabled
GigabitEthernet 1/1 access-list shutdown is disabled
GigabitEthernet 1/1 access-list port-state is enabled
GigabitEthernet 1/1 access-list counter is 464

GigabitEthernet 1/2 :
---------------------
GigabitEthernet 1/2 access-list action is permit
GigabitEthernet 1/2 access-list policy ID is 0
-- more --, next page: Space, continue: g, quit: ^C

SISPM1040-582-LRT# show access-list rate-limiter
Switch access-list rate limiter ID 1 is 1 pps
Switch access-list rate limiter ID 2 is 1 pps
Switch access-list rate limiter ID 3 is 1 pps
Switch access-list rate limiter ID 4 is 1 pps
Switch access-list rate limiter ID 5 is 1 pps
Switch access-list rate limiter ID 6 is 1 pps
Switch access-list rate limiter ID 7 is 1 pps
Switch access-list rate limiter ID 8 is 1 pps
Switch access-list rate limiter ID 9 is 1 pps
Switch access-list rate limiter ID 10 is 1 pps
Switch access-list rate limiter ID 11 is 1 pps
Switch access-list rate limiter ID 12 is 1 pps
Switch access-list rate limiter ID 13 is 1 pps
Switch access-list rate limiter ID 14 is 1 pps
Switch access-list rate limiter ID 15 is 1 pps
Switch access-list rate limiter ID 16 is 1 pps
SISPM1040-582-LRT#
```

Command: **aggregation**

Description: Show Aggregation mode and port settings.

Syntax : **show** aggregation mode

Parameters:

Example:

```
SISPM1040-582-LRT# show aggregation
Aggr ID  Name    Type    Speed     Configured Ports         Aggregated Ports      Aggregated Bandwidth
-------  ------  ------  --------  -----------------        ----------------      --------------------
1        LLAG1   Static  1G        GigabitEthernet 1/1-2    none                  none
2        LLAG2   Static  100M      GigabitEthernet 1/3-4    none                  none
3        LLAG3   Static  1G        GigabitEthernet 1/5-6    none                  none
SISPM1040-582-LRT# show aggregation mode
Aggregation Mode:

SMAC  : Enabled
DMAC  : Enabled
IP    : Enabled
Port  : Enabled
SISPM1040-582-LRT#
```

Command: **always-on-poe**

Description: Show Always-on PoE Status. FW VB7.20.0039 changed the "Always On PoE" behavior; the feature is enabled and shown on Web UI after upgrading to FW VB7.20.0039 or above. The default value is off.

Syntax : **show** always-on-poe

Parameters: | Output modifiers

<cr>

Example:

```
SISPM1040-582-LRT# show always-on-poe
Always-on PoE Status : Enable
SISPM1040-582-LRT#
```

Command: **clock**

Description: Show Clock parameters.

Syntax : **show** clock

Parameters: detail Display detailed information
<cr>

Example:

```
SISPM1040-582-LRT# show clock
System Time     : 2022-02-22T10:02:57+00:00

SISPM1040-582-LRT# show clock detail
System Time     : 2022-02-22T10:03:02+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)
SISPM1040-582-LRT#
```

Command: **command-history-log**

Description: Show Command History List

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

Parameters:

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

Example:

```
SISPM1040-582-LRT# show command-history-log status
The status of termal for Command History Feature : Enable
SISPM1040-582-LRT# show history
  show ver b
  show ver
  term exec 1440
  show rapid-ring
  con t
  command-history-log
  command-history-log
  spanning-tree aggregation
  help
  spanning-tree auto-edge
  spanning-tree bpdu-guard
  spanning-tree edge
  spanning-tree link-type shared
  spanning-tree mst 5 port-priority 34
  spanning-tree edge
  exit
  enable
  con t
  exit
  link-oam remote-loopback start interface GigabitEthernet 1/5
  con t
-- more --, next page: Space, continue: g, quit: ^C
```

Command: **dms**

Description: Show Device Management System configuration.

Syntax : **show dms** <cr>

Parameters: None.

Example:

```
SISPM1040-582-LRT# show dms
DMS Controller Capability : On
Discovery : Arp->On, UPNP->On, NBNS->On, LLDP->On, Onvif->On, Bonjour->On
DMS total device: 3

======= DMS Entry Information Start ============================
(001),MAC(00-c0-f2-49-39-30),PA_MAC(00-00-00-00-00-00),port(0),p_port(0),C_IP(19
2.168.1.77),C_sub(255.255.255.0),C_gw(192.168.1.254),http_port(80),IP1(192.168.1
.77),IP2(169.254.149.33),IP1_U(3),UM(0),vid(1),prio(99),manufacturers( SISPM1040
-582-LRT),d_name(SISPM1040-582-LRT),type(1001)(10),status(1),PoE(204),group(0)(0
),app_fw(0)(0)(0)(0),time(67100)

(002),MAC(00-1b-11-b2-6d-4b),PA_MAC(00-c0-f2-49-39-30),port(2),p_port(0),up_link
_MAC(00-00-00-00-00-00),up_link_port(0),C_IP(192.168.1.99),C_sub(0.0.0.0),C_gw(0
.0.0.0),http_port(80),IP1(192.168.1.99),IP2(0.0.0.0),IP1_U(2),UM(0),vid(1),prio(
99),manufacturers( ),d_name(),auth(/),type(2001)(0),status(1)(0)(0),PoE(NoN),acc
ount(),pwd(),media(),profile(),strim(),info/auth(0/0),group(0)(0)(1),app_fw(0)(0
)(0)(0),ver(),time(67091)

(003),MAC(ac-cc-8e-ba-f7-c1),PA_MAC(00-c0-f2-49-39-30),port(1),p_port(0),up_link
_MAC(00-00-00-00-00-00),up_link_port(0),C_IP(169.254.138.213),C_sub(0.0.0.0),C_g
w(0.0.0.0),http_port(80),IP1(169.254.138.213),IP2(169.254.138.213),IP1_U(0),UM(0
),vid(1),prio(99),manufacturers(AXIS AXIS P1447-LE),d_name(AXIS P1447-LE - ACCC8
EBAF7C1),auth(admin/admin),type(3001)(0),status(1)(0)(0),PoE(42),account(admin),
pwd(admin),media(http://169.254.138.213:80/onvif/services),profile(profile_1_h26
4),strim(rtsp://169.254.138.213/onvif-media/media.amp?profile=profile_1_h264&ses
siontimeout=60&streamtype=unicast),info/auth(0/0),group(0)(0)(1),app_fw(0)(0)(0)
(0),ver(),time(67097)

======= DMS Entry Information end ============================

======= DMS Grouping Information start ============================
Grouping Entry Cnt(0)

======= DMS Grouping Information end ============================
SISPM1040-582-LRT#
```

Command: **dot1x**

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

Syntax :

show dot1x statistics { eapol | radius | all } [interface (<port_type> [<v_port_type_list>])]

show dot1x status [interface (<port_type> [<v_port_type_list>])] [brief

Parameters:

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

Example:

```
SISPM1040-582-LRT# show dot1x status
GigabitEthernet 1/1 :
---------------------
Admin State        Port State            Last Source       Last ID
-----------------  --------------------  ----------------  -------------
Force Authorized   Globally Disabled     -                 -

Current Radius QOS    Current Radius VLAN   Current Guest VLAN
--------------------  --------------------  --------------------
-                     -                     -
GigabitEthernet 1/2 :
---------------------
Admin State        Port State            Last Source       Last ID
-----------------  --------------------  ----------------  -------------
Force Authorized   Globally Disabled     -                 -

Current Radius QOS    Current Radius VLAN   Current Guest VLAN
--------------------  --------------------  --------------------
-                     -                     -
                -                     -
;;;;;;;
SISPM1040-582-LRT# show dot1x statistics ?
   all      Show all dot1x statistics
   eapol    Show EAPoL statistics
   radius   Show Backend Server statistics
SISPM1040-582-LRT# show dot1x statistics all
GigabitEthernet 1/1 EAPOL Statistics:

Rx Total:                           0   Tx Total:
   0
Rx Response/Id:                      0   Tx Request/Id:
   0
Rx Response:                        0   Tx Request:
   0
Rx Start:                           0
Rx Logoff:                          0
Rx Invalid Type:                     0
```

```
Rx Invalid Length:                    0

GigabitEthernet 1/1 Backend Server Statistics:

Rx Access Challenges:                 0   Tx Responses:
    0
Rx Other Requests:                    0
Rx Auth. Successes:                   0
Rx Auth. Failures:                    0
SISPM1040-582-LRT#
```

Command: **eps**

Description: Show Ethernet Protection Switching.

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

Parameters:

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

Example:

```
SISPM1040-582-LRT# show eps

EPS state is:
    Inst       State     Wstate     Pstate     TxAps r b     RxAps r b     Fop
Pm     FopCm     FopNr     FopNoAps

SISPM1040-582-LRT#
```

Command: **erps**

Description: Show Ethernet Ring Protection Switching.

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

Parameters:

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

Example:

```
SISPM1040-582-LRT# show erps
(L=Link Up/Down; B=Blocked/Unblocked)      Maj RPL  RPL   RPL  FSM   R-APS
Gr Typ V Rev Port 0     L B Port 1     L B Grp Role Port  Blck State TX RX FOP
--+---+-+---+----------+-+-+----------+-+-+---+----+-----+----+-----+--+--+---
 1 M-I 2 Rev Gi 1/1     U B Gi 1/2     U U -   -    -     -    PEND  Y     N
 2 Sub 2 Rev Gi 1/2     U B Gi 1/3     U B -   -    -     -    PEND  N     N
 3 S-I 2 Rev Gi 1/3     U B -          U U 1   -    -     -    PEND  N     N
SISPM1040-582-LRT#
```

Command: **evc**

Description: Show Ethernet Virtual Connections .

Syntax :

show evc statistics { [<evc_id> | all] } [ece [<ece_id>]] [interface (<port_type> [<port_list>])] [pw <pw_num_list>] [cos <cos>] [green | yellow | red | discard] [frames | bytes]

show evc { [<evc_id> | all] } [ece [<ece_id>]]

Parameters:

<1-256>	EVC identifier
all	Process all EVCs
ece	EVC Control Entry
statistics	Statistic counters
<1-256>	ECE identifier
cos	Setup Class of Service
discard	Discard counters
green	Green counters
interface	Interface
red	Red counters
yellow	Yellow counters
<0~7>	Class of Service
interface	Interface
<port_type_list>	Port list for all port types
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port

Example:

```
SISPM1040-582-LRT# show evc all
EVC ID  Status
------  ------
1       Active

SISPM1040-582-LRT# show evc ece
SISPM1040-582-LRT# show evc statistics
Interface GigabitEthernet 1/1, Class 0 Statistics:

Rx Green:                        3501   Tx Green:                          0
Rx Yellow:                          0   Tx Yellow:                         0
Rx Red:                             0
Rx Green Discard:                   0
Rx Yellow Discard:                  0

Interface GigabitEthernet 1/1, Class 1 Statistics:

Rx Green:                           0   Tx Green:                          0
Rx Yellow:                          0   Tx Yellow:                         0
Rx Red:                             0
Rx Green Discard:                   0
Rx Yellow Discard:                  0

Interface GigabitEthernet 1/1, Class 2 Statistics:

Rx Green:                           0   Tx Green:                          0
Rx Yellow:                          0   Tx Yellow:                         0
Rx Red:                             0
Rx Green Discard:                   0
-- more --, next page: Space, continue: g, quit: ^C
```

```
SISPM1040-582-LRT# show evc statistics cos 1 discard interface GigabitEthernet 1
/5
Interface              Class  Rx Green Discard     Rx Yellow Discard
---------------------  -----  -------------------  -------------------
GigabitEthernet 1/5     1     0                    0
SISPM1040-582-LRT# show evc statistics green cos 7
Interface              Class  Rx Green             Tx Green
---------------------  -----  -------------------  -------------------
GigabitEthernet 1/1     7     0                    1318795
GigabitEthernet 1/2     7     0                    1321530
GigabitEthernet 1/3     7     0                    0
GigabitEthernet 1/4     7     0                    1319564
GigabitEthernet 1/5     7     0                    1317118
GigabitEthernet 1/6     7     0                    1319552
GigabitEthernet 1/7     7     0                    0
GigabitEthernet 1/8     7     0                    1383421
GigabitEthernet 1/9     7     0                    0
GigabitEthernet 1/10    7     0                    68596
SISPM1040-582-LRT#
```

Command: **event**

Description: Show trap event configurations.

Syntax : **show** event <cr>

show event port <cr>

Parameters: show event
show event port

Example:

```
SISPM1040-582-LRT# show event
Group Name                       Severity Level    Syslog Mode   Trap Mode     SMTP Mode     Digital Out
-------------------------------  ---------------  ------------  ------------------------  ---------
ACL                                 Info             enable       disable       disable       N/A
ACL-Log                             Info             enable       disable       disable       N/A
Access-Mgmt                         Info             enable       disable       disable       N/A
Auth-Failed                         Crit             enable       disable       disable       N/A
Cold-Start                          Warning          enable       disable       disable       N/A
Config-Info                         Info             enable       disable       disable       N/A
DI-1-Abnormal                       Warning          enable       enable        enable        enable
DI-1-Normal                         Warning          enable       enable        enable        enable
DMS                                 Info             enable       enable        disable       N/A
-- more --, next page: Space, continue: g, quit: ^C

SISPM1040-582-LRT# show event port
Port Active  LinkOn  LinkOff Overload RxThreshold TrafficDuration Syslog Trap SMTP  DigitalOut Severity
---- ------- ------- ------- -------- ----------- --------------- ------- ------
1    enable  enable  enable  disable  0           1               enable  disable disable disable   Warning
2    enable  enable  enable  disable  0           1               enable  disable disable disable   Warning
3    enable  enable  enable  disable  0           1               enable  disable disable disable   Warning
4    enable  enable  enable  disable  0           1               enable  disable disable disable   Warning
5    enable  enable  enable  disable  0           1               enable  disable disable disable   Warning
6    enable  enable  enable  disable  0           1               enable  disable disable disable   Warning
7    enable  enable  enable  disable  0           1               enable  disable disable disable   Warning
8    enable  enable  enable  disable  0           1               enable  disable disable disable   Warning
9    enable  enable  enable  disable  0           1               enable  disable disable disable   Warning
-- more --, next page: Space, continue: g, quit: ^C
```

Command: **format**

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

Syntax : **show** format <cr>

Example:

```
SISPM1040-582-LRT# show format
formatDateTime : disable
dateTime       : yyyy-mm-dd
timeFormat     : 24 hour
formatPortDesc : disable
SISPM1040-582-LRT#
```

Command: **show green-ethernet**

Description: Show Green Ethernet (Power reduction).

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

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. port or ports.
short-reach	Shows green Ethernet short-reach status for a specific port or ports.
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
|	Output modifiers
<port_type_list>	Port list for all port types
<cr>	

Example:

```
SISPM1040-582-LRT# show green-ethernet eee
Interface              Lnk  EEE Capable  EEE Enabled  LP EEE Capable   EEE In Power Save
---------------------  ---  -----------  -----------  ---------------  -----------------
GigabitEthernet 1/1    Yes   Yes          Yes          No               No
GigabitEthernet 1/2    No    Yes          Yes          No               No
GigabitEthernet 1/3    No    Yes          Yes          No               No
GigabitEthernet 1/4    Yes   Yes          Yes          Yes              Yes
GigabitEthernet 1/5    No    Yes          No           No               No
GigabitEthernet 1/6    No    Yes          No           No               No
GigabitEthernet 1/7    Yes   Yes          No           Yes              No
GigabitEthernet 1/8    No    Yes          No           No               No
GigabitEthernet 1/9    No    No           N/A          N/A              N/A

-- more --, next page: Space, continue: g, quit: ^C
SISPM1040-582-LRT# show green-ethernet short-reach interface GigabitEthernet 1/3

Interface              Lnk  Short-Reach
---------------------  ---  ------------
GigabitEthernet 1/3    No   No
SISPM1040-582-LRT#
```

Command: **history**

Description: Display the session command history.

Syntax : **show** history

Parameters: | Output modifiers
<cr>

Example:

```
SISPM1040-582-LRT# show history
  show aaa
  show access management
  show aggregation mode
  show clock detail
  show dot1x status
  show dot1x statistics all
  show eps
  show erps
  show evc
  show evc statistics
  show event port
  show green-ethernet
  show green-ethernet eee
  show history
SISPM1040-582-LRT#
```

Command: **interface**

Description: Show Interface status and configuration.

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

Parameters:

interface	Interface status and configuration
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
vlan	VLAN status
<port_type_list>	Port list for all port types
CableDiag	Display the latest cable diagnostic results.
capabilities	Display capabilities.
description	Show port description.
statistics	Display statistics counters.
status	Display status.
switchport	Show interface switchport information
|	Output modifiers
access	Show access ports status
hybrid	Show hybrid ports status
trunk	Show trunk ports status

detail	Display capabilities in detail.
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	Queue number
up	Show ports which are up
<0~7>	Queue number

Example: 1

```
SISPM1040-582-LRT# show interface GigabitEthernet 1/5 capabilities

GigabitEthernet 1/5 Capabilities:
    Tx Central                                Mon1      Mon2        Mon3
Port Wavelength  Bit Rate   Temperature   Vcc   (Bias)   (Tx PWR)     (Rx PWR)
---- ---------- ----------- ----------- ------- ------ ------------ ------------

  Model:               SISPM1040-582-LRT
  Type:                10/100/1000BaseT
  Speed:               10,100,1000,auto
  Duplex:              half,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:         yes
  RMirror:             yes
  PortSecure:          yes
  Dot1x:               yes
SISPM1040-582-LRT# show interface GigabitEthernet 1/10 capabilities

GigabitEthernet 1/10 Capabilities:
    Tx Central                                Mon1      Mon2        Mon3
Port Wavelength  Bit Rate   Temperature   Vcc   (Bias)   (Tx PWR)     (Rx PWR)
---- ---------- ----------- ----------- ------- ------ ------------ ------------
 10        850     10 Gbps     52.34 C  3.34 V   6 mA    -2.78 dBm    -7.29 dBm
  Name/Model:          Transition     TN-10GSFP-SR
  Type:                10G
  Speed:               100,1000,auto
  Duplex:              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:         yes
```

```
  RMirror:             yes
  PortSecure:          yes
  Dot1x:               yes
SISPM1040-582-LRT#
SISPM1040-582-LRT# show interface GigabitEthernet 1/10 capabilities detail

GigabitEthernet 1/10 Capabilities:
Connector Type      : SFP or SFP Plus - LC
Fiber Type          : Reserved
TX Central Wavelength: 850
Bit Rate            : 10 Gbps
Vendor OUI          : 00-c0-f2
Vendor name         : Transition
Vendor PN           : TN-10GSFP-SR
Vendor revision     : 0001
Vendor Serial Number : 8801095
Data Code           : 120731
Temperature         : 52.34 C
Vcc                 : 3.34 V
Mon1(Bias)          : 6 mA
Mon2(TX PWR)        : -2.78 dBm
Mon3(RX PWR)        : -7.29 dBm
  Name/Model:           Transition     TN-10GSFP-SR
  Type:                 10G
  Speed:                100,1000,auto
  Duplex:               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:         yes
  RMirror:              yes
  PortSecure:           yes
  Dot1x:                yes
SISPM1040-582-LRT#
SISPM1040-582-LRT# show interface GigabitEthernet 1/5 status
Interface              Mode      Speed & Duplex  Flow Control  Max Frame  Excessive  Link
---------------------  -------  --------------  ------------  ---------  ---------  --------
GigabitEthernet 1/5    enabled   Auto            disabled      9600       Discard    100fdx
SISPM1040-582-LRT#
```

Example 2:

```
SISPM1040-582-LRT# show interface * switchport access
Name: GigabitEthernet 1/1
Administrative mode: access
Access Mode VLAN: 1
Trunk Native Mode VLAN: 1
Administrative Native VLAN tagging: disabled
Allowed VLANs: 1-4095
Hybrid port configuration
-------------------------
Port Type: C-Port
Acceptable Frame Type: All
Ingress filter: Disabled
```

```
Egress tagging: All except-native
Hybrid Native Mode VLAN: 1
Hybrid VLANs Enabled: 1-4095

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

Example 3:

```
SISPM1040-582-LRT# show interface * CableDiag
Interface              Link Status    Test Result    Length
---------------------  -------------  -------------  -------------
GigabitEthernet 1/1    No test results
GigabitEthernet 1/2    No test results
GigabitEthernet 1/3    No test results
GigabitEthernet 1/4    No test results
GigabitEthernet 1/5    No test results
GigabitEthernet 1/6    No test results
GigabitEthernet 1/7    No test results
GigabitEthernet 1/8    No test results
GigabitEthernet 1/9    does not have Cable Diagnostic support
GigabitEthernet 1/10   does not have Cable Diagnostic support
SISPM1040-582-LRT#
```

Example 4:

```
SISPM1040-582-LRT# show interface vlan 1
VLAN1
  LINK: 00-c0-f2-4f-7f-cd Mtu:1500 <UP BROADCAST RUNNING MULTICAST>
  IPv4: 192.168.1.77/24 192.168.1.255
  IPv6: fe80::2c0:f2ff:fe4f:7fcd/64 <UP RUNNING>
  IPv4: 169.254.97.74/16 169.254.255.255
SISPM1040-582-LRT# show interface vlan
VLAN1
  LINK: 00-c0-f2-4f-73-d0 Mtu:1500 <UP BROADCAST RUNNING MULTICAST>
  IPv4: 192.168.1.77/24 192.168.1.255
  IPv4: 169.254.155.234/16 169.254.255.255
  IPv6: fe80::2c0:f2ff:fe4f:73d0/64 <UP RUNNING>

VLAN4096
  LINK: 00-c0-f2-4f-73-d0 Mtu:1500 <BROADCAST MULTICAST>

VLAN4097
  LINK: 00-c0-f2-4f-73-d0 Mtu:1500 <BROADCAST MULTICAST>
```

Messages: *% VLAN interface 10 does not exist.*

Command: **ip**

Description: Show Internet Protocol config.

Syntax :

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 excluded-address
show ip dhcp pool [<pool_name>]
show ip dhcp relay [statistics]
show ip dhcp server
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 domain
show ip gateway interface
show ip http
show ip http server secure status
show ip igmp snooping [vlan <v_vlan_list>] [group-database [interface (<port_type> [<v_port_type_list>])] [sfm-information]] [detail]
show ip igmp snooping mrouter [detail]
show ip interface brief
show ip link-local interface
show ip name-server
show ip route
show ip source binding [dhcp-snooping | static] [interface (<port_type> [<in_port_type_list>])]
show ip ssh
show ip ssh key
show ip statistics [system] [interface vlan <v_vlan_list>] [icmp] [icmp-msg <type>]
show ip telnet
show ip verify source [interface (<port_type> [<in_port_type_list>])]

Parameters:

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

|	Output modifiers
inspection	ARP inspection
detailed	DHCP server
excluded-address	Excluded IP database
pool	DHCP pools information
relay	DHCP relay agent configuration
server	DHCP server information
snooping	DHCP snooping
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
|	Output modifiers
interface	Select an interface to configure
table	show IP DHCP snooping table
<word32>	Pool name in 32 characters
server	HTTP web server
secure	Secure
status	Status
snooping	Snooping IGMP
detail	Detail running information/statistics of IGMP snooping
group-database	Multicast group database from IGMP
mrouter	Multicast router port status in IGMP
vlan	Search by VLAN
detail	Detail running information/statistics of IGMP snooping
interface	Search by port
sfm-information	Including source filter multicast information from IGMP
vlan	Search by VLAN
interface	show Link-Local address binding interface
binding	IP source binding
dhcp-snooping	learn from DHCP snooping
interface	IP source binding interface configuration
static	setting from static entries
key	SSH key
icmp	IPv4 ICMP traffic
icmp-msg	IPv4 ICMP traffic for designated message type
interface	Select an interface to configure
system	IPv4 system traffic
vlan	IPv4 interface traffic
<vlan_list>	VLAN identifier(s): VID
system	IPv4 system traffic
interface	ip verify source interface configuration
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port

Example 1:

```
SISPM1040-582-LRT# show ip interface brief
Vlan Address             Method   Status
---- -------------------- -------- ------
   1 192.168.1.77/24      Manual   UP
```

Example 2:

```
SISPM1040-582-LRT# show ip verify source
IP Source Guard Mode : disabled

Port                    Port Mode    Dynamic Entry Limit
----                    ---------    -------------------
GigabitEthernet 1/1       disabled     unlimited
GigabitEthernet 1/2       disabled     unlimited
GigabitEthernet 1/3       disabled     unlimited
GigabitEthernet 1/4       disabled     unlimited
GigabitEthernet 1/5       disabled     unlimited
GigabitEthernet 1/6       disabled     unlimited
GigabitEthernet 1/7       disabled     unlimited
GigabitEthernet 1/8       disabled     unlimited
GigabitEthernet 1/9       disabled     unlimited
GigabitEthernet 1/10      disabled     unlimited
SISPM1040-582-LRT#
SISPM1040-582-LRT# show ip telnet
Switch Telnet server is enabled
Switch TELNET server port is 23

SISPM1040-582-LRT#
```

Example 3:

```
SISPM1040-582-LRT# show ip dhcp detailed statistics?
show ip dhcp detailed statistics { server | client | snooping | relay | normal-forward | combined } [
interface ( <port_type> [ <in_port_list> ] ) ]
SISPM1040-582-LRT# show ip http server secure status
Switch secure HTTP web server is disabled
Switch secure HTTP web server port is 443
Switch secure HTTP web redirection is disabled
Switch secure HTTP certificate is presented
SISPM1040-582-LRT# show ip ssh key
ECDSA:
Public key portion is:
 521 ecdsa-sha2-nistp521 AAAAE2VjZHNhLXNoYTItbmlzdHA1MjEAAAAIbmlzdHA1MjEAAACFBAG
aZeVOzRTikl0nxzzSU6XX6Xdm+/rsrv6h4w/5ajd7VZZo94qR13856LYCw1aB8AK/kkpBxdo0sLHE2GF
GVzj1mwGaORv1bmyXy0fziF5tjnUqN6kqn6M1+mtt8jLMviNy/S/6uCSsAA7ANTv0cKQ6QiMXbC24BIu
9bKiSY8ouKV6YiQ==
ECDSA: md5 73:6e:16:b7:6f:04:4d:94:5b:bd:c9:20:03:2e:b1:09

SISPM1040-582-LRT#
```

Example 4:

```
SISPM1040-582-LRT# show ip link-local interface
Link-Local Address binding interface: 1
SISPM1040-582-LRT# show ip gateway interface
Gateway Address binding interface: 1
SISPM1040-582-LRT# show ip gateway interface
Gateway Address binding interface: 10
SISPM1040-582-LRT# show ip ssh
Switch SSH is enabled
Switch SSH port is 22
Switch scp is enabled
SISPM1040-582-LRT#
```

Example 5:

```
SISPM1040-582-LRT# show ip igmp snooping

IGMP Snooping is enabled to start snooping IGMP control plane.

Switch-1 IGMP Interface Status

IGMP snooping VLAN 1 interface is enabled.
Querier status is ACTIVE
RX IGMP Query:16 V1Join:0 V2Join:0 V3Join:11 V2Leave:0
TX IGMP Query:16 / (Source) Specific Query:0
Compatibility:IGMP-Auto / Querier Version:Version 3 / Host Version:Version 3

IGMP snooping VLAN 10 interface is enabled.
Querier status is ACTIVE
RX IGMP Query:0 V1Join:0 V2Join:0 V3Join:0 V2Leave:0
TX IGMP Query:0 / (Source) Specific Query:0
Compatibility:Forced IGMPv3 / Querier Version:Version 3 / Host Version:Version 3

SISPM1040-582-LRT# show ip igmp snooping detail

IGMP Snooping is enabled to start snooping IGMP control plane.
(IGMP proxy for JOIN/LEAVE mechanism is active)
Multicast streams destined to unregistered IGMP groups will be flooding.

Switch-1 IGMP Interface Status

IGMP snooping VLAN 1 interface is enabled.
Querier status is ACTIVE (Administrative Control: Join Querier-Election)
Querier Up time: 2025 seconds; Query Interval: 100 seconds
Querier address is set to 192.168.1.77
Active IGMP Querier Address is 192.168.1.77
PRI:0 / RV:2 / QI:125 / QRI:100 / LMQI:10 / URI:1
RX IGMP Query:17 V1Join:0 V2Join:0 V3Join:12 V2Leave:0
TX IGMP Query:17 / (Source) Specific Query:0
IGMP RX Errors:82; Group Registration Count:1
Compatibility:IGMP-Auto / Querier Version:Version 3 / Host Version:Version 3
Older Version Querier Present Timeout: 204 seconds
Older Version Host Present Timeout: 87 seconds

IGMP snooping VLAN 10 interface is enabled.
Querier status is ACTIVE (Administrative Control: Join Querier-Election)
-- more --, next page: Space, continue: g, quit: ^C
SISPM1040-582-LRT# show ip igmp snooping vlan 10-100

IGMP Snooping is enabled to start snooping IGMP control plane.

Switch-1 IGMP Interface Status

IGMP snooping VLAN 10 interface is enabled.
Querier status is ACTIVE
RX IGMP Query:0 V1Join:0 V2Join:0 V3Join:0 V2Leave:0
TX IGMP Query:0 / (Source) Specific Query:0
Compatibility:Forced IGMPv3 / Querier Version:Version 3 / Host Version:Version 3

SISPM1040-582-LRT#
```

Example 6:

```
SISPM1040-582-LRT# show ip gateway interface
Gateway Address binding interface: 1
SISPM1040-582-LRT# show ip ssh
Switch SSH is enabled
Switch SSH port is 22
Switch scp is disabled
SISPM1040-582-LRT# show ip ssh key
ECDSA:
Public key portion is:
 521 ecdsa-sha2-nistp521 AAAAE2VjZHNhLXNoYTItbmlzdHA1MjEAAAAIbmlzdHA1MjEAAACFBAE
tAho5rSYeDWodMmVrPNLhRp9DS1xtd929/sEMd63tmRHfHop90tqyHCV1JJpsa9sS2HElLx1Dvp5dOCh
c0kk0gQAsLShmCzYMDPJBPOxCbCvkzF05q0xtFazUTzaVCVS54r1wCm5ipLk0E99pGRGadAN/IrX0XaW
ez41ZKmlAyF8mQw==
ECDSA: md5 d4:50:6a:c9:25:ff:d2:36:86:6b:38:e2:f0:62:46:f8

SISPM1040-582-LRT# show ip ssh
Switch SSH is enabled
Switch SSH port is 22
Switch scp is disabled
```

Command: **ipmc**

Description: Show IPv4/IPv6 multicast configuration.

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

Parameters:

profile	IPMC profile configuration
|	Output modifiers
<word16>	Profile name in 16 char's
detail	Detail information of a profile
range	A range of IPv4/IPv6 multicast addresses for the profile
<word16>	Range entry name in 16 characters
default	Set a command to its defaults
description	Additional description about the profile in 64 characters
do	To run exec commands in config mode
end	Go back to EXEC mode
exit	Exit from current mode
help	Description of the interactive help system
no	Negate a command or set its defaults
range	A range of IPv4/IPv6 multicast addresses for the profile
deny	Deny matching addresses
permit	Permit matching addresses
log	Log when matching
next	Specify next entry used in profile. Default: Add entry last
<word16>	Range entry name in 16 characters

Example 1:

```
SISPM1040-582-LRT# show ipmc profile
IPMC Profile is currently disabled, please enable profile to start filtering.
SISPM1040-582-LRT# show ipmc profile

IPMC Profile is now enabled to start filtering.

Profile: Prof1 (In VER-INI Mode)
Description: firstProfile in IPMC Profile Table
SISPM1040-582-LRT# show ipmc range
SISPM1040-582-LRT#
SISPM1040-582-LRT(config)# ipmc profile iName1
SISPM1040-582-LRT(config-ipmc-profile)# range iName1 deny log next iName1

SISPM1040-582-LRT(config-ipmc-profile)# do show ipmc profile

IPMC Profile is now enabled to start filtering.

Profile: iName1 (In IGMP Mode)
Description: MMMMMM
HEAD-> iName1 (Deny the following range and log the matched entry)
Start Address: 233.20.20.60
End Address  : 233.20.20.80
SISPM1040-582-LRT(config-ipmc-profile)#
```

Example 2:

```
SISPM1040-582-LRT# show ipmc profile detail

IPMC Profile is now enabled to start filtering.

Profile: Prof1 (In VER-INI Mode)
Description: firstProfile in IPMC Profile Table

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]

Profile: Prof2 (In VER-INI Mode)
Description: secondProfile in IPMC Profile Table

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]

Profile: Prof3 (In VER-INI Mode)
Description: 3rdProfile in IPMC Profile Table

IGMP will deny matched address between [224.0.0.0 <-> 239.255.255.255]
-- more --, next page: Space, continue: g, quit: ^C
```

Messages:
% Invalid range name Rnge1.
IPMC Profile is currently disabled, please enable profile to start filtering.
% Failed to set range iName1 in profile iName1.

Command: **ipv6**

Description: Show IPv6 configuration commands.

Syntax :

show ipv6 dhcp-client [interface vlan <v_vlan_list>]
show ipv6 interface [vlan <v_vlan_list> { brief | statistics }]
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 [interface vlan <v_vlan_list>]
show ipv6 route [interface vlan <v_vlan_list>]
show ipv6 statistics [system] [interface vlan <v_vlan_list>] [icmp] [icmp-msg <type>]

Parameters:

dhcp-client	Manage DHCPv6 client service
interface	Select an interface to configure
mld	Multicast Listener Discovery
neighbor	IPv6 neighbors
route	IPv6 routes
statistics	Traffic statistics
vlan	VLAN of IPv6 interface
<vlan_list>	IPv6 interface VLAN list
snooping	Snooping MLD
|	Output modifiers
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
interface	Search by port
sfm-information	Including source filter multicast information from MLD

Example:

```
SISPM1040-582-LRT# show ipv6 neighbor
fe80::2c0:f2ff:fe4f:73d0 via VLAN1: 00-c0-f2-4f-73-d0 Permanent/REACHABLE
SISPM1040-582-LRT# show ipv6 mld snooping detail group-database sfm-information vlan 100

MLD Snooping is disabled to stop snooping MLD control plane.
Multicast streams destined to unregistered MLD groups will be flooding.
Groups in range ff3e::/96 follow MLD SSM registration service model.

MLD Group Database

Switch-1 MLD Group Count: 0
SISPM1040-582-LRT#SISPM1040-582-LRT# show ipv6 statistics system

IPv6 statistics:
  Rcvd:  0 total in 0 byte
         0 local destination, 0 forwarding
         0 header error, 0 address error, 0 unknown protocol
         0 no route, 0 truncated, 0 discarded
  Sent:  10 total in 656 bytes
         14 generated, 0 forwarded
         0 no route, 0 discarded
  Frags: 0 reassemble (0 reassembled, 0 couldn't reassemble)
         0 fragment (0 fragmented, 0 couldn't fragment)
         0 fragment created
  Mcast: 0 received in 0 byte
```

```
        10 sent in 656 bytes
  Bcast: 0 received, 0 sent
SISPM1040-582-LRT#
SISPM1040-582-LRT# show ipv6 mld snooping

MLD Snooping is enabled to start snooping MLD control plane.

Switch-1 MLD Interface Status

MLD snooping VLAN 1 interface is enabled.
Querier status is ACTIVE
RX MLD Query:17 V1Report:0 V2Report:28 V1Done:0
TX MLD Query:17 / (Source) Specific Query:0
Compatibility:Forced MLDv2 / Querier Version:Version 2 / Host Version:Version 2

MLD snooping VLAN 10 interface is enabled.
Querier status is ACTIVE
RX MLD Query:0 V1Report:0 V2Report:0 V1Done:0
TX MLD Query:0 / (Source) Specific Query:0
Compatibility:Forced MLDv1 / Querier Version:Version 1 / Host Version:Version 1

SISPM1040-582-LRT# show ipv6 mld snooping mrouter detail

MLD Snooping is enabled to start snooping MLD control plane.
(MLD proxy for JOIN/LEAVE mechanism is active)
Multicast streams destined to unregistered MLD groups will be flooding.

Switch-1 MLD Router Port Status
Gi 1/2: Static and Dynamic Router Port
Gi 1/3: Static and Dynamic Router Port
Gi 1/4: Static and Dynamic Router Port
Gi 1/5: Static and Dynamic Router Port
Gi 1/10: Dynamic Router Port
SISPM1040-582-LRT# show ipv6 interface vlan 1-10 brief

IPv6 Vlan1 interface is up.
  Internet address is fe80::2c0:f2ff:fe4f:73d0
  Static address is not set
SISPM1040-582-LRT#
```

Messages:

% Invalid DHCPv6 client interface Vlan100

Command: **lacp**

Description: Show LACP configuration/status.

Syntax : **show** lacp on-air
show lacp { internal | statistics | system-id | neighbor }

Parameters:

internal	Internal LACP configuration
neighbor	Neighbor LACP status
on-air	LACP On Air configuration
statistics	Internal LACP statistics
system-id	LACP system id

Example:

```
SISPM1040-582-LRT# show lacp system-id
System Priority: 32768
SISPM1040-582-LRT# show lacp internal
Port                Mode      Key   Role    Timeout  Priority
------------------  --------  ----  ------  -------  --------
Gi 1/1              disabled   Auto  Active  Fast     32768
Gi 1/2              disabled   Auto  Active  Fast     32768
Gi 1/3              disabled   Auto  Active  Fast     32768
Gi 1/4              disabled   Auto  Active  Fast     32768
Gi 1/5              disabled   Auto  Active  Fast     32768
Gi 1/6              disabled   Auto  Active  Fast     32768
Gi 1/7              disabled   Auto  Active  Fast     32768
Gi 1/8              disabled   Auto  Active  Fast     32768
Gi 1/9              disabled   Auto  Active  Fast     32768
Gi 1/10             disabled   Auto  Active  Fast     32768
SISPM1040-582-LRT# show lacp neighbor
SISPM1040-582-LRT#
SISPM1040-582-LRT# show lacp on-air
LACP On Air configuration

Index   Port   Couple IP
----- -------- --------------- ---------------
  1   Disabled    192.168.1.77    192.168.1.78
  2         2    192.168.1.77        0.0.0.0
  3         3         0.0.0.0        0.0.0.0
  4   Disabled         0.0.0.0        0.0.0.0
  5   Disabled         0.0.0.0        0.0.0.0
  6   Disabled         0.0.0.0        0.0.0.0
  7   Disabled         0.0.0.0        0.0.0.0
  8   Disabled         0.0.0.0        0.0.0.0
SISPM1040-582-LRT(config)#
```

Command: **line**

Description: Show TTY line information.

Syntax : **show** line [alive]

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

Example:

```
SISPM1040-582-LRT# show line alive
Line is vty 0.
    * You are at this line now.
    Alive from Telnet.
    Default privileged level is 2.
    Command line editing is 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 36 min 16 sec.
    Idle time is 0 day 0 hour 0 min 0 sec.

SISPM1040-582-LRT# show line
Line is con 0.
    Not alive.
    Default privileged level is 2.
    Command line editing is disabled
    Display EXEC banner is enabled.
    Display Day banner is enabled.
    Terminal width is 80.
            length is 24.
            history size is 32.
            exec-timeout is 10 min 0 second.

    Current session privilege is 0.
    Elapsed time is 0 day 0 hour 0 min 0 sec.
    Idle time is 0 day 0 hour 0 min 0 sec.

Line is vty 0.
    * You are at this line now.
    Alive from Telnet.
    Default privileged level is 2.
    Command line editing is disabled
    Display EXEC banner is enabled.
    Display Day banner is enabled.
-- more --, next page: Space, continue: g, quit: ^C
```

Command: **link-oam**

Description: Show Link OAM configuration.

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

Parameters:

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

Example:

```
SISPM1040-582-LRT# show link-oam status

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

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

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

SISPM1040-582-LRT# show link-oam

    Interface            Control    Mode       Status
--------------------     ---------  -------   -----------
GigabitEthernet    1/1    disabled  passive   non operational
GigabitEthernet    1/2    enabled   passive   non operational
GigabitEthernet    1/3    enabled   active    non operational
GigabitEthernet    1/4    enabled   passive   non operational
GigabitEthernet    1/5    enabled   passive   non operational
GigabitEthernet    1/6    enabled   passive   non operational
GigabitEthernet    1/7    enabled   passive   non operational
-- more --, next page: Space, continue: g, quit: ^C

SISPM1040-582-LRT# show link-oam status

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

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

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

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

Command: **lldp**

Description: Display LLDP neighbors information.

Syntax :

show lldp [interface (<port_type> [<v_port_type_list>])]
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 statistics [interface (<port_type> [<v_port_type_list>])]

Parameters:		
	eee	Display LLDP local and neighbor EEE information.
	interface	Interface to display.
	med	Display LLDP-MED neighbors information.
	neighbors	Display LLDP neighbors information.
	statistics	Display LLDP statistics information.
	*	All switches or All ports
	GigabitEthernet	1 Gigabit Ethernet Port
	media-vlan-policy	Display media VLAN policies.
	remote-device	Display remote device LLDP-MED neighbors information.
	<0~31>	List of policies.
	<port_type_list>	Port list for all port types

Example 1:

```
SISPM1040-582-LRT# show lldp
LLDP Configuration
------------------
TX Interval : 30
TX Hold : 4
TX Delay : 2
TX Reinit : 2
SISPM1040-582-LRT# show lldp neighbors
Local Interface    : GigabitEthernet 1/8
Chassis ID         : 00-C0-F2-4F-7F-CD
Port ID            : 10
Port Description   : GigabitEthernet 1/10
System Name        : SISPM1040-582-LRT
System Description  : Managed Hardened PoE++ Switch (8) 10/100/1000Base-T PoE++Ports + (2)
100/1000Base-X SFP Slot
System Capabilities : Bridge(+)
System Capabilities : Bridge(+)
PoE Type           :
PoE Source         :
PoE Power          :
PoE Priority       :

Local Interface    : GigabitEthernet 1/10
Chassis ID         : 00-C0-F2-4F-7F-CD
Port ID            : 8
Port Description   : GigabitEthernet 1/8
System Name        : SISPM1040-582-LRT
System Description  : Managed Hardened PoE++ Switch (8) 10/100/1000Base-T PoE++Ports + (2)
100/1000Base-X SFP Slot
System Capabilities : Bridge(+)
-- more --, next page: Space, continue: g, quit: ^CW poe 18:45:13 50/poe_send_ping_check#2948:
Warning: The ping ip adress has no same ip domain.
Management Address  : 192.168.1.77 (IPv4)
```

```
PoE Type           : Type 4 PSE Device
PoE Source         : Primary Power Source
PoE Power          : 4.0 [W]
PoE Priority       : Low Priority

SISPM1040-582-LRT#
```

Example 2:

```
SISPM1040-582-LRT# show lldp med remote-device
No LLDP-MED entries found
SISPM1040-582-LRT# show lldp med media-vlan-policy
Policy Id  Application Type         Tag     Vlan ID  L2 Priority  DSCP
0          Voice                   Tagged   1       0            0
1          Softphone Voice          Untagged 1       0            0
SISPM1040-582-LRT# show lldp statistics
LLDP global counters
Neighbor entries was last changed at 2019-10-30T02:15:12+00:00  (6413 secs. ago)
.
Total Neighbors Entries Added    2.
Total Neighbors Entries Deleted  0.
Total Neighbors Entries Dropped  0.
Total Neighbors Entries Aged Out 0.

LLDP local counters
                     Rx       Tx       Rx       Rx         Rx TLV   Rx TLV   Rx TLV
Interface            Frames   Frames   Errors   Discards   Errors   Unknown  Organiz.  Aged
---------             ------   ------   ------   --------  ------   -------  --------  ----
GigabitEthernet 1/1    6414     6414     0        0         0        0        6     44      0
GigabitEthernet 1/2    0        219      0        0         0        0        0      0
GigabitEthernet 1/3    0        217      0        0         0        0        0      0
GigabitEthernet 1/4    0        217      0        0         0        0        0      0
GigabitEthernet 1/5    0        220      0        0         0        0        0      0
GigabitEthernet 1/6    0        219      0        0         0        0        0      0
GigabitEthernet 1/7    0        0        0        0         0        0        0      0
GigabitEthernet 1/8    0        232      0        0         0        0        0      0
GigabitEthernet 1/9    6488     6490     0        0         0        0        6    488      0
GigabitEthernet 1/10   0        0        0        0         0        0        0      0
SISPM1040-582-LRT#
SISPM1040-582-LRT# show lldp eee
Local Interface    : GigabitEthernet 1/8
EEE not enabled for this interface

Local Interface    : GigabitEthernet 1/10
EEE not supported for this interface

SISPM1040-582-LRT#
```

Messages:

% No such switch ID: 2

No policies defined

No LLDP-MED entries found

Command: **logging**

Description: Show System logging messages.

Syntax :

show logging <log_id> [switch <switch_list>]

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

show logging flash [category { debug | system | application }] [level { informational | notice | warning | error }]

Parameters:		
	<1-4294967295>	Logging ID
	alert	Severity 1: Action must be taken immediately
	crit	Severity 2: Critical conditions
	debug	Severity 7: Debug-level messages
	emerg	Severity 0: System is unusable
	error	Severity 3: Error conditions
	flash	Logging message on Flash
	info	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
	<line>	String to match output lines
	<line>	String to match input lines
	switch	Switch
	category	Category of logging message
	level	Severity level
	application	Application category
	debug	Debug category
	system	System category
	<switch_list>	Switch ID list in 1

Example 1:

```
SISPM1040-582-LRT# show logging 5
Switch : 1
ID     : 5
Level  : Warning
Time   : 2011-01-01T00:00:10+00:00
Message:
DI 1 change to abnormal
SISPM1040-582-LRT# show logging crit
Switch logging host mode is disabled
Switch logging host address is null
Switch logging host port is 514
Number of entries on Switch 1:
Emerg       : 0
Alert       : 0
Crit        : 0
Error       : 0
Warning     : 14
Notice      : 2
Info        : 10
Debug       : 0
All         : 26
```

```
SISPM1040-582-LRT# show logging
Switch logging host mode is disabled
Switch logging host address is null
Switch logging host port is 514
Number of entries on Switch 1:
Emerg       : 0
Alert       : 0
Crit        : 0
Error       : 0
Warning     : 40
Notice      : 3
Info        : 45
Debug       : 0
All         : 88

ID    Level   Time                        Message                                  iPush Status
----  ------  --------------------------  ---------------------------------------  ------------
1   Warning  2011-01-01T00:00:12+00:00    DI 1 change to abnormal
2   Info     2011-01-01T00:00:12+00:00    Password of user 'admin' was changed
3   Warning  2011-01-01T00:00:12+00:00    SFP module inserted on port 9
4   Warning  2011-01-01T00:00:12+00:00    SFP module inserted on port 10
5   Info     2011-01-01T00:00:12+00:00    topologyChange
6   Warning  2011-01-01T00:00:12+00:00    Switch just made a warm boot
7   Warning  2011-01-01T00:00:13+00:00    Link up on port 2
8   Info     2011-01-01T00:00:14+00:00    topologyChange
9   Warning  2011-01-01T00:00:26+00:00    Port 1 PoE PD on
10  Warning  2011-01-01T00:00:26+00:00    Port 3 PoE PD on
11  Warning  2011-01-01T00:00:28+00:00    Port 4 PoE PD on
-- more --, next page: Space, continue: g, quit: ^C
```

Example 2:

```
SISPM1040-582-LRT# show logging 1 exclude 5-9
Switch : 1
ID     : 1
Level  : Warning
Time   : 2011-01-01T00:00:13+00:00
Message:
Link up on port 8
SISPM1040-582-LRT# show logging 1 include 5-7
Switch : 1
ID     : 1
Level  : Warning
Time   : 2011-01-01T00:00:13+00:00
Message:
Link up on port 8
SISPM1040-582-LRT# show logging flash level error category application
No entries found
SISPM1040-582-LRT# show logging flash level error category debug
Category    | Level   | Time                      | Message
-------------------------------------------------------------------------------
Debug       | Error       | 2011-01-02T21:00:48+00:00 | E web 21:00:48 82/handler_ip_config#450: Error:
Set IPv4 conf, vid 10: Address conflict
SISPM1040-582-LRT# show logging flash level error category system
No entries found
SISPM1040-582-LRT#
```

Messages:
Cannot find syslog ID 57 on Switch 1.
No entries found
% No such switch ID: 2

Command: **loop-protect**

Description: Show Loop protection configuration.

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

Parameters:

*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
<port_type_list>	Port list in 1/1-10

Example:

```
SISPM1040-582-LRT# show loop-protect interface GigabitEthernet 1/10

Loop Protection Configuration
=====================================
Loop Protection   : Disable
Transmission Time : 5 sec
Shutdown Time     : 180 sec

GigabitEthernet 1/10
------------------------------
    Loop protect mode is enabled.
    Action is shutdown.
    Transmit mode is enabled.
    No loop.
    The number of loops is 0.
    Status is down.
SISPM1040-582-LRT# show loop-protect interface GigabitEthernet 1/10

Loop Protection Configuration
=====================================
Loop Protection   : Enable
Transmission Time : 5 sec
Shutdown Time     : 180 sec


------------------------------
    Loop protect mode is enabled.
    Action is log only.
    Transmit mode is disabled.
    No loop.
    The number of loops is 0.
    Status is down.
SISPM1040-582-LRT# show loop-protect interface GigabitEthernet 1/1

Loop Protection Configuration
=====================================
Loop Protection   : Enable
Transmission Time : 5 sec
Shutdown Time     : 180 sec

GigabitEthernet 1/1
------------------------------
    Loop protect mode is enabled.
    Actions are both of shutdown and log.
    Transmit mode is enabled.
    No loop.
    The number of loops is 0.
    Status is down.
SISPM1040-582-LRT#
```

Command: **mac**

Description: Show Mac Address Table information.

Syntax : **show** mac address-table [conf | static | aging-time | { { learning | count } [interface (<port_type> [<v_port_type_list>]) | vlan <v_vlan_id_2>] } | { address <v_mac_addr> [vlan <v_vlan_id>] } | vlan <v_vlan_id_1> | interface (<port_type> [<v_port_type_list_1>])]

Parameters:

|	Output modifiers
address	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
<mac_addr>	48 bit MAC address: xx:xx:xx:xx:xx:xx
|	Output modifiers
vlan	VLAN lookup
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
<port_type_list>	Port list for all port types
<vlan_id>	VLAN IDs 1-4095

Example:

```
SISPM1040-582-LRT# show mac address-table static
Type    VID  MAC Address       Ports
Static  1    00:c0:f2:49:38:ff   CPU
Static  1    33:33:00:00:00:01  GigabitEthernet 1/1-10 CPU
Static  1    33:33:00:00:00:02  GigabitEthernet 1/1-10 CPU
Static  1    33:33:ff:49:38:ff  GigabitEthernet 1/1-10 CPU
Static  1    ff:ff:ff:ff:ff:ff  GigabitEthernet 1/1-10 CPU
SISPM1040-582-LRT# show mac address-table learning
Port                Learning
GigabitEthernet 1/1 Auto
GigabitEthernet 1/2 Auto
GigabitEthernet 1/3 Auto
GigabitEthernet 1/4 Auto
GigabitEthernet 1/5 Auto
GigabitEthernet 1/6 Auto
GigabitEthernet 1/7 Auto
GigabitEthernet 1/8 Auto
GigabitEthernet 1/9 Auto
GigabitEthernet 1/10 Auto
SISPM1040-582-LRT# show mac address-table
Type    VID  MAC Address       Ports
Dynamic 1    00:1b:11:b2:6d:4b  GigabitEthernet 1/1
Static  1    00:c0:f2:49:38:ff   CPU
Static  1    33:33:00:00:00:01  GigabitEthernet 1/1-10 CPU
Static  1    33:33:00:00:00:02  GigabitEthernet 1/1-10 CPU
Static  1    33:33:ff:49:38:ff  GigabitEthernet 1/1-10 CPU
Static  1    ff:ff:ff:ff:ff:ff  GigabitEthernet 1/1-10 CPU

SISPM1040-582-LRT# show mac address-table aging-time
MAC Age Time: 50000
SISPM1040-582-LRT#
```

Command: **map-api-key**

Description: Show Google Maps key configuration.

Syntax : **show** map-api-key

Parameters: <cr>

Example:

```
SISPM1040-582-LRT# show map-api-key
Key    :
SISPM1040-582-LRT#
```

Command: **mep**

Description: Show Maintenance Entity Point configuration.

Syntax : **show** mep [<inst>] [peer | cc | lm | dm | lt | lb | tst | aps | client | ais | lck | pm | syslog | tlv | bfd | rt | lst | lm-avail] [lm-hli] [detail]

Parameters:

<range_list>	The range of MEP instances
ais	Show AIS state
aps	Show APS state
bfd	show BFD state
cc	Show CC state
client	Show Client state
detail	Show detailed state including configuration information.
dm	Show DM state
lb	Show LB state
lck	Show LCK state
lm	Show LM state
lm-avail	show Availability state
lm-hli	show LM HLI state
lst	show LST state
lt	Show LT state
peer	Show peer mep state
pm	Show PM state
rt	show RT state
syslog	Show Syslog state
tlv	show TLV state
tst	Show TST state
|	Output modifiers
<range_list>	The range of MEP instances
detail	Show detailed state including configuration information.
lm-hli	show LM HLI state
<cr>	

Example:

```
SISPM1040-582-LRT# show mep

MEP state is:
  Inst  cLevel  cMeg  cMep  cAis  cLck cLoop cConf  cDeg  cSsf  aBlk  aTsd  aTsf
  Peer MEP  cLoc  cRdi cPeriod cPrio
     1   False False False False False False False False False False False False
     2   False False False False False False False False False False False False
     3   False False False False False False False False False False False False
SISPM1040-582-LRT#

SISPM1040-582-LRT# show mep dm

MEP DM state is:

RxTime : Rx Timeout
RxErr :  Rx Error
AvTot :  Average delay Total
AvN :    Average delay last N
Min :    Min Delay value
Max :    Max Delay value
AvVarT : Average delay Variation Total
AvVarN : Average delay Variation last N
MinVar : Min Delay Variation value
MaxVar : Max Delay Variation value
OF  :    Overflow. The number of statistics overflow.

           Inst      Tx      Rx   RxTime    RxErr     AvTot      AvN      M
in      Max  AvVarTot   AvVarN    MinVar   MaxVar  OF Unit
1-Way FtoN     1       0       0       0       0        0        0
 0       0        0       0        0       0   0   us
1-Way NtoF     1       0       0       0       0        0        0
 0       0        0       0        0       0   0   us
-- more --, next page: Space, continue: g, quit: ^C

SISPM1040-582-LRT# show mep detail

MEP state is:
  Peer MEP  cLoc  cRdi cPeriod cPrio
     1   False False False False False False False False False False False False

     2   False False False False False False False False False False False False

     3   False False False False False False False False False False False False


MEP Basic Configuration is:
  Inst  Mode  Voe  Vola  Direct                Port    Dom  Level      Forma
t            Name           Meg id  Mep id   Vid  Flow       Eps
    MAC
     1   Mep             Down    GigabitEthernet 1/1   Port      0      ITU IC
C                    ICC000MEG0000       1     0     -          0  00-C0-F2-4
9-39-31
     2   Mep             Down    GigabitEthernet 1/1   Port      0      ITU IC
C                    ICC000MEG0000       1     0     -          0  00-C0-F2-4
9-39-31
     3   Mep             Down    GigabitEthernet 1/2   Port      1      ITU IC
C                    ICC000MEG0000       1     1     -          0  00-C0-F2-4
9-39-32

SISPM1040-582-LRT# show mep tst
```

```
MEP TST state is:
    Inst     TX frame count     RX frame count     RX rate     Test time
       1                  0                  0           0            0
       2                  0                  0           0            0
       3                  0                  0           0            0

SISPM1040-582-LRT# show mep tlv

MEP CCM TLV Status is:
    Inst  Peer MEP     OS OUI   OS Sub   OS Value   PS Value   IS Value   OS RX   PS RX   IS RX
       1
       2
       3         2   00-00-00        0          0          0          0   False   False   False

SISPM1040-582-LRT#
```

Command: **monitor**

Description: Show Monitoring of different system events.

Syntax : **show** monitor [session { <session_number> | all | remote }]

Parameters:

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

```
SISPM1040-582-LRT# show monitor session remote

Session 1
---------
Mode                    : Enabled
Type                    : Remote Source Session
Dest RMIRROR VLAN        : 200
Reflector Port           : Gi 1/1
Source VLAN(s)           : 1-10,20,30,100-200
Source Ports             :
CPU Port                : both
SISPM1040-582-LRT# show monitor session 1

Session 1
---------
Mode                    : Enabled
Type                    : Mirror
Source VLAN(s)           : 1,10-300
CPU Port                : both
SISPM1040-582-LRT#
```

Command: **mrp**

Description: Show Media Redundancy Protocol status. For MRP config information see section 27 MRP Pre-Requisites and Application Examples on page 246.

Syntax : **show** mrp <domainId>
show mrp <domainId> diag
show mrp <domainId> ringport [{ primary | secondary }]

Parameters:

<1-2>	DomainID to display status of
|	Output modifiers
diag	Diagnostic output for MRP Domain
ringport	Ringport status for MRP Domain
primary	Show status for primary Ringport
secondary	Show status for secondary Ringport
<cr>	

Example:

```
SISPM1040-582-LRT# show mrp 1 ringport
Primary Ring Port ID:      1
Status:                   Not connected
Secondary Ring Port ID:    2
Status:                   Forwarding
SISPM1040-582-LRT# show mrp 1
Operational:
  Role:                     Client
  Status:                   Enabled
  Primary Ring Port State:   Not connected
  Secondary Ring Port State: Forwarding
Domain:
  Admin Role:               Client
  Name:                     Domain1
  UUID:                     Default
  Primary Ring Port ID:      1
  Secondary Ring Port ID:    2
  VLAN ID:                  10
Client:
  Link Down Interval, ms:    20
  Link Up Interval, ms:      20
  Link Change Count:         4
  BLOCKED state supported:   Enabled
SISPM1040-582-LRT# show mrp 1 diag
Status                          : 0x00()
Error                           : 0x01(No error)
Transitions                      :           0
MRP Transmitted Frames           :           0
MRP Received Frames              :           0
MRP Received Errors              :           0
MRP Received Unrecognized        :           0
Tx Error Total                  :           0
Rx Vlan Frames Total             :           0
Rx Test Frames Total             :           0
Rx Topology Change Frames Total  :           0
Rx Link Change Frames Total      :           0
ACL counter 0                   :           0
ACL counter 1                   :           0
Round Trip Delay Minimum, ms     :           0
Round Trip Delay Average, ms     :           0
Round Trip Delay Maximum, ms     :           0
```

```
Ring Open Count                :          0
Lost frames by sequence id      :          0
Mixed frames by sequence id     :          0
Received with different UUID    :          0
Loop detected                  :          0
SISPM1040-582-LRT#
```

Messages:
Error: Domain not found
W mrp 150/mrp_icli_show_ringport#166: Warning: Show MRP Ringport: no valid configuration found for domain Id 1

Command: **mvr**

Description: Display 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:

detail	Detail information/statistics of MVR group database
group-database	Multicast group database from MVR
name	Search by MVR name
vlan	Search by VLAN

Example:

```
SISPM1040-582-LRT# show mvr
MVR is currently disabled, please enable MVR to start group registration.
SISPM1040-582-LRT# show mvr

MVR is now enabled to start group registration.

Switch-1 MVR-IGMP Interface Status

IGMP MVR VLAN 10 (Name is not set) 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>

IGMP MVR VLAN 20 (Name is not set) 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 10 (Name is not set) 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>

MLD MVR VLAN 20 (Name is not set) 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>
SISPM1040-582-LRT#
```

Command: **always-on-poe**

Description: Show Always-On PoE Status. If enabled, during a switch restart or firmware upgrade, when the switch warm restarts, it will continue supplying PoE power to the PDs (FW VB7.10.2658 and after). FW VB7.20.0039 modified "Always On PoE" software behavior; the feature is enabled and shown on web UI after upgrading FW to FW VB7.20.0039 or above (default value is off).

Syntax : **show** always-on-poe

Parameters:

Example:

```
SISPM1040-582-LRT# show always-on-poe
Always-on PoE Status : Disable
SISPM1040-582-LRT#

SISPM1040-582-LRT(config)# always-on-poe
Always-on PoE Status : Enable
SISPM1040-582-LRT(config)#
```

Command: **ntp**

Description: Show NTP status.

Syntax : **show** ntp status

Parameters:

Example:

```
SISPM1040-582-LRT# show ntp status
NTP Mode : enabled
Idx   Server IP host address (a.b.c.d) or a host name string
---   ----------------------------------------------------
1     192.168.1.30
2
3
4
5
SISPM1040-582-LRT#
```

Command: **platform**

Description: Show platform debug and phy configuration. **Note**: Debug commands are only for use by, or at the direction of Technical Support.

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

Parameters: debug Debug command setting
phy PHYs' information

Example:

```
SISPM1040-582-LRT# show platform debug

Platform debug command function is denied.

SISPM1040-582-LRT# show platform phy
Port   API Inst   WAN/LAN/1G Mode      Duplex     Speed      Link
----   ---------  ---------  ----      ------     -----      ----
1      Default    1G         PD        -          -         ,Yes
2      Default    1G         PD        -          -         ,No
3      Default    1G         PD        -          -         ,No
4      Default    1G         PD        -          -         ,Yes
5      Default    1G         PD        -          -         ,No
6      Default    1G         PD        -          -         ,No
7      Default    1G         PD        -          -         ,Yes
8      Default    1G         PD        -          -         ,No
9      Default    1G         PD        -          -         ,No
10     Default    1G         PD        -          -         ,No
SISPM1040-582-LRT# show platform debug

Platform debug command function is denied.

SISPM1040-582-LRT# platform debug allow

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

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

SISPM1040-582-LRT# show platform debug

Platform debug command function is allowed.

SISPM1040-582-LRT#
```

Command: **poe**

Description: Show Power Over Ethernet configuration.

Syntax :

show poe config [interface (<port_type> [<v_port_type_list>])]
show poe power-delay [interface (<port_type> [<v_port_type_list>])]
show poe profile [id <has_id>]
show poe reboot
show poe status [interface (<port_type> [<v_port_type_list>])]
show poe { auto-check | auto-power-reset } [interface (<port_type> [<v_port_type_list>])]

Parameters:		
	auto-power-reset	Show PoE Auto Power Reset configuration.
	config	Display PoE (Power Over Ethernet) config for the switch.
	power-delay	Display PoE (Power Over Ethernet) power delay for the switch.
	profile	poe scheduling profile
	reboot	poe reboot scheduling
	status	Display PoE (Power Over Ethernet) status for the switch.
	|	Output modifiers
	interface	
	*	All switches or All ports
	GigabitEthernet	1 Gigabit Ethernet Port
	<port_type_list>	Port list in 1/1-10
	id	poe scheduling profile id
	<1-16>	profile id from 1 to 16
	<cr>	

Example 1: At FW VB7.10.2658 and above.

```
SISPM1040-582-LRT# show poe config
Primary Power Supply [W]     : 480

Port  Mode      Schedule                        Priority  LLDP      Legacy
----  --------  ------------------------------   --------  --------  --------
1     4pair60w  Disable                         Critical  Enabled   Disabled
2     4pair90w  Profile 1                       High      Enabled   Disabled
3     8023bt    Profile 1                       Low       Enabled   Enabled
4     Disabled  Profile 2                       Low       Enabled   Enabled
5     8023bt    Disable                         Low       Enabled   Enabled
6     Disabled  Disable                         Low       Enabled   Enabled
7     8023bt    Disable                         Low       Enabled   Enabled
8     8023bt    Disable                         Low       Enabled   Disabled

GigabitEthernet 1/9 does not have PoE support
GigabitEthernet 1/10 does not have PoE support
SISPM1040-582-LRT#
SISPM1040-582-LRT# show poe config <before FW VB7.10.2658>
Primary Power Supply [W]     : 480

Port  Mode      Schedule                        Priority  Max. Power [W]
----  --------  ------------------------------   --------  --------------
1     Enabled   Disable                         High      30.0
2     Enabled   Disable                         Critical  90.0
3     Enabled   Disable                         High      60.0
4     Enabled   Disable                         Low       60.0
5     Enabled   Disable                         Low       60.0
6     Enabled   Disable                         Low       60.0
7     Enabled   Disable                         Low       60.0
```

```
8     Enabled   Disable                          Low       60.0
GigabitEthernet 1/9 does not have PoE support
GigabitEthernet 1/10 does not have PoE support
SISPM1040-582-LRT# show poe status
Interface              PD Class  Port Status                          Pwr
Req Pwr Alloc Power   Current  Priority
                                                                    Used
[W] Used[W]   Used[W] Used[mA]
---------------------- --------- ---------------------------------------- ----
--- --------- ------- -------- --------
GigabitEthernet 1/1     -        No PD detected                        0
    0        0.0     0       High
GigabitEthernet 1/2     -        No PD detected                        0
    0        0.0     0       Critical
GigabitEthernet 1/3     -        No PD detected                        0
    0        0.0     0       High
GigabitEthernet 1/4     1        PoE turned ON                         60
    60       1.6     35      Low
GigabitEthernet 1/5     -        No PD detected                        0
    0        0.0     0       Low
GigabitEthernet 1/6     -        No PD detected                        0
    0        0.0     0       Low
GigabitEthernet 1/7     1        PoE turned ON                         60
    60       1.6     36      Low
GigabitEthernet 1/8     -        No PD detected                        0
    0        0.0     0       Low
Total Power Request :   120.0 [W]
Total Power Alloctaed : 120.0 [W]
Total Power Used :      3.2 [W]
Total Current Used :    71 [mA]
Capacitor Detection : No
```

Example 2: At default PoE config; added at FW v7.10.2294.

```
SISPM1040-582-LRT# show poe config
Primary Power Supply [W]     : 480

Port  Mode      Schedule                         Priority  Max. Power [W]
----  --------  -------------------------------   --------  --------------
1     POH       Disable                          Low       60.0
2     POH       Disable                          Low       60.0
3     POH       Disable                          Low       60.0
4     POH       Disable                          Low       60.0
5     POH       Disable                          Low       60.0
6     POH       Disable                          Low       60.0
7     POH       Disable                          Low       60.0
8     POH       Disable                          Low       60.0
GigabitEthernet 1/9 does not have PoE support
GigabitEthernet 1/10 does not have PoE support
SISPM1040-582-LRT# show poe config
Primary Power Supply [W]     : 480

Port  Mode      Schedule                         Priority  LLDP      Legacy
----  ---------  -------------------------------   --------  --------  --------
1     Disabled   Profile 1                         High      Enabled   Disabled
2     8023bt90w  Profile 1                         Critical  Enabled   Disabled
3     4pair90w   Profile 1                         High      Enabled   Disabled
4     8023bt30w  Profile 1                         Low       Enabled   Disabled
5     4pair60w   Disable                           Low       Enabled   Disabled
```

```
6     8023bt60w  Disable                          Low       Enabled   Disabled
7     force60w   Profile 1                        Low       Enabled   Disabled
8     8023bt60w  Disable                          Low       Enabled   Disabled
GigabitEthernet 1/9 does not have PoE support
GigabitEthernet 1/10 does not have PoE support
SISPM1040-582-LRT# conf terminal
SISPM1040-582-LRT(config)# interface GigabitEthernet 1/1
SISPM1040-582-LRT(config-if)# poe mode ?
    2-pair     Set mode to PoE 2-pair (Maximum power 30.0 W)
    4-pair     Set mode to PoE 4-pair (Maximum power 60.0 W)
    disable    Set mode to PoE Disable
    enable     Set mode to PoE Enable (Maximum power 90.0 W)
SISPM1040-582-LRT(config-if)#
```

```
SISPM1040-582-LRT# show poe config
Primary Power Supply [W]     : 480

Port  Mode      Schedule                          Priority  Max. Power [W]
----  --------  ----------------------------    --------  --------------
1     Enabled   Disable                           Critical  30.0
2     2-pair    Profile 1                         High      30.0
3     4-pair    Profile 1                         High      30.0
4     4-pair    Profile 2                         Low       30.0
5     4-pair    Disable                           Low       30.0
6     4-pair    Disable                           Low       30.0
7     2-pair    Disable                           Low       30.0
8     Enabled   Disable                           Low       30.0
GigabitEthernet 1/9 does not have PoE support
GigabitEthernet 1/10 does not have PoE support
SISPM1040-582-LRT#
```

Example 3:

```
SISPM1040-582-LRT# show poe auto-power-reset

Ping Check : Enabled

Port  Ping IP Address Start up Interval Retry  Failure Log    Failure Action    Reboot Max.Reboot
                      Time      Time     Time                                   Time   Times
----  --------------- -------- -------- ----- ------------ ----------------- ------ ------
1     192.168.1.77    45       30       3     error=0,total=0   Nothing          15     3
2     192.168.1.99    50       30       1     error=0,total=0   Nothing          15     3
3     192.168.1.100   30       30       3    error=0,total=0  Reboot Remote PD   10     5
4     0.0.0.0        60       30       3     error=0,total=0   Nothing           15     3
5     192.168.1.100   60       30       2     error=0,total=0  Nothing           15     3
6     0.0.0.0        60       30       3     error=0,total=0   Nothing           15     3
7     0.0.0.0        60       30       3     error=0,total=0   Nothing           15     3
8     192.254.107.168 60       30       3     error=0,total=0  Nothing           15     3
GigabitEthernet 1/9 does not have PoE support
GigabitEthernet 1/10 does not have PoE support
SISPM1040-582-LRT#
```

Example 4 : With default PoE config at FW v7.20.0039:

```
SISPM1040-582-LRT# show poe config
Primary Power Supply [W]     : 480

Port  Mode      Schedule                          Priority  LLDP      Legacy
----  --------  --------------------------------   --------  --------  --------
1     8023bt    Disable                           Low       Enabled   Disabled
2     8023bt    Disable                           Low       Enabled   Disabled
3     8023bt    Disable                           Low       Enabled   Disabled
4     8023bt    Disable                           Low       Enabled   Disabled
5     8023bt    Disable                           Low       Enabled   Disabled
6     8023bt    Disable                           Low       Enabled   Disabled
7     8023bt    Disable                           Low       Enabled   Disabled
8     8023bt    Disable                           Low       Enabled   Disabled

GigabitEthernet 1/9 does not have PoE support
GigabitEthernet 1/10 does not have PoE support
SISPM1040-582-LRT#
```

Example 5 : With typical PoE config at FW v7.20.0039:

```
SISPM1040-582-LRT# show poe config
Primary Power Supply [W]     : 480

Port  Mode      Schedule                          Priority  LLDP      Legacy
----  --------  --------------------------------   --------  --------  --------
1     8023bt    Disable                           Critical  Enabled   Disabled
2     8023bt    Profile 1                         High      Enabled   Disabled
3     4pair90w  Profile 1                          Low       Enabled   Disabled
4     4pair60w  Profile 2                          Low       Enabled   Disabled
5     8023bt    Disable                           Low       Enabled   Disabled
6     8023bt    Disable                           Low       Enabled   Enabled
7     8023bt    Disable                           Low       Enabled   Enabled
8     8023bt    Disable                           Low       Enabled   Disabled

GigabitEthernet 1/9 does not have PoE support
GigabitEthernet 1/10 does not have PoE support
SISPM1040-582-LRT#
```

Messages:
W poe 00:59:23 50/poe_send_ping_check#2405: Warning: The ping ip adress has no same ip domain.

Command: **port-security**

Description: Show Port Security status. Port Security is a module with no direct configuration.

Syntax : **show** port-security port [interface (<port_type> [<v_port_type_list>])]
show port-security switch [interface (<port_type> [<v_port_type_list>])]

Parameters:

port	Show MAC Addresses learned by Port Security
switch	Show Port Security status.
|	Output modifiers
interface	
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
<port_type_list>	Port list in 1/1-10

Example:

```
SISPM1040-582-LRT# show port-security port
GigabitEthernet 1/1
-------------------
MAC Address        VID   State      Added                     Age/Hold Time
-----------------  ----  ----------  ------------------------  -------------
<none>

GigabitEthernet 1/2
-------------------
MAC Address        VID   State      Added                     Age/Hold Time
-----------------  ----  ----------  ------------------------  -------------
<none>

GigabitEthernet 1/3
-------------------
MAC Address        VID   State      Added                     Age/Hold Time
-----------------  ----  ----------  ------------------------  -------------
<none>

GigabitEthernet 1/4
-------------------
MAC Address        VID   State      Added                     Age/Hold Time
-----------------  ----  ----------  ------------------------  -------------
SISPM1040-582-LRT# show port-security switch
Users:
L = Limit Control
8 = 802.1X
V = Voice VLAN
Interface              Users  State         MAC Cnt
---------------------  -----  ------------  -------
GigabitEthernet 1/1     ---    No users           0
GigabitEthernet 1/2     ---    No users           0
GigabitEthernet 1/3     ---    No users           0
GigabitEthernet 1/4     ---    No users           0
GigabitEthernet 1/5     ---    No users           0
GigabitEthernet 1/6     ---    No users           0
GigabitEthernet 1/7     ---    No users           0
GigabitEthernet 1/8     ---    No users           0
GigabitEthernet 1/9     ---    No users           0
GigabitEthernet 1/10    ---    No users           0
SISPM1040-582-LRT#
```

Command: **privilege**

Description: Display command privilege levels.

Syntax : **show** privilege <cr>

Parameters: |

begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match

Example:

```
SISPM1040-582-LRT# show privilege?
   privilege    Display command privilege
   <cr>
SISPM1040-582-LRT# show privilege
SISPM1040-582-LRT#
```

Command: **process**

Description: Show process data.

Syntax : **show** process <cr>

Parameters:

list	show process list
load	show process load
detail	optionally show thread call stack

Example:

```
SISPM1040-582-LRT# show process load
Load average(100ms, 1s, 10s):   8%,   6%,   7%
SISPM1040-582-LRT# show process list
ID  State SetPrio CurPrio Name                  1sec Load 10sec Load Stack Base Size  Used
--- ----- ------- ------- ---------------------- --------- ---------- ---------- ----- -----
DSR N/A       N/A     N/A DSR Context                N/A        N/A        N/A   N/A   N/A
145 Sleep       7       7 pthread.00001002           N/A        N/A 0x8405efc8 32404  2660
  3 Sleep       6       6 Network alarm support      N/A        N/A 0x84cd10a8  4096  1728
  4 Sleep       7       7 Network support            N/A        N/A 0x84ccede8  8192  2416
  5 Susp       15      15 pthread.00000800           N/A        N/A 0x84ce5da0  7828   300
  6 Sleep       7       7 Main                       N/A        N/A 0x83cd86e4 16384   508
  7 Sleep       7       7 Critd                      N/A        N/A 0x8403c334  8192   636
  8 Run         8       8 Configuration              N/A        N/A 0x814018f8  8192  1076
  9 Sleep       7       7 ICFG Loader                N/A        N/A 0x82efa2cc 65536  8676
SISPM1040-582-LRT# show process list detail
Version      : SISPM1040-582-LRT (standalone) VB7.20.0191
Build Date   : 2023-10-16T18:36:32+08:00
Warning: Return addresses are highly unreliable (code seems to be compiled with -O2)
ID  State SetPrio CurPrio Name                  1sec Load 10sec Load Stack Base Size  Used
--- ----- ------- ------- ---------------------- --------- ---------- ---------- ----- -----
DSR N/A       N/A     N/A DSR Context                N/A        N/A        N/A   N/A   N/A
  3 Sleep       6       6 Network alarm support      N/A        N/A 0x84fbfa30  4096  1728
#0  0x807bdfc0
#1  0x807bf9f4
#2  0x807d35dc
#3  0x807bba48
#4  0x807bba1c
  4 Sleep       7       7 Network support            N/A        N/A 0x84fbd770  8192  2424
#0  0x807bdfc0
#1  0x807bf6ec
#2  0x807d16ec
-- more --, next page: Space, continue: g, quit: ^C
```

Command: **ptp**

Description: Show Precision time Protocol (1588).

Syntax :

show ptp <clockinst> local-clock
show ptp <clockinst> slave-cfg
show ptp <clockinst> slave-table-unicast
show ptp <clockinst> { default | current | parent | time-property | filter | servo | servo-extended | clk | ho | uni | master-table-unicast | slave | { { port-state | port-ds | wireless | foreign-master-record } [interface (<port_type> [<v_port_type_list>])] } }
show ptp ext
show ptp system-time

Parameters:

<0-3>	Show various PTP data for an instance.
ext	Show 1PPS and External clock output config and vcxo frequency rate adjustment option.
system-time	Show the PTP <-> system time synchronization mode.
clk	Show PTP slave clock options parameters.
current	Show PTP current data set (IEEE1588 paragraph 8.2.2).
default	Show PTP default data set (IEEE1588 paragraph 8.2.1).
filter	Show PTP filter parameters.
foreign-master-record	Show PTP port foreign masters.
ho	Show PTP slave holdover parameters.
local-clock	Show local clock current time
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.
servo	Show PTP servo parameters.
servo-extended	Show PTP servo extended 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.
wireless	Show PTP port wireless parameters.

Example:

```
SISPM1040-582-LRT# show ptp 1 default
ClockInst  DeviceType  2StepFlag  Ports  vtss_appl_clock_identity    Dom
---------  ----------  ---------  -----  --------------------------  ---
1                Inactive
SISPM1040-582-LRT# show ptp ext
PTP External One PPS mode: Disable, Clock output enabled: False, frequency : 1,
Preferred adj method: LTC frequency
ISPM1040-582-LRT# show ptp 0 uni
index  duration  ip_address      grant  CommState
-----  --------  ---------------  -----  ---------
0      100       0.0.0.0         0      IDLE
1      100       0.0.0.0         0      IDLE
2      100       0.0.0.0         0      IDLE
3      100       0.0.0.0         0      IDLE
4      100       0.0.0.0         0      IDLE
```

```
SISPM1040-582-LRT# show ptp 0 parent
ParentPortIdentity      port  Pstat  Var  ChangeRate
----------------------  ----  -----  ---  ----------
00:c0:f2:ff:fe:4f:73:d0 0     False  0    0

GrandmasterIdentity      GrandmasterClockQuality    Pri1  Pri2
-----------------------  -------------------------  ----  ----
00:c0:f2:ff:fe:4f:73:d0  Cl:251 Ac:Unknwn Va:65535  128   128
SISPM1040-582-LRT#
```

Command: **pvlan**

Description: Show PVLAN configuration.

Syntax : **show** pvlan [<pvlan_list>]
show pvlan isolation [interface (<port_type> [<plist>])]

Parameters: <range_list> PVLAN ID to show configuration for the specified range.
isolation Show isolation configuration.
<cr>

Example:

```
SISPM1040-582-LRT# show pvlan 1-10
PVLAN ID  Ports
--------  --------------------------------------------------------------------------------
1         GigabitEthernet 1/1, GigabitEthernet 1/2, GigabitEthernet 1/3,
          GigabitEthernet 1/4, GigabitEthernet 1/5, GigabitEthernet 1/6,
          GigabitEthernet 1/7, GigabitEthernet 1/8, GigabitEthernet 1/9,
          GigabitEthernet 1/10
SISPM1040-582-LRT# show pvlan isolation ?
    interface    List of port type and port ID, ex, Fast 1/1 Gigabit 2/3-5
                 Gigabit 3/2-4 Tengigabit 4/6
    <cr>
SISPM1040-582-LRT# show pvlan isolation
Port                            Isolation
------------------------------  ---------
GigabitEthernet 1/1               Disabled
GigabitEthernet 1/2               Disabled
GigabitEthernet 1/3               Disabled
GigabitEthernet 1/4               Disabled
GigabitEthernet 1/5               Disabled
GigabitEthernet 1/6               Disabled
GigabitEthernet 1/7               Disabled
GigabitEthernet 1/8               Disabled
GigabitEthernet 1/9               Disabled
GigabitEthernet 1/10              Disabled
SISPM1040-582-LRT#
```

Command: **qos**

Description: Show Quality of Service config.

Syntax :

show qos [{ interface [(<port_type> [<port>])] } | wred | { maps [dscp-cos] [dscp-ingress-translation] [dscp-classify] [cos-dscp] [dscp-egress-translation] } | storm | { qce [<qce>] }]

Parameters:

|	Output modifiers
interface	Interface
maps	Global QoS Maps/Tables
qce	QoS Control Entry
storm	Storm policer
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
<port_type_list>	Port list for all port types
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
<1-256>	QCE ID
<cr>	

Example:

```
SISPM1040-582-LRT# show qos
interface GigabitEthernet 1/1
 qos cos 0
 qos pcp 0
 qos dpl 0
 qos dei 0
 qos trust tag disabled
 qos map tag-cos pcp 0 dei 0 cos 1 dpl 0
 qos map tag-cos pcp 0 dei 1 cos 1 dpl 1
 qos map tag-cos pcp 1 dei 0 cos 0 dpl 0
 qos map tag-cos pcp 1 dei 1 cos 0 dpl 1
 qos map tag-cos pcp 2 dei 0 cos 2 dpl 0
 qos map tag-cos pcp 2 dei 1 cos 2 dpl 1
 qos map tag-cos pcp 3 dei 0 cos 3 dpl 0
 qos map tag-cos pcp 3 dei 1 cos 3 dpl 1
 qos map tag-cos pcp 4 dei 0 cos 4 dpl 0
 qos map tag-cos pcp 4 dei 1 cos 4 dpl 1
 qos map tag-cos pcp 5 dei 0 cos 5 dpl 0
 qos map tag-cos pcp 5 dei 1 cos 5 dpl 1
 qos map tag-cos pcp 6 dei 0 cos 6 dpl 0
 qos map tag-cos pcp 6 dei 1 cos 6 dpl 1
 qos map tag-cos pcp 7 dei 0 cos 7 dpl 0
 qos map tag-cos pcp 7 dei 1 cos 7 dpl 1
-- more --, next page: Space, continue: g, quit: ^C
SISPM1040-582-LRT# show qos storm
qos storm:
==========
Unicast  : disabled       1 fps
Multicast: disabled       1 fps
Broadcast: disabled       1 fps
SISPM1040-582-LRT#
```

Command: **radius-server**

Description: Show RADIUS server configuration/statistics.

Syntax : **show** radius-server <statistics> <cr>

Parameters:

|	Output modifiers
statistics	RADIUS statistics
<cr>	

Example 1: Display current RADIUS server parameters:

```
SISPM1040-582-LRT# show radius-server
Global RADIUS Server Timeout      : 5 seconds
Global RADIUS Server Retransmit   : 3 times
Global RADIUS Server Deadtime     : 0 minutes
Global RADIUS Server Key         : 1f1cdd117e737fce5ab65bb8acfdb7a1823a240c4cde
4986a8cfaa58da0f6c659103ea61d02acc2ad9f542be2db4456c3a32084c8f9b377e25d1879b428f8148
Global RADIUS Server Attribute 4  : 192.168.1.3
Global RADIUS Server Attribute 95 :
Global RADIUS Server Attribute 32 : admin
RADIUS Server #1:
  Host name  : RadSrvr1
  Auth port  : 1812
  Acct port  : 1813
  Timeout    : 60 seconds
  Retransmit : 350 times
  Key        : 30b032b1f6fc3d94888a2ba60a4080f149065420f23c5c0045343b80edfc51d67
27472c09a4ae3ce0b2897286f930acde032b8bd3885f53b7f46b42a72a2bee5
RADIUS Server #2:
  Host name  : Radrvr2
  Auth port  : 1812
  Acct port  : 1813
  Timeout    : 60 seconds
  Retransmit : 350 times
  Key        : d271d8fbc8ac370e64f8149c02f80a0506dd4ff28cf329c6abfe986e61479f981
d017fdbb60d629c6b5b59f1e6a671f63cfc8e16c39b3261f3e46d473eb74d33db003450669c3231f748eee117103362
SISPM1040-582-LRT#
```

Example 2: Display current RADIUS server statistics:

```
SISPM1040-582-LRT# show radius-server statistics
Global RADIUS Server Timeout      : 5 seconds
Global RADIUS Server Retransmit   : 3 times
Global RADIUS Server Deadtime     : 0 minutes
Global RADIUS Server Key         : 1f1cdd117e737fce5ab65bb8acfdb7a1823a240c4cde
4986a8cfaa58da0f6c659103ea61d02acc2ad9f542be2db4456c3a32084c8f9b377e25d1879b428f8148
Global RADIUS Server Attribute 4  : 192.168.1.3
Global RADIUS Server Attribute 95 :
Global RADIUS Server Attribute 32 : admin
RADIUS Server #1:
  Host name  : RadSrvr1
  Auth port  : 1812
  Acct port  : 1813
  Timeout    : 60 seconds
  Retransmit : 350 times
  Key        : 30b032b1f6fc3d94888a2ba60a4080f149065420f23c5c0045343b80edfc51d67
27472c09a4ae3ce0b2897286f930acde032b8bd3885f53b7f46b42a72a2bee5
RADIUS Server #2:
  Host name  : Radrvr2
  Auth port  : 1812
  Acct port  : 1813
  Timeout    : 60 seconds
  Retransmit : 350 times
```

```
  Key       : d271d8fbc8ac370e64f8149c02f80a0506dd4ff28cf329c6abfe986e61479f981
d017fdbb60d629c6b5b59f1e6a671f63cfc8e16c39b3261f3e46d473eb74d33db003450669c3231f
748eee117103362

RADIUS Server #1 (0.0.0.0:1812) Authentication Statistics:
Rx Access Accepts:                 0   Tx Access Requests:                0
Rx Access Rejects:                 0   Tx Access Retransmissions:          0
Rx Access Challenges:              0   Tx Pending Requests:                0
Rx Malformed Acc. Responses:        0   Tx Timeouts:                       0
Rx Bad Authenticators:             0
Rx Unknown Types:                  0
Rx Packets Dropped:                0
State:                         Ready
Round-Trip Time:                   0 ms

RADIUS Server #1 (0.0.0.0:1813) Accounting Statistics:
Rx Responses:                      0   Tx Requests:                      0
Rx Malformed Responses:             0   Tx Retransmissions:                0
Rx Bad Authenticators:              0   Tx Pending Requests:               0
Rx Unknown Types:                  0   Tx Timeouts:                      0
Rx Packets Dropped:                0
State:                         Ready
-- more --, next page: Space, continue: g, quit: ^C
```

Command: **rapid-ring**

Description: Show Rapid Ring configuration.

Syntax : **show** rapid-ring <cr>

Parameters: None.

Example:

```
SISPM1040-582-LRT# show rapid-ring
Entry Index              : 1
Rapid Ring Role          : Master
Rapid Ring Port 1        : 1
Rapid Ring Port 2        : 2
Rapid Ring Port 1 State   : Forwarding
Rapid Ring Port 2 State   : Discarding

Entry Index              : 2
Rapid Ring Role          : Member
Rapid Ring Port 1        : 3
Rapid Ring Port 2        : 4
Rapid Ring Port 1 State   : Discarding
Rapid Ring Port 2 State   : Forwarding

Ring-to-Ring Role        : Active
Ring-to-Ring Port        : 5
Ring-to-Ring Port State   : Discarding
SISPM1040-582-LRT#
```

Command: **rmon**

Description: Show RMON 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
|	Output modifiers
<cr>	

Example:

```
SISPM1040-582-LRT# show rmon event
Event ID :     1
----------------
     Description     : 11111
     Type           : logandtrap
     Community      : public
     LastSent       : Never
SISPM1040-582-LRT# show rmon history
History ID :     1
------------------
    Data Source        : .1.3.6.1.2.1.2.2.1.1.1
    Data Bucket Request : 50
    Data Bucket Granted : 50
    Data Interval      : 1800
SISPM1040-582-LRT# show rmon statistics
Statistics ID :     1
---------------------
    Data Source : .1.3.6.1.2.1.2.2.1.1.1
    etherStatsDropEvents         : 0
    etherStatsOctets             : 18190238
    etherStatsPkts               : 31083
    etherStatsBroadcastPkts      : 2285
    etherStatsMulticastPkts      : 14
    etherStatsCRCAlignErrors     : 0
    etherStatsUndersizePkts      : 0
    etherStatsOversizePkts       : 0
    etherStatsFragments          : 0
    etherStatsJabbers            : 0
    etherStatsCollisions         : 0
    etherStatsPkts64Octets       : 843
    etherStatsPkts65to127Octets   : 11822
    etherStatsPkts128to255Octets  : 132
    etherStatsPkts256to511Octets  : 8234
    etherStatsPkts512to1023Octets : 517
    etherStatsPkts1024to1518Octets: 9535
SISPM1040-582-LRT#
```

Command: **running-config**

Description: 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
<vlan_list>	List of VLAN numbers
<cword>	Feature: valid words are 'GVRP' 'R-Ring' 'access' 'access-list' 'aggregation' 'arp-inspection' 'auth' 'cli_telnet' 'clock' 'dhcp' 'dhcp-snooping' 'dhcp6_client_interface' 'dhcp_server' 'dms-server' 'dns' 'dot1x' 'eps' 'erps' 'evc' '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' 'lacp' 'link-oam' 'lldp' 'logging' 'loop-protect' 'mac' 'mep' 'mrp' 'mstp' 'mvr' 'mvr-port' 'ntp' 'poe' 'port' 'port-security' 'ptp' 'push_notification' 'pvlan' 'qos' 'rmon' 'sflow' 'smtp' 'snmp' 'source-guard' 'ssh' 'sysutil' 'trap_event' 'udld' 'upnp' 'user' 'vlan' 'voice-vlan' 'vtss-rmirror' 'vtun' 'web' 'vlan' 'voice-vlan' 'vtss-rmirror' 'vtun' 'web' 'web-privilege-group-level'
console	Console
vty	VTY
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
vlan	VLAN
<port_type_list>	Port list in 1/1-10

Example:

```
SISPM1040-582-LRT# show running-config
Building configuration...
hostname SISPM1040-582-LRT
username admin privilege 15 password encrypted
11c3abe4b41a4f8112e710a34c7ecb49fac8cbdbe9e367cf612157d368906fbadef29e6c9f8c39e6a8070d639b7eb6066b2a55
fc685519510d832a9497dbff1c
!
vlan 1
!
!
!
!
ip route 0.0.0.0 0.0.0.0 192.168.1.254
tzidx 0
system name SISPM1040-582-LRT
system description Managed Hardened PoE++ Switch (8) 10/100/1000Base-T PoE++ Ports + (2) 100/1000Base-
X SFP Slot
!
```

```
interface GigabitEthernet 1/1
!
interface GigabitEthernet 1/2
!
interface GigabitEthernet 1/3
!
interface GigabitEthernet 1/4
!
interface GigabitEthernet 1/5
!
interface GigabitEthernet 1/6
!
interface GigabitEthernet 1/7
!
interface GigabitEthernet 1/8
!
interface GigabitEthernet 1/9
!
interface GigabitEthernet 1/10
!
interface vlan 1
 ip address 192.168.1.77 255.255.255.0
!
!
spanning-tree aggregation
 spanning-tree link-type point-to-point
!
!
SISPM1040-582-LRT# show running-config feature web-privilege-group-level all-defaults
Building configuration...
!
!
!
!
web privilege group Aggregation level cro 5 crw 10 sro 5 srw 10
web privilege group Debug level cro 15 crw 15 sro 15 srw 15
web privilege group DHCP level cro 5 crw 10 sro 5 srw 10
web privilege group DHCPv6_Client level cro 5 crw 10 sro 5 srw 10
web privilege group Diagnostics level cro 5 crw 10 sro 5 srw 10
web privilege group DMS_client level cro 5 crw 10 sro 5 srw 10
web privilege group DMS_server level cro 5 crw 10 sro 5 srw 10
web privilege group EEE level cro 5 crw 10 sro 5 srw 10
web privilege group EPS level cro 5 crw 10 sro 5 srw 10
web privilege group ERPS level cro 5 crw 10 sro 5 srw 10
web privilege group ETH_LINK_OAM level cro 5 crw 10 sro 5 srw 10
web privilege group EVC level cro 5 crw 10 sro 5 srw 10
web privilege group Green_Ethernet level cro 5 crw 10 sro 5 srw 10
web privilege group Install_Wizard level cro 5 crw 10 sro 5 srw 10
web privilege group IP level cro 5 crw 10 sro 5 srw 10
web privilege group IPMC_Snooping level cro 5 crw 10 sro 5 srw 10
web privilege group LACP level cro 5 crw 10 sro 5 srw 10
-- more --, next page: Space, continue: g, quit: ^C
```

Command: **sflow**

Description: Display Statistics flow.

Syntax : **show** sflow
show sflow statistics { receiver [<rcvr_idx_list>] | samplers [interface [<samplers_list>] (<port_type> [<v_port_type_list>])] }

Parameters:

|	Output modifiers
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
GigabitEthernet	1 Gigabit Ethernet Port
<port_type_list>	Port list in 1/1-10
<cr>	

Example:

```
SISPM1040-582-LRT# 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.
SISPM1040-582-LRT#
SISPM1040-582-LRT# show sflow statistics samplers interface GigabitEthernet 1/5


Per-Port Statistics:
====================

Interface             Rx Flow Samples  Tx Flow Samples  Counter Samples
--------------------  ---------------  ---------------  ---------------
GigabitEthernet 1/5                 0                0                0
SISPM1040-582-LRT#
```

Command: **smtp**

Description: Show email information.

Syntax : **show** smtp <cr>

Parameters: <cr>

Example:

```
SISPM1040-582-LRT# show smtp
Mail Server     : 192.168.1.77
User Name       : admin
Password        : ********
Sender          : sispm1040-582-lrt
Return Path     : svt@transition.com
Email Adress 1  : engineering@transition.com
Email Adress 2  : toms@comcast.net
Email Adress 3  : terrt@transition.com
Email Adress 4  :
Email Adress 5  :
Email Adress 6  :
SISPM1040-582-LRT#
```

Command: **snmp**

Description: Display SNMP configuration.

Syntax : **show** snmp
show snmp access [<group_name> { v1 | v2c | v3 | any } { auth | noauth | priv }]
show snmp community v3 [<community>]
show snmp host [<conf_name>] [system] [switch] [interface] [aaa]
show snmp info
show snmp mib context
show snmp mib ifmib ifIndex
show snmp security-to-group [{ v1 | v2c | v3 } <security_name>]
show snmp user [<username> <engineID>]
show snmp view [<view_name> <oid_subtree>]

Parameters:

|	Output modifiers
access	access configuration
community	Community
host	Show SNMP host's configurations
info	Show basic SNMP information.
mib	MIB (Management Information Base)
security-to-group	security-to-group configuration
user	User
view	MIB view configuration
<word32>	group name
v3	SNMPv3
<word32>	Name of the host configuration
aaa	AAA event group
interface	Interface event group
switch	Switch event group
system	System event group
<word32>	Specify community name

Example:

```
SISPM1040-582-LRT# show snmp

SNMP Configuration
SNMP Mode                    : enabled
SNMP Version                 : v2c
Read Community               : public
Write Community              : private
Trap Mode                    : disabled

SNMPv3 Communities Table:
Community   : public
Source IP   : 0.0.0.0
Source Mask : 0.0.0.0

Community   : private
Source IP   : 0.0.0.0
Source Mask : 0.0.0.0


SNMPv3 Users Table:
User Name              : default_user
Engine ID              : 800007e5017f000001
Security Level         : NoAuth, NoPriv
-- more --, next page: Space, continue: g, quit: ^C
SISPM1040-582-LRT# show snmp info

SNMP Info:
Conf VendorName:TN, VENDOR_TN, PRODUCT:SISPM1040-582-LRT
EngineID: 800007e5017f000001
Using     oid :1.3.6.1.4.1.868.2.80.8, length:10
SISPM1040-582-LRT# show snmp host aaa interface switch system
Trap Global Mode: enabled
Trap trap1 (ID:0) is enabled
Community       : public
Destination Host: 192.168.1.30
UDP Port        : 162
Version         : V3
Inform Mode     : enabled
Inform Timeout  : 3
Inform Retry    : 5
Probe Mode      : enabled
Engine ID       :
Security Name   : None

SISPM1040-582-LRT#
```

Messages: *Trap Global Mode: disabled*

Command: **spanning-tree**

Description: 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:

|	Output modifiers
active	STP active interfaces
detailed	STP statistics
interface	Choose port
mst	Configuration
summary	STP summary
interface	List of port type and port ID, ex, Fast 1/1 Gigabit 2/3-5 Gigabit 3/2-4 Tengigabit 4/6
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
<port_type_list>	Port list for all port types
<0-7>	Choose port
configuration	STP bridge instance no (0-7, CIST=0, MST2=1...)

Example 1 :

```
SISPM1040-582-LRT# 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
SISPM1040-582-LRT# show spanning-tree mst configuration
MSTI1  No VLANs mapped
MSTI2  No VLANs mapped
MSTI3  No VLANs mapped
MSTI4  No VLANs mapped
MSTI5  No VLANs mapped
MSTI6  No VLANs mapped
MSTI7  No VLANs mapped
SISPM1040-582-LRT# show spanning-tree detailed
Port      Rx MSTP   Tx MSTP   Rx RSTP   Tx RSTP   Rx STP   Tx STP   Rx TCN   Tx TCN   Rx Ill.  R     x
Unk.
---------  --------  --------  --------  --------  -------  -------  -------  -------  -------  -      --
----
   Gi 1/2        0     1347        0         0        0        0        0        0        0             0
   Gi 1/4        1     1339        0         0        0        0        0        0        0             0
   Gi 1/5        1     1339        0         0        0        0        0        0        0             0
   Gi 1/7        0     1339        0         0        0        0        0        0        0             0
   Gi 1/8        0     1338        0         0        0        0        0        0        0             0
   Gi 1/9     1339        4        0         0        0        0        0        0        0             0
  Gi 1/10     1339        5        0         0        0        0        0        0        0             0
SISPM1040-582-LRT#
```

Example 2 :

```
SISPM1040-582-LRT# show spanning-tree active
CIST Bridge STP Status
Bridge ID    : 32768.00-C0-F2-4F-7F-CD
Root ID      : 32768.00-C0-F2-4F-7F-CD
Root Port    : -
Root PathCost: 0
Regional Root: 32768.00-C0-F2-4F-7F-CD
Int. PathCost: 0
Max Hops     : 20
TC Flag      : Steady
TC Count     : 0
TC Last      : -
Port       Port Role        State       Pri  PathCost  Edge  P2P   Uptime
---------  --------------  ----------  ---  --------  ----  ---  -------------
Gi 1/1     DesignatedPort  Forwarding  128    200000  Yes   Yes    0d 07:00:02
Gi 1/2     DesignatedPort  Forwarding  128     20000  Yes   Yes    0d 07:00:02
Gi 1/4     DesignatedPort  Forwarding  128    200000  Yes   Yes    0d 07:00:02
Gi 1/5     DesignatedPort  Forwarding  128     20000  Yes   Yes    0d 07:00:02
Gi 1/6     DesignatedPort  Forwarding  128    200000  Yes   Yes    0d 07:00:02
Gi 1/8     DesignatedPort  Forwarding  128     20000  Yes   Yes    0d 07:00:02
Gi 1/10    BackupPort      Discarding  128     20000  No    Yes    0d 07:00:02
SISPM1040-582-LRT#
SISPM1040-582-LRT# show spanning-tree mst configuration
MSTI1  No VLANs mapped
MSTI2  No VLANs mapped
MSTI3  No VLANs mapped
MSTI4  No VLANs mapped
MSTI5  No VLANs mapped
MSTI6  No VLANs mapped
MSTI7  No VLANs mapped
SISPM1040-582-LRT#
```

Command: **switchport**

Description: 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
<word31>	VLAN name
|	Output modifiers
<vlan_list>	VLAN IDs 1-4095
<cr>	

Example:

```
SISPM1040-582-LRT# show switchport forbidden
% No forbidden VLANs found
SISPM1040-582-LRT#
SISPM1040-582-LRT# show switchport forbidden name BobB
% VLAN name does not exist
SISPM1040-582-LRT# show switchport forbidden vlan 1-20
VLAN  Name                            Interfaces
----  ------------------------------  ----------
1     default
2     VLAN0002
3     VLAN0003
4     VLAN0004
5     VLAN0005
6     VLAN0006
7     VLAN0007
8     VLAN0008
9     VLAN0009
10    VLAN0010
11    VLAN0011
12    VLAN0012
13    VLAN0013
14    VLAN0014
15    VLAN0015
16    VLAN0016
17    VLAN0017
18    VLAN0018
19    VLAN0019
20    VLAN0020
-- more --, next page: Space, continue: g, quit: ^C
SISPM1040-582-LRT#
```

Messages: *% VLAN name does not exist*

Command: **system**

Description: Show system information.

Syntax : **show** system
show system cpu status
show system di-do
show system reboot

Parameters:

cpu	CPU load. CPU load is a measure of the amount of computational work that a computer system performs. The load average represents the average system load over a period of time. It conventionally appears in the form of three numbers which represent the system load during the last one-, five-, and fifteen-minute periods.
di-do	Switch DI and DO default configuration.
reboot	Switch reboot scheduling.
status	Average load
|	Output modifiers
<cr>	

Example:

```
SISPM1040-582-LRT# show system
Model Name                 : SISPM1040-582-LRT
System Description         : Managed Hardened PoE++ Switch (8) 10/100/1000Base-T PoE++ Ports + (2)
100/1000Base-X SFP Slot
Location                   : Eng - SVT Lab
Contact                    : Bob or Lee in the lab
System Name                : SISPM1040-582-LRT
System Date                : 2022-09-21T17:26:53+00:00
System Date                : 2023-09-19T15:12:58+00:00
System Uptime              : 01:41:38
Bootloader Version         : v1.20
Firmware Version           : VB7.20.0191 2023-10-16
PoE Firmware Version       : 200-352
Hardware Version           : v1.02
Mechanical Version         : v1.01

Serial Number              : A151119BR3600250
MAC Address                : 00-c0-f2-4f-73-d0
Memory                     : Total=45918 KBytes, Free=26665 KBytes, Max=25949 KBytes
FLASH                      : 0x40000000-0x41ffffff, 512 x 0x10000 blocks
Powers status              : Normal
Powers                     : PWR_1.0V:1.01V; PWR_3.3V:3.28V; PWR_2.5V:2.63V; PWR_1.8V:1.93V
Temperature status         : Normal
Temperature 1              : 42(C) ; 107(F)
Temperature 2              : 42(C) ; 107(F)
SISPM1040-582-LRT# show system di-do

Switch DI Mode: High
Switch DO Mode: open

SISPM1040-582-LRT# show system reboot

Switch Reboot Mode: Disable
Switch Reboot Entry:

           Reboot Time
  Week Day     HH : MM
 ----------    -------
```

```
  Monday       -  -
  Tuesday      -  -
  Wednesday    -  -
  Thursday     -  -
  Friday       -  -
  Saturday     -  -
  Sunday       -  -

SISPM1040-582-LRT# show system cpu status
   Average load in 100 ms  : 7%
   Average load in   1 sec : 13%
   Average load in  10 sec : 14%
SISPM1040-582-LRT#
```

Command: **tacacs-server**

Description: Show TACACS+ server configuration.

Syntax : **show** tacacs-server <cr>

Parameters: | Output modifiers
<cr>

Example:

```
SISPM1040-582-LRT# show tacacs-server
Global TACACS+ Server Timeout      : 400 seconds
Global TACACS+ Server Deadtime     : 0 minutes
Global TACACS+ Server Key          : 905a8f9126d8b9b4d7668c1e54610f5fb46af98afe3
40e33a55847f44455a5efd5f27de0b643e5c2d3e994c85f3ee003d7c00aab8eb3bcb003bba8854bd
c7cf293fa14ac0fd737e83452ce6f19dc6a05c325a527a090055fecb7ea4ea999c360ed8bf0988a8
fa07efb4c72675a04d3b5
TACACS+ Server #1:
  Host name  : TacSrvr1
  Port       : 49
  Timeout    : 60 seconds
  Key        :
TACACS+ Server #2:
  Host name  : TacSrvr2
  Port       : 49
  Timeout    : 45 seconds
  Key        : ac7551c61da714a3875fb4eb58fc7cc5229c1000b463fba7fa1baec6135bcada9
c2d52c4d884852f37422974dc1f5e3b071fec0a997e8ef80d4dee81db1c772bb2036eb1f10088b33
0a333e6d342be11
SISPM1040-582-LRT#
```

Messages: *No servers configured!*

Command: **terminal**

Description: Display terminal configuration parameters.

Syntax : **show** terminal <cr>

Parameters: None.

Example:

```
SISPM1040-582-LRT# show terminal
Line is vty 0.
    * You are at this line now.
    Alive from Telnet.
    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 10 min 4 sec.
    Idle time is 0 day 0 hour 0 min 0 sec.
SISPM1040-582-LRT#
```

Command: **udld**

Description: Show Unidirectional Link Detection(UDLD) configurations, statistics and status.

Syntax : **show** udld [interface (<port_type> [<plist>])]

Parameters:

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

Example:

```
SISPM1040-582-LRT# show udld

GigabitEthernet 1/1
--------------------------------------------------------------------
UDLD Mode               : Normal
Admin State             : Enable
Message Time Interval(Sec): 21
Device ID(local)         : 00-C0-F2-49-39-30
Device Name(local)       : SISPM1040-582-LRT
Bidirectional state      : Indeterminant

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

GigabitEthernet 1/2
--------------------------------------------------------------------
UDLD Mode               : Aggressive
Admin State             : Enable
Message Time Interval(Sec): 7

-- more --, next page: Space, continue: g, quit: ^C
```

Command: **upnp**

Description: Display UPnP configuration.

Syntax : **show** upnp <cr>

Parameters: None.

Example:

```
SISPM1040-582-LRT# show upnp
UPnP Mode               : disabled
UPnP TTL                : 4
UPnP Advertising Duration : 100
SISPM1040-582-LRT#
SISPM1040-582-LRT# show upnp
UPnP Mode               : enabled
UPnP TTL                : 1
UPnP Advertising Duration : 9000
SISPM1040-582-LRT#
```

Command: **user-privilege**

Description: Display Users privilege configuration.

Syntax : **show** user-privilege <cr>

Parameters:

Example:

```
SISPM1040-582-LRT# show user-privilege
username admin privilege 15 password encrypted YWRtaW4=
SISPM1040-582-LRT# show user-privilege
username admin privilege 15 password encrypted 1e2f6d7d92e475663cd416a95632691fd
3fa5411ccd5376b9c5728ede526c0815878f860db2c5ef313fef2626216a876023a3598722c62904
15e4e7b768eef37
SISPM1040-582-LRT# show user-privilege
username admin privilege 15 password encrypted 25f831db4663f6c51ab0c85114dcd8c81
1ff473d7cc8cbe6ee46762a7f31ac1a166370caeefa0109f690b049a11487e82f57f98d5f0503edb
c4d6443f503969a
username jeffs privilege 14 password encrypted 0a53b12cb42c1b51c44fb3c0219c098f8
442dddbb7942fa1bd0d476023f6607c649c6f5b3fb6ee667418b690144d7b39a0e31d0cddf5ddcc3
14693ad3b5fe380
SISPM1040-582-LRT#
```

Command: **users**

Description: Display information about terminal lines.

Syntax : **show** users [myself]

Parameters:

Example:

```
SISPM1040-582-LRT# show users
Line is vty 0.
    * You are at this line now.
    Connection is from 192.168.1.99:56385 by Telnet.
    User name is admin.
    Privilege is 15.
    Elapsed time is 0 day 1 hour 17 min 54 sec.
    Idle time is 0 day 0 hour 0 min 0 sec.

SISPM1040-582-LRT#
```

Command: **version**

Description: Show system hardware and software status.

Syntax : **show** version [brief]

Parameters: | Output modifiers
brief
<cr>

Example:

```
SISPM1040-582-LRT# show version brief
Version      : SISPM1040-582-LRT (standalone) VB7.20.0191
Build Date   : 2023-10-16T18:36:32+08:00
SISPM1040-582-LRT# show version

MEMORY          : Total=45152 KBytes, Free=25343 KBytes, Max=24545 KBytes
FLASH           : 0x40000000-0x41ffffff, 512 x 0x10000 blocks
MAC Address     : 00-c0-f2-4f-73-d0
Previous Restart : Warm

System Contact   :
System Name      : SISPM1040-582-LRT
System Location  :
System Time      : 2011-01-03T20:38:14+00:00
System Uptime    : 2d 19:17:53

Active Image
------------
Image           : managed
Version         : SISPM1040-582-LRT (standalone) VB7.20.0191
Date            : 2023-10-16T18:36:32+08:00

Alternate Image
---------------
Image           : managed.bk
Version         : SISPM1040-582-LRT (standalone) VB7.20.0170
Date            : 2023-04-06T16:45:37+08:00

SISPM1040-582-LRT#
```

Command: **vlan**

Description: 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 | evc | gvrp | mep | mstp | mvr | nas | rmirror | vcl | voice-vlan | dms | mrp | forbidden]
show vlan protocol [eth2 { <etype> | arp | ip | ipx | at }] [snap { <oui> | rfc-1042 | snap-8021h } <pid>] [llc <dsap> <ssap>]
show vlan status [interface (<port_type> [<plist>])] [admin | all | combined | conflicts | erps | evc | gvrp | mep | mstp | mvr | nas | rmirror | vcl | voice-vlan]

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.
	eth2	Ethernet protocol based VLAN status
	llc	LLC based VLAN status
	snap	SNAP-based VLAN status
	<0x600-0xffff>	Ether Type (Range: 0x600 - 0xFFFF)
	arp	Ether Type is ARP
	at	Ether Type is AppleTalk
	ip	Ether Type is IP
	ipx	Ether Type is IPX
	<0x0-0xff>	DSAP (Range: 0x00 - 0xFF)
	<0x0-0xff>	SSAP (Range: 0x00 - 0xFF)
	admin	Show the VLANs configured by administrator.
	all	Show VLANs configured VLANs for all VLAN users.
	combined	Show the combined set of configured VLANs.
	conflicts	Show VLAN configurations that have conflicts.
	erps	Show the VLANs configured by ERPS.
	gvrp	Show the VLANs configured by GVRP.
	interface	Show the VLANs configured for a specific interface or interfaces.
	mep	Show the VLANs configured by MEP.
	mstp	Show the VLANs configured by MSTP.
	mvr	Show the VLANs configured by MVR.
	nas	Show the VLANs configured by NAS.
	rmirror	Show the VLANs configured by Remote mirroring.
	vcl	Show the VLANs configured by VCL.
	voice-vlan	Show the VLANs configured by Voice VLAN.
	interface	Show the VLANs configured for a specific interface or interfaces.
	*	All switches or All ports

GigabitEthernet	1 Gigabit Ethernet Port
<port_type_list>	Port list for all port types
<0x0-0xffffff>	SNAP OUI (Range 0x000000 - 0XFFFFFF)
rfc-1042	SNAP OUI is rfc-1042
snap-8021h	SNAP OUI is 8021h
<ipv4_subnet>	Specify a specific IP Subnet.
<vlan_list>	VLAN IDs 1-4095
all	Show all VLANs (if left out only access VLANs are shown)
dms	Show the VLANs configured by DMS.
id	VLAN membership by VLAN id
name	VLAN membership by VLAN name
<vlan_list>	VLAN IDs 1-4095
<word31>	VLAN name

Example:

```
SISPM1040-582-LRT# show vlan
VLAN  Name                            Interfaces
----  --------------------------------  ----------
1     default                         Gi 1/1-10
2     VLAN0002                        Gi 1/2-3
10    VLAN0010                        Gi 1/2-3
11    VLAN0011                        Gi 1/2-3
12    VLAN0012                        Gi 1/2-3
13    VLAN0013                        Gi 1/2-3
15    VLAN0015                        Gi 1/2-3

SISPM1040-582-LRT# show vlan status admin interface * 1/4
GigabitEthernet 1/4 :
---------------------
VLAN User   PortType       PVID  Frame Type     Ing Filter  Tx Tag            UVID
----------  -------------  ----  -------------  ----------  -----------------  ----
Admin       C-Port         1     All            Enabled     None              1

SISPM1040-582-LRT# show vlan membership
VLAN  Name                            User Type   Interfaces
----  --------------------------------  ----------  ----------
1     default                         Admin       Gi 1/1-10

SISPM1040-582-LRT# show vlan membership admin
VLAN  Name                            User Type   Interfaces
----  --------------------------------  ----------  ----------
1     default                         Admin       Gi 1/1-10
1000  VLAN1000
SISPM1040-582-LRT# show vlan ip-subnet 192.168.1.1/24
SISPM1040-582-LRT#
```

Messages:

The requested protocol was not found
% (VCL Error - The requested entry was not found in the switch)
% (VCL Error - Invalid PID. IF OUI is zero, PID is in the range of Etype(0x600-0xFFFF))
% No VLANs found
% VLAN name does not exist
Entry with IP subnet was not found in the switch/stack

Command: **voice**

Description: Show Voice appliance attributes.

Syntax : **show** voice vlan [oui <oui> | interface (<port_type> [<port_list>])]

Parameters:

vlan	VLAN for voice traffic
|	Output modifiers
interface	Select an interface to configure
oui	OUI configuration
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<cr>	

Example:

```
SISPM1040-582-LRT# show voice vlan
Switch voice vlan is disabled
Switch voice vlan ID is 1000
Switch voice vlan aging-time is 86400 seconds
Switch voice vlan traffic class is 7

Telephony OUI  Description
-------------  -----------

Voice VLAN switchport is configured on following:

GigabitEthernet 1/1 :
---------------------
GigabitEthernet 1/1 switchport voice vlan mode is disabled
GigabitEthernet 1/1 switchport voice security is disabled
GigabitEthernet 1/1 switchport voice discovery protocol is oui

GigabitEthernet 1/2 :
---------------------
GigabitEthernet 1/2 switchport voice vlan mode is disabled
GigabitEthernet 1/2 switchport voice security is disabled
GigabitEthernet 1/2 switchport voice discovery protocol is oui

-- more --, next page: Space, continue: g, quit: ^C

SISPM1040-582-LRT(config)# voice vlan oui A4-BA-DB description myphone
SISPM1040-582-LRT(config)# exit
SISPM1040-582-LRT# show voice vlan oui A4-BA-DB
Telephony OUI  Description
-------------  -----------
A4-BA-DB       myphone
SISPM1040-582-LRT#
```

Command: **web**

Description: Show Web privilege levels.

Syntax : **show** web privilege group [<group_name>] level

Parameters:

web	Web
privilege	Web privilege
group	Web privilege group
<cword>	Valid words are:

Aggregation	DHCP	DHCPv6_Client	DMS_client	DMS_server
Debug	Diagnostics	EEE	EPS	ERPS
ETH_LINK_OAM	EVC	Green_Ethernet	IP	IPMC_Snooping
Install_Wizard	LACP	LLDP	Loop_Protect	MAC_Table
MEP	MRP	MVR	Maintenance	NTP
POE	PTP	Ports	Private_VLANs	QoS
RMirror	R_RING	SMTP	Security	Spanning_Tree
System	TS_client	TS_server	Trap_Event	Trouble_Shooting
UDLD	UPnP	VCL	VLAN_Translation	VLANs
VTUN	Voice_VLAN	XXRP	level	percepxion
sFlow				

level	Web privilege group level.

Example:

```
SISPM1040-582-LRT# show web privilege group Trouble_Shooting level
Group Name                     Privilege Level
                                 CRO CRW SRO SRW
------------------------------ --- --- --- ---
Trouble_Shooting                  5  10   5  10
SISPM1040-582-LRT#
SISPM1040-582-LRT# show web privilege group system level
Group Name                     Privilege Level
                               CRO CRW SRO SRW
------------------------------ --- --- --- ---
System                           5  10   1  10
SISPM1040-582-LRT#
SISPM1040-582-LRT# show web privilege group vcl level
Group Name                     Privilege Level
                               CRO CRW SRO SRW
------------------------------ --- --- --- ---
VCL                              5  10   5  10
SISPM1040-582-LRT#
SISPM1040-582-LRT# show web privilege group level
Group Name                     Privilege Level
                               CRO CRW SRO SRW
------------------------------ --- --- --- ---
Aggregation                      5  10   5  10
Debug                           15  15  15  15
DHCP                             5  10   5  10
DHCPv6_Client                    5  10   5  10
Diagnostics                      5  10   5  10
DMS_client                       5  10   5  10
DMS_server                       5  10   5  10
EEE                              5  10   5  10
EPS                              5  10   5  10
ERPS                             5  10   5  10
```

```
ETH_LINK_OAM                     5  10   5  10
EVC                             5  10   5  10
Green_Ethernet                   5  10   5  10
Install_Wizard                   5  10   5  10
IP                              5  10   5  10
IPMC_Snooping                    5  10   5  10
LACP                            5  10   5  10
LLDP                            5  10   5  10
Loop_Protect                     5  10   5  10
MAC_Table                        5  10   5  10
Maintenance                     15  15  15  15
MEP                             5  10   5  10
MRP                             5  10   5  10
MVR                             5  10   5  10
NTP                             5  10   5  10
percepxion                       5  10   5  10
POE                             5  10   5  10
Ports                           5  10   1  10
Private_VLANs                    5  10   5  10
PTP                             5  10   5  10
QoS                             5  10   5  10
R_RING                          5  10   5  10
RMirror                         5  10   5  10
Security                        5  10   5  10
sFlow                           5  10   5  10
SMTP                            5  10   5  10
Spanning_Tree                    5  10   5  10
System                          5  10   1  10
Trap_Event                       5  10   5  10
Trouble_Shooting                 5  10   5  10
TS_client                       5  10   5  10
TS_server                       5  10   5  10
SISPM1040-582-LRT#
```

24 Terminal Commands

Command: **terminal**

Description: 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 in minutes
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:

```
SISPM1040-582-LRT# terminal exec-timeout ?
   <0-1440>    Timeout in minutes
SISPM1040-582-LRT# terminal exec-timeout 1440
SISPM1040-582-LRT# terminal exec-timeout 1440 3600
SISPM1040-582-LRT# terminal history size 30
SISPM1040-582-LRT#
```

25 Traceroute Commands

Command: **traceroute**

Description: Run Traceroute program.

Syntax :

traceroute { ip | ipv6 } <v_ip_addr> [protocol { icmp | udp | tcp }] [wait <v_wait_time>] [ttl <v_max_ttl>] [nqueries <v_nqueries>]

Parameters:

ip	IP
ipv6	IPv6
<word1-255>	destination address
nqueries	Specify number of probe packets
protocol	Specify protocol including icmp, udp and tcp
ttl	Specify max TTL
wait	Specify wait time
icmp	Specify the protocol to use (icmp/udp/tcp; default is icmp)
tcp	Use TCP protocol
udp	Use UDP protocol
<1-10>	1-10; Default is 3 nqueries
<1-255>	Max TTL; 1-255; default is 30
<1-60>	Wait time; 1-60 sec; default is 5 sec
<cr>	

Example:

```
SISPM1040-582-LRT# traceroute ip 192.168.1.77 nqueries 3
traceroute to 192.168.1.77 (192.168.1.77), 30 hops max, 140 byte packets
 1 192.168.1.77  (192.168.1.77)  0 ms  0 ms  0 ms
SISPM1040-582-LRT#
SISPM1040-582-LRT# traceroute ip 2.2.2.2 nqueries 1 protocol tcp ttl 5 wait 1
traceroute to 2.2.2.2 (2.2.2.2), 5 hops max, 40 byte packets
 1  *
 2  *
 3  *
 4  *
 5  *
SISPM1040-582-LRT# traceroute ip 192.168.1.90 nqueries 1 protocol tcp ttl 5 wait 1
traceroute to 192.168.1.90 (192.168.1.90), 5 hops max, 40 byte packets
 1  *
 2  *
 3  *
 4  *
 5  *
SISPM1040-582-LRT#
```

26 Interface Config Mode Commands

These Interface Config mode commands let you configure a specified interface:

*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
vlan	VLAN interface configurations

Command	Function
access-list	Access list
aggregation	Create an aggregation
debug	Debugging functions
description	Configures port description
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
evc	Ethernet Virtual Connections
event	Configure port event settings
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) Link OAM on the interface
lldp	LLDP configurations.
loop-protect	Loop protection configuration on port
mac	MAC keyword
mtu	Maximum transmission unit
mvr	Multicast VLAN Registration configuration
no	Negate a command or set its defaults
poe	Power Over Ethernet.
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.
switchport	Switching mode characteristics
udld	UDLD configurations.

The interface Config Mode commands are described below.

Command: **access-list**

Description: Configure Access list for an interface.

Syntax :

access-list action { permit | deny }
access-list evc-policer <evc_policer_id>
access-list logging
access-list mirror
access-list policy <policy_id>
access-list port-state
access-list rate-limiter <rate_limiter_id>
access-list shutdown
access-list { redirect } interface { <port_type> <port_type_id> | (<port_type> [<port_type_list>]) }

Parameters:

action	Access list action
evc-policer	EVC policer
logging	Logging frame information. Note: The logging feature only works when the packet length is less than 1518 (without VLAN tags) and the System Log memory size and logging rate is limited.
mirror	Mirror frame to destination mirror port
policy	Policy
port-state	Re-enable shutdown port that was shutdown by access-list module
rate-limiter	Rate limiter
<1-16>	Rate limiter ID
redirect	Redirect frame to specific port
shutdown	Shutdown incoming port. The shutdown feature only works when the packet length is less than 1518 (without VLAN tags).
deny	Deny
permit	Permit
<1-256>	EVC policer ID
<0-255>	Policy ID
interface	Select an interface to configure
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
<port_type_list>	Port list for all port types

Example:

```
SISPM1040-582-LRT(config-if)# access-list action permit
SISPM1040-582-LRT(config-if)# access-list rate-limiter 1
SISPM1040-582-LRT(config-if)# access-list evc-policer 1
SISPM1040-582-LRT(config-if)# access-list logging
SISPM1040-582-LRT(config-if)# access-list mirror
SISPM1040-582-LRT(config-if)# access-list policy 0
SISPM1040-582-LRT(config-if)# access-list port-state
SISPM1040-582-LRT(config-if)#
```

Messages:

% The ACL rate limiter and EVC policer can not both be enabled on GigabitEthernet 1/1.
% Port redirect cannot be configured while permitted action on GigabitEthernet 1/1.

Command: **aggregation**

Description: Create an aggregation for an interface.

Syntax : aggregation group <v_uint>

Parameters: group Create an aggregation group
<uint> The aggregation group id

Example:

```
SISPM1040-582-LRT(config-if)# aggregation group 1
SISPM1040-582-LRT(config-if)# do show aggr
Aggr ID  Name    Type    Speed     Configured Ports      Aggregated Ports          Aggregated
Bandwidth
-------  ------  ------  --------  ----------------     ----------------          --------------------
1        LLAG1   Static  1G        GigabitEthernet 1/1-10 GigabitEthernet 1/2,5,8,10   4G
SISPM1040-582-LRT(config-if)#
```

Command: **debug**

Description: Debugging functions in Interface Config mode. Note that there are also Exec mode and Interface Config mode debug commands.

Warning: The use of 'debug' commands may negatively impact system behavior. Do not enable unless instructed to. Some debug commands when enabled they stay on, consuming CPU and memory and ultimately slowing the system down.

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

Warning: Debug commands are only for use by, or at the direction of Lantronix Technical Support.

Syntax:

debug clear change

debug eee wakeup-time [{ rx | tx } { <v_uint16> | clear }]

debug kr-conf [cm1 <cm_1>] [c0 <c_0>] [cp1 <c_1>] [ampl <amp_val>] [{ ps25 | ps35 | ps55 | ps70 | ps120 }] [en-ob | dis-ob] [ser-inv | ser-no-inv] [host | line]

debug link-oam link-event-flags [{ link-fault | dying-gasp | crit-event }]

debug link-oam retrieve-mib-variable-data { local | remote }

debug mode

debug no link-oam link-event-flags { link-fault | dying-gasp | crit-event }

debug phy auto-neg { get | { enable | disable } [master] }

debug phy clock <clock_port> { get | set type { serdes | copper | tclk | xtal | disable } [frequency { 25m | 125m | 3125m }] [squelch <squelch>] }

debug phy force-pass-through-speed { 1G | 100M | 10M }

debug phy gpio <gpio_no> get

debug phy gpio <gpio_no> mode { output | input | alternative }

debug phy gpio <gpio_no> set { high | low }

debug phy i2c read <i2c_mux> <i2c_device_addr> <i2c_reg_addr> <i2c_data_cnt>

debug phy i2c write <i2c_mux> <i2c_device_addr> <i2c_reg_addr> <data>

debug phy ib-cterm <ib_cterm_value> <ib_eq_mode>

debug phy loopback [near | far]
debug phy mmd read <devad> <mmd_reg_addr>
debug phy mmd write <devad> <mmd_reg_addr> <value>
debug phy ob-post0 <value>
debug phy patch-settings-get
debug phy read <addr_list> [<page>] [addr-sort]
debug phy reset
debug phy statistic
debug phy write <addr_list> <value> [<page>]
debug show capabilities
debug show change [up | down]
debug trace port [enable | disable]

Parameters:

	clear	clear keyword.
	eee	Powering down of PHYs when there is no traffic.
	kr-conf	Show or set the 10GBASE-KR parameters.
	link-oam	Link OAM configuration
	mode	debug mode
	no	Negate a command or set its defaults
	phy	PHY register access
	show	Show keyword
	trace	Trace setting

Example:

```
SISPM1040-582-LRT(config-if)# debug eee wakeup-time
SISPM1040-582-LRT(config-if)#
```

Command: **description**

Description: Configure port description for an interface.

Syntax : **description** <description>

Parameters: <line128> Up to 128 characters describing this interface

Example:

```
SISPM1040-582-LRT(config-if)# description 582-lrt
SISPM1040-582-LRT(config-if)#
```

Command: **do**

Description: Run Exec mode commands in Interface Config mode.

Syntax : **do** <command>

Parameters: <line> Exec Command

Example:

```
SISPM1040-582-LRT(config-if)# do show ip int brief
Vlan Address            Method   Status
---- ------------------- -------- ------
   1 192.168.1.77/24      Manual   UP
SISPM1040-582-LRT(config-if)# do show vlan
```

```
VLAN  Name                            Interfaces
----  --------------------------------  ----------
1     default                         Gi 1/1-10

SISPM1040-582-LRT(config-if)#
```

Command: **dot1x**

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

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

Example:

```
SISPM1040-582-LRT(config-if)# dot1x guest-vlan
SISPM1040-582-LRT(config-if)# dot1x port-control mac-based
The 802.1X Admin State must be set to Authorized for ports that are enabled for static aggregation
SISPM1040-582-LRT(config-if)# dot1 port-control force-authorized
SISPM1040-582-LRT(config-if)# dot1x radius-qos
SISPM1040-582-LRT(config-if)# dot1x radius-vlan
SISPM1040-582-LRT(config-if)# dot1x re-authenticate
SISPM1040-582-LRT(config-if)#
```

Messages: *The 802.1X Admin State must be set to Authorized for ports that are enabled for Spanning Tree*

Command: **duplex**

Description: Configure Interface duplex mode for an interface.

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

Parameters:

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

Example:

```
SISPM1040-582-LRT(config-if)# duplex auto
SISPM1040-582-LRT(config-if)#
```

Messages:

E port/conf 01:36:57 150/vtss_appl_port_conf_set#4937: Error: SFP ports only supports full aneg (port_no 8)

E port/conf 01:36:57 150/vtss_appl_port_conf_set#4937: Error: SFP ports only supports full aneg (port_no 9)

Command: **end**

Description: Go back to EXEC mode.

Syntax : **end** <cr>

Parameters: None.

Example:

```
SISPM1040-582-LRT(config-if)# end
SISPM1040-582-LRT#
```

Command: **evc**

Description: Configure Ethernet Virtual Connections for an interface.

Syntax : **evc** [update] [dei { colored | fixed }] [tag { inner | outer }] [key { double-tag | normal | ip-addr | mac-ip-addr }] [key-advanced { double-tag | normal | ip-addr | mac-ip-addr }] [addr { source | destination }] [addr-advanced { source | destination }] [l2cp { [peer <l2cp_peer_list>] [forward <l2cp_forward_list>] [discard <l2cp_discard_list>] }*1]

Parameters:

addr	Setup address match mode
dei	Setup DEI mode
l2cp	Setup L2CP forwarding
tag	Setup tag match mode
update	Update existing entry
colored	Allow policer to set DEI
fixed	Use classified DEI
forward	Allow forwarding of L2CP frames
peer	Redirect L2CP frames to local protocol entity
<0~31>	Select BPDU addresses (0-15) and GARP addresses (16-31)
tag	Setup tag match mode
update	Update existing entry
destination	Match DMAC and DIP
source	Match SMAC and SIP
inner	Match inner tag
outer	Match outer tag
<cr>	

Example:

```
SISPM1040-582-LRT(config-if)# evc addr destination dei colored l2cp forward 10
SISPM1040-582-LRT(config-if)# evc update addr source dei fixed l2cp forward 3 peer 4
SISPM1040-582-LRT(config-if)# evc tag outer
SISPM1040-582-LRT(config-if)# evc addr destination dei colored l2cp forward 1 peer 2 tag inner update
SISPM1040-582-LRT(config-if)# evc dei fixed
SISPM1040-582-LRT(config-if)# evc l2cp forward 1
SISPM1040-582-LRT(config-if)#
```

Command: **event**

Description: Configure port event settings for an interface.

Syntax :

event { active { enable | disable } | link-on { enable | disable } | link-off { enable | disable } | overload { enable | disable } | rx-threshold <rx_threshold> | traffic-duration <traffic_duration> | syslog { enable | disable } | trap { enable | disable } | smtp { enable | disable } | switch2go { enable | disable } | digital-out { enable | disable } | severity <severity> }

Parameters:		
	active	Active
	digital-out	Digital out
	link-off	Link Off
	link-on	Link On
	overload	Traffic Overload
	rx-threshold	Rx threshold
	severity	Severity
	smtp	Smtp
	syslog	Syslog
	traffic-duration	Traffic duration
	trap	Trap
	enable	Active enable
	disable	Traffic Overload disable
	enable	Traffic Overload enable
	<0-7>	<0> Emergency ,<1> Alert ,<2> Critical ,<3> Error ,<4> Warning , <5> Notice ,<6> Informational ,<7> Debug
	disable	Smtp disable
	enable	Smtp enable
	disable	Trap disable
	enable	Trap enable
	<0-100>	Rx threshold 0-100
	<1-300>	Traffic duration 1-300

Example:

```
SISPM1040-582-LRT(config-if)# event active enable
SISPM1040-582-LRT(config-if)# event digital-out enable
SISPM1040-582-LRT(config-if)# event overload enable
SISPM1040-582-LRT(config-if)# event severity 2
SISPM1040-582-LRT(config-if)# event smtp enable
SISPM1040-582-LRT(config-if)# event trap enable
SISPM1040-582-LRT(config-if)# do show event port
Port Active  LinkOn  LinkOff Overload RxThreshold TrafficDuration Syslog  Trap  SMTP    DigitalOut Severity
---- ------- ------- ------- -------- ----------- --------------- ------- ------- ------- ---------- --------
1    enable  enable  enable  disable  0           1               enable  disable disable disable    Warning
2    enable  enable  enable  disable  0           1               enable  disable disable disable    Warning
3    enable  enable  enable  enable   0           1               enable  enable  enable  enable     Crit
4    enable  enable  enable  disable  0           1               enable  disable disable disable    Warning
5    enable  enable  enable  disable  0           1               enable  disable disable disable    Warning
6    enable  enable  enable  disable  0           1               enable  disable disable disable    Warning
7    enable  enable  enable  disable  0           1               enable  disable disable disable    Warning
8    enable  enable  enable  disable  0           1               enable  disable disable disable    Warning
9    enable  enable  enable  disable  0           1               enable  disable disable disable    Warning
10   enable  enable  enable  disable  0           1               enable  disable disable disable    Warning
SISPM1040-582-LRT(config-if)#
```

Command: **exit**

Description: Exit from current mode.

Syntax : **exit** <cr>

Parameters: None.

Example:

```
SISPM1040-582-LRT(config-if)# exit
SISPM1040-582-LRT(config)#
```

Command: **excessive-restart**

Description: Restart backoff algorithm after 16 collisions for an interface. No excessive-restart means discard frame after 16 collisions.

Syntax : excessive-restart <cr>

Parameters: <cr>

Example:

```
SISPM1040-582-LRT(config-if)# excessive-restart
SISPM1040-582-LRT(config-if)#
```

Command: **flowcontrol**

Description: Enable or disable Traffic flow control for an interface.

Syntax : flowcontrol { on | off }

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

Example:

```
SISPM1040-582-LRT(config-if)# flowcontrol on
SISPM1040-582-LRT(config-if)#
```

Command: **frame-length-check**

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

Syntax : frame-length-check <cr>

Parameters: <cr>

Example:

```
SISPM1040-582-LRT(config-if)# frame-length-check
SISPM1040-582-LRT(config-if)#
```

Command: **green-ethernet**

Description: Configure Green ethernet (Power reduction) for an interface.

Syntax : **green-ethernet** eee optimize-for-power

Parameters:

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

<cr>

Example:

```
SISPM1040-582-LRT(config)# green-ethernet eee optimize-for-power
SISPM1040-582-LRT(config)#
```

Command: **gvrp**

Description: Enable GVRP on interface or interfaces.

Syntax :

gvrp

gvrp max-vlans <maxvlans>

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

Parameters:

max-vlans	Number of simultaneous VLANs that GVRP can control
<1-4095>	Number of VLANs max.
time	Configure GARP protocol timer parameters. IEEE 802.1D-2004, clause 12.11.
join-time	Set GARP protocol parameter JoinTime.
<1-20>	Join-time in units of centi seconds. Range is 1-20. Default is 20.
leave-all-time	Set GARP protocol parameter LeaveAllTime.
<1000-5000>	leave-all-time in units of centi seconds Range is 1000-5000. Default is 1000.
leave-time	Set GARP protocol parameter LeaveTime.
<60-300>	leave-time in units of centi seconds. Range is 60-300. Default is 60.
<cr>	

Example:

```
SISPM1040-582-LRT(config-if)# gvrp
SISPM1040-582-LRT(config)# gvrp max-vlans 500
SISPM1040-582-LRT(config)# gvrp time join-time 10
SISPM1040-582-LRT(config)# gvrp time leave-all-time 3000
SISPM1040-582-LRT(config)# gvrp time leave-time 100
SISPM1040-582-LRT(config)# gvrp time join-time 10 leave-all-time 3000 leave-time 100
SISPM1040-582-LRT(config-if)#
```

Command: **help**

Description: Description of the interactive help system.

Syntax : **help** <cr>

Parameters: None.

Example:

```
SISPM1040-582-LRT(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?'.)

SISPM1040-582-LRT(config-if)#
```

Command: **ip**

Description: 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 configuration
logging	ARP inspection logging mode configuration
trust	ARP inspection trust configuration
snooping	Snooping IGMP
filter	Access control on IGMP multicast group registration
immediate-leave	Immediate leave configuration
max-groups	IGMP group throttling configuration
mrouter	Multicast router port configuration
limit	limit command
<0-2>	the number of limit
all	log all entries
deny	log denied entries
permit	log permitted entries
<word16>	Profile name in 16 char's – filter
<1-10>	Maximum number of IGMP group registration
source	verify source
snooping	DHCP snooping
trust	DHCP Snooping trust configuration
<cr>	

Example:

```
SISPM1040-582-LRT(config-if)# ip arp inspection trust
SISPM1040-582-LRT(config-if)# ip arp inspection check-vlan
SISPM1040-582-LRT(config-if)# ip igmp snooping mrouter
SISPM1040-582-LRT(config-if)# ip verify source limit 1
SISPM1040-582-LRT(config-if)# ip dhcp snooping trust
SISPM1040-582-LRT(config-if)#
```

Command: **ipv6**

Description: Configure IPv6 parameters 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

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

Example:

```
SISPM1040-582-LRT(config-if)# ipv6 mld snooping max-groups 6
SISPM1040-582-LRT(config-if)# ipv6 mld snooping mrouter
SISPM1040-582-LRT(config-if)# ipv6 mld snooping immediate-leave

SISPM1040-582-LRT(config-if)#
SISPM1040-582-LRT(config-if)# end
SISPM1040-582-LRT# show ipv6 mld snooping mrouter

MLD Snooping is disabled to stop snooping MLD control plane.

Switch-1 MLD Router Port Status
Gi 1/1: Static and Dynamic Router Port
Gi 1/2: Static and Dynamic Router Port
Gi 1/3: Static and Dynamic Router Port
Gi 1/4: Static and Dynamic Router Port
Gi 1/5: Static and Dynamic Router Port
Gi 1/6: Static and Dynamic Router Port
Gi 1/7: Static and Dynamic Router Port
Gi 1/8: Static and Dynamic Router Port
Gi 1/9: Static and Dynamic Router Port
Gi 1/10: Static and Dynamic Router Port
SISPM1040-582-LRT#
```

Messages: *% Please specify correct filter profile name.*

% Failed to set filtering profile Prof1.

Command: **lacp**

Description: Enable LACP on this interface. **Note** that Static aggregation must be disabled.

Syntax : **lacp**

lacp key { <v_1_to_65535> | auto }

lacp port-priority <v_1_to_65535>

lacp role { active | passive }

lacp timeout { fast | slow }

Parameters:

key	Key of the LACP aggregation
port-priority	LACP priority of the port
role	Active / Passive (speak if spoken to) role
timeout	The period between BPDU transmissions
<1-65535>	Key value
auto	Choose a key based on port speed
fast	Transmit BPDU each second (fast timeout)
slow	Transmit BPDU each 30th second (slow timeout)
active	Transmit LACP BPDUs continuously
passive	Wait for neighbor LACP BPDUs before transmitting
<1-65535>	Priority value, lower means higher priority
<cr>	

Example:

```
SISPM1040-582-LRT(config-if)# lacp key 1
SISPM1040-582-LRT(config-if)# lacp role passive
SISPM1040-582-LRT(config-if)# lacp role active
SISPM1040-582-LRT(config-if)# lacp port-priority 1
SISPM1040-582-LRT(config-if)# lacp key auto
SISPM1040-582-LRT(config-if)# lacp timeout fast
SISPM1040-582-LRT(config-if)# lacp timeout slow
SISPM1040-582-LRT(config-if)#
```

Messages:

Error:Static aggregation is enabled

Could not set LACP parameter

Command: **link-oam**

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

Syntax : **link-oam** link-monitor supported

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

link-oam mib-retrieval supported

link-oam mode { active | passive }

link-oam remote-loopback supported

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

Parameters:

link-monitor	Configure link monitoring
mib-retrieval	Set MIB retrieval support
mode	Set Link OAM mode Active or Passive on this interface
remote-loopback	Link OAM remote loopback support
variable-retrieve	Set mib variable retrieve local info or remote info
frame	Configure frame error event thresholds and window for error frames that trigger an error-frame link event
frame-seconds	Configure frame seconds summary
supported	Enable or Disable(when the no keyword is entered) link monitor on the interface
symbol-period	Configure window and thresholds for an error-symbol period that triggers an error-symbol period link event
threshold	Set a threshold in number of frames
window	Set the a window of time during which error frames are counted
<0-4294967295>	Threshold in number of symbols
<0-65535>	Number of permissible Error Frame Seconds in the period defined by error_window
<1-60>	Duration of the monitoring period in terms of seconds
supported	Enable or Disable (when the no keyword is entered) MIB retrieval support on the interface
active	Enable Link OAM Active mode on this interface
passive	Enable Link OAM Passive mode on this interface
supported	Enable or Disable(when the no keyword is entered) remote loopback on the interface
local-info	Set mib retrieve local info
remote-info	Set mib retrieve remote info
<cr>	

Example:

```
SISPM1040-582-LRT(config-if)# link-oam mode active
SISPM1040-582-LRT(config-if)# link-oam remote-loopback supported
SISPM1040-582-LRT(config-if)# link-oam variable-retrieve local-info
% This feature is not supported yet.
SISPM1040-582-LRT(config-if)# link-oam variable-retrieve remote-info
% This feature is not supported yet.
SISPM1040-582-LRT(config-if)#
```

Command: **lldp**

Description: 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] [poe]

lldp med type { connectivity | end-point }

lldp receive

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

lldp transmit

Parameters:

cdp-aware	Configures if the interface shall 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.
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 TVLs 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.
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.
connectivity	Work as connectivity device.
end-point	Work as end-point device.
capabilities	Enable transmission of the optional capabilities TLV.
location	Enable transmission of the optional location TLV.
network-policy	Enable transmission of the optional network-policy TLV.
poe	Enable/Disable transmission of the optional PoE TLV.

Example:

```
SISPM1040-582-LRT(config-if)# lldp cdp-aware
SISPM1040-582-LRT(config-if)# lldp receive
SISPM1040-582-LRT(config-if)# lldp tlv-select management-address
SISPM1040-582-LRT(config-if)# lldp tlv-select system-capabilities
SISPM1040-582-LRT(config-if)# lldp transmit
SISPM1040-582-LRT(config-if)# lldp med transmit-tlv capabilities location network-policy poe
SISPM1040-582-LRT(config-if)#
```

Command: **loop-protect**

Description: Loop protection configuration 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:

```
SISPM1040-582-LRT(config-if)# loop-protect action log
SISPM1040-582-LRT(config-if)# loop-protect action log shutdown
SISPM1040-582-LRT(config-if)# loop-protect tx-mode
SISPM1040-582-LRT(config-if)# loop-protect
SISPM1040-582-LRT(config-if)#
```

Command: **mac**

Description: MAC keyword - Port learning mode for an interface.

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

Parameters:

learning	Port learning mode
secure	Port Secure mode
<cr>	

Example:

```
SISPM1040-582-LRT(config-if)# mac address-table learning
SISPM1040-582-LRT(config-if)# mac address-table learning secure
SISPM1040-582-LRT(config-if)#
```

Command: **mtu**

Description: Configure Maximum Transmission Unit (frame size) for an interface.

Syntax : **mtu** <max_length>

Parameters: 1518-9600 Maximum frame size in bytes.

Example:

```
SISPM1040-582-LRT(config-if)# mtu 9600
SISPM1040-582-LRT(config-if)# do show interface * status
Interface              Mode     Speed & Duplex  Flow Control  Max Frame  Excessive  Link
---------------------  -------  --------------  ------------  ---------  ---------  --------
GigabitEthernet 1/1    enabled  Auto            disabled      9000       Discard    Down
GigabitEthernet 1/2    enabled  Auto            disabled      9000       Discard    1Gfdx
GigabitEthernet 1/3    enabled  Auto            disabled      9000       Discard    Down
GigabitEthernet 1/4    enabled  Auto            disabled      9600       Discard    Down
GigabitEthernet 1/5    enabled  Auto            disabled      9600       Discard    Down
GigabitEthernet 1/6    enabled  Auto            disabled      9600       Discard    Down
GigabitEthernet 1/7    enabled  Auto            disabled      9600       Discard    Down
GigabitEthernet 1/8    enabled  Auto            disabled      9600       Discard    Down
GigabitEthernet 1/9    enabled  Auto            disabled      9600       Discard    Down
-- more --, next page: Space, continue: g, quit: ^C
```

Command: **mvr**

Description: Configure Multicast VLAN Registration 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
<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:

```
SISPM1040-582-LRT(config-if)# mvr immediate-leave
SISPM1040-582-LRT(config-if)# mvr name MvrVID-1 type receiver
SISPM1040-582-LRT(config-if)# mvr vlan 10 type source
SISPM1040-582-LRT(config-if)#
```

Messages:

% Invalid MVR VLAN MvrVID-1.
% Failed to set MVR port role.

Command: **no**

Description: Negate a command or set its defaults.

Syntax : **no** <command>

Parameters:

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

Example:

```
SISPM1040-582-LRT(config-if)# no sflow
SISPM1040-582-LRT(config-if)# no mtu
SISPM1040-582-LRT(config-if)#
```

Command: **poe**

Description: Configure Power Over Ethernet for an interface.

Syntax : **poe** delay-mode
poe delay-time <v_0_to_300>
poe failure-action { nothing | reboot-Remote-PD }
poe hour <v_hour>
poe interval-time <interval>
poe legacy
poe lldp
poe max-reboot-times <reboot>
poe mode { enable | disable | force | 2-pair | 4-pair } (before FW VB7.10.2658)
poe mode { 4pair60w | 4pair90w } (FW VB7.10.2658 and above)
poe mode { disable | 8023bt } (FW VB7.10.2658 and above)
poe mode { 4pair60w | 4pair90w }
poe mode { disable | 8023bt90w | 8023bt60w | 8023bt30w | force90w | force60w }
poe ping-ip-addr <address>
poe ping-ip-addr { <address> | <ipv6> }
poe ping-retry-time <retry>
poe port-profile name <entry_name>
poe power limit { <v_word9> } (before FW VB7.10.2658)
poe priority { low | high | critical }
poe reboot-time <reboot>
poe schedule-all
poe schedule-mode
poe startup-time <startuptime>
poe weekday { Sun | Mon | Tue | Wed | Thr | Fri | Sat } hour [<hour_v_0_to_23>]

Parameters:

delay-mode	Configure PoE Power delay mode
delay-time	Setting power delay time from 0 to 300(sec).
failure-action	Configure PoE Auto Power Reset Failure Action.
hour	Configure PoE Power scheduling per hour.
interval-time	Configure PoE Auto Power Reset Interval Time.
legacy	Enable poe legacy functionality (FW VB7.10.2658 and above)
lldp	Enable poe lldp functionality (FW VB7.10.2658 and above)
max-reboot-times	Configure PoE Auto Power Reset Max Reboot Times.
mode	PoE mode.
2-pair	Set mode to PoE 2-pair (Maximum power 30.0 W) (before VB7.10.2658)
4-pair	Set mode to PoE 4-pair (Maximum power 60.0 W) (before VB7.10.2658)
4pair60w	Set mode to 4-pair 60w (FW VB7.10.2658 and above)
4pair90w	Set mode to 4-pair 90w (FW VB7.10.2658 and above)
8023bt	Set mode to 802.3bt (FW VB7.10.2658 and above)
disable	Set mode to Disable (FW VB7.10.2658 and above)
4pair60w	Set mode to 4-pair 60w
4pair90w	Set mode to 4-pair 90w
8023bt30w	Set mode to 802.3bt 30w
8023bt60w	Set mode to 802.3bt 60w
8023bt90w	Set mode to 802.3bt 90w
disable	Set mode to Disable

force60w	Set mode to force 60w
force90w	Set mode to force 90w
disable	Set mode to PoE Disable
enable	Set mode to PoE Enable (Maximum power 90.0 W)
ping-ip-addr	Configure PoE Ping IP Address.
<ipv4_addr>	Set PoE Ping IP Address.
<ipv6_addr>	Set PoE Ping IP v6 Address.
ping-retry-time	Configure PoE Auto Power Reset Retry Time.
port-profile	poe scheduling profile
power	Setting maximum power for port in allocation mode.
priority	Interface priority.
reboot-time	Configure PoE Auto Power Reset Reboot Times.
schedule-all	Configure PoE Schedule all of hours.
schedule-mode	Configure PoE Schedule mode.
startup-time	Configure PoE Auto Power Reset Start up Time.
weekday	Configure PoE Power scheduling on week day.
<0-300>	poe delay-time
nothing	Failure Action : Nothing.
reboot-Remote-PD	Failure Action : Reboot Remote PD.
<0-10>	Max. Reboot Times : 0 ~ 10
<0-23>	Enter hour.
<10-120>	Interval Time : 10 ~ 120(sec).
ping-ip-addr	ping-retry-time
<ipv4_addr>	Set PoE Ping IP Address.
<1-5>	Retry Time : 1 ~ 5.
name	poe scheduling profile name
<line32>	profile name, the name length is 32
limit	The maximum power.
<fword2.1>	Maximum power for the interface (Class 4 PDs limited to 90W).
high	Set priority to high.
low	Set priority to low.
critical	Set priority to critical.
<3-120>	Reboot Time : 3 ~ 120(sec).
<30-600>	Start up Time : 30 ~ 600(sec).
Fri	Configure PoE Power scheduling on Friday.
Mon	Configure PoE Power scheduling on Monday.
Sat	Configure PoE Power scheduling on Saturday.
Sun	Configure PoE Power scheduling on Sunday.
Thr	Configure PoE Power scheduling on Thursday.
Tue	Configure PoE Power scheduling on Tuesday.
Wed	Configure PoE Power scheduling on Wednesday.
hour	Configure PoE Power scheduling per Hour.
<0~23>	Enter Hour such as 0,1,5-8.

Example 1:

```
SISPM1040-582-LRT(config-if)# poe delay-mode
SISPM1040-582-LRT(config-if)# poe delay-time 60
SISPM1040-582-LRT(config-if)# poe hour 14
SISPM1040-582-LRT(config-if)# poe failure-action reboot-Remote-PD
SISPM1040-582-LRT(config-if)# poe power limit 80
```

```
SISPM1040-582-LRT(config-if)# poe priority critical
SISPM1040-582-LRT(config-if)# poe reboot-time 20
SISPM1040-582-LRT(config-if)# poe startup-time 45
SISPM1040-582-LRT(config-if)# poe schedule-all
SISPM1040-582-LRT(config-if)# poe schedule-mode
SISPM1040-582-LRT(config-if)# poe weekday Sat hour 13
SISPM1040-582-LRT(config-if)# poe mode 4pair60w
SISPM1040-582-LRT(config-if)# poe mode 8023bt
SISPM1040-582-LRT(config-if)#
```

Messages: *GigabitEthernet 1/10 does not have PoE support*

Example 2: Added at FW vB7.10.2294.

```
SISPM1040-582-LRT# show poe config
Primary Power Supply [W]     : 480

Port  Mode      Schedule                        Priority  Max. Power [W]
----  --------  ------------------------------   --------  --------------
1     POH       Disable                         Low       60.0
2     POH       Disable                         Low       60.0
3     POH       Disable                         Low       60.0
4     POH       Disable                         Low       60.0
5     POH       Disable                         Low       60.0
6     POH       Disable                         Low       60.0
7     POH       Disable                         Low       60.0
8     POH       Disable                         Low       60.0
GigabitEthernet 1/9 does not have PoE support
GigabitEthernet 1/10 does not have PoE support
SISPM1040-582-LRT# show poe config
Primary Power Supply [W]     : 480

Port  Mode      Schedule                        Priority  LLDP      Legacy
----  ---------  ------------------------------   --------  --------  --------
1     Disabled   Profile 1                        High      Enabled   Disabled
2     8023bt90w  Profile 1                        Critical  Enabled   Disabled
3     4pair90w   Profile 1                        High      Enabled   Disabled
4     8023bt30w  Profile 1                        Low       Enabled   Disabled
5     4pair60w   Disable                         Low       Enabled   Disabled
6     8023bt60w  Disable                         Low       Enabled   Disabled
7     force60w   Profile 1                        Low       Enabled   Disabled
8     8023bt60w  Disable                         Low       Enabled   Disabled
GigabitEthernet 1/9 does not have PoE support
GigabitEthernet 1/10 does not have PoE support
SISPM1040-582-LRT# conf terminal
SISPM1040-582-LRT(config)# interface GigabitEthernet 1/1
SISPM1040-582-LRT(config-if)# poe mode ?
    4pair60w     Set mode to 4-pair 60w
    4pair90w     Set mode to 4-pair 90w
    8023bt30w    Set mode to 802.3bt 30w
    8023bt60w    Set mode to 802.3bt 60w
    8023bt90w    Set mode to 802.3bt 90w
    disable      Set mode to Disable
    force60w     Set mode to force 60w
    force90w     Set mode to force 90w
SISPM1040-582-LRT(config-if)# do show poe config
Primary Power Supply [W]     : 480

Port  Mode      Schedule                        Priority  Max. Power [W]
----  --------  ------------------------------  --------  --------------
1     Enabled   Disable                         High      30.0
2     Enabled   Disable                         High      30.0
3     Enabled   Disable                         High      30.0
```

```
4     Enabled   Disable                          Critical  30.0
5     Enabled   Disable                          Low       30.0
6     Enabled   Disable                          Low       30.0
7     Enabled   Disable                          Low       30.0
8     Enabled   Disable                          Low       30.0
GigabitEthernet 1/9 does not have PoE support
GigabitEthernet 1/10 does not have PoE support
SISPM1040-582-LRT(config-if)# poe power limit ?
    <fword2.1>    Maximum power for the interface (Class 4 PDs limited to 90W).
SISPM1040-582-LRT(config-if)# poe power limit 90
SISPM1040-582-LRT(config-if)# do show poe config
Primary Power Supply [W]     : 480

Port  Mode      Schedule                        Priority   Max. Power [W]
----  --------  ------------------------------  --------  --------------
1     Enabled   Disable                          High      30.0
2     Enabled   Disable                          High      30.0
3     Enabled   Disable                          High      30.0
4     Enabled   Disable                          Critical  90.0
5     Enabled   Disable                          Low       30.0
6     Enabled   Disable                          Low       30.0
7     Enabled   Disable                          Low       30.0
8     Enabled   Disable                          Low       30.0
GigabitEthernet 1/9 does not have PoE support
GigabitEthernet 1/10 does not have PoE support
SISPM1040-582-LRT(config-if)# do show poe status
Interface            PD Class  Port Status                  Pwr Req Pwr Alloc Power   Current  Priority
                                                                Used[W] Used[W]   Used[W] Used[mA]
---------------------- --------- ---------------------------------------- ------- --------- ------- -------- ----
                        ----
GigabitEthernet 1/1    1         PoE turned ON                    4         4        1.7     37      High
GigabitEthernet 1/2    -         No PD detected                   0         0        0.0      0      High
GigabitEthernet 1/3    2         PoE turned ON                    7         7        1.7     39      High
GigabitEthernet 1/4    4         PoE turned ON                   90        90         6.5   134      Critical
GigabitEthernet 1/5    2         PoE turned ON                    7         7        1.8     39      Low
GigabitEthernet 1/6    1         PoE turned ON                    4         4        1.6     36      Low
GigabitEthernet 1/7    -         No PD detected                   0         0        0.0      0      Low
GigabitEthernet 1/8    3         PoE turned ON                   15        15       5.1     125     Low
GigabitEthernet 1/9 does not have PoE support
GigabitEthernet 1/10 does not have PoE support

Total Power Request :   127.4 [W]
Total Power Alloctaed : 127.4 [W]
Total Power Used :      18.4 [W]
Total Current Used :    410 [mA]
Capacitor Detection : No
SISPM1040-582-LRT(config-if)#
```

Example 3: FW VB7.10.2658 and above:

```
SISPM1040-582-LRT(config-if)# do show poe config

Port  Mode      Schedule                        Priority  LLDP      Legacy
----  --------  ------------------------------   --------  --------  --------
1     4pair60w  Disable                         Critical  Enabled   Disabled
2     4pair60w  Profile 1                       High      Enabled   Disabled
3     4pair60w  Profile 1                       Low       Enabled   Enabled
4     8023bt    Profile 2                       Low       Enabled   Enabled
5     4pair60w  Disable                         Low       Enabled   Enabled
6     4pair60w  Disable                         Low       Enabled   Enabled
7     4pair60w  Disable                         Low       Enabled   Enabled
8     4pair60w  Disable                         Low       Enabled   Disabled

GigabitEthernet 1/9 does not have PoE support
GigabitEthernet 1/10 does not have PoE support
SISPM1040-582-LRT(config-if)# poe legacy
SISPM1040-582-LRT(config-if)# poe lldp
GigabitEthernet 1/9 does not have PoE support
GigabitEthernet 1/10 does not have PoE support
SISPM1040-582-LRT(config-if)#
```

Example 4: FW VB7.20.0063 and above:

```
SISPM1040-582-LRT(config-if)# poe mode 4pair60w
GigabitEthernet 1/9 does not have PoE support
GigabitEthernet 1/10 does not have PoE support
SISPM1040-582-LRT(config-if)# poe mode 4pair90w
(Port 1 + Port 2) PoE maximum allowed power is limited to 120W
(Port 1 + Port 2) PoE maximum allowed power is limited to 120W
(Port 3 + Port 4) PoE maximum allowed power is limited to 120W
(Port 3 + Port 4) PoE maximum allowed power is limited to 120W
(Port 5 + Port 6) PoE maximum allowed power is limited to 120W
(Port 5 + Port 6) PoE maximum allowed power is limited to 120W
(Port 7 + Port 8) PoE maximum allowed power is limited to 120W
(Port 7 + Port 8) PoE maximum allowed power is limited to 120W
GigabitEthernet 1/9 does not have PoE support
GigabitEthernet 1/10 does not have PoE support
SISPM1040-582-LRT(config-if)# poe mode force60w
GigabitEthernet 1/9 does not have PoE support
GigabitEthernet 1/10 does not have PoE support
SISPM1040-582-LRT(config-if)# poe mode force90w
(Port 1 + Port 2) PoE maximum allowed power is limited to 120W
(Port 1 + Port 2) PoE maximum allowed power is limited to 120W
(Port 3 + Port 4) PoE maximum allowed power is limited to 120W
(Port 3 + Port 4) PoE maximum allowed power is limited to 120W
(Port 5 + Port 6) PoE maximum allowed power is limited to 120W
(Port 5 + Port 6) PoE maximum allowed power is limited to 120W
(Port 7 + Port 8) PoE maximum allowed power is limited to 120W
(Port 7 + Port 8) PoE maximum allowed power is limited to 120W
GigabitEthernet 1/9 does not have PoE support
GigabitEthernet 1/10 does not have PoE support
SISPM1040-582-LRT(config-if)# poe mode 802.3bt90w
                                    ^
% Invalid word detected at '^' marker.
SISPM1040-582-LRT(config-if)#
```

Message: SISPM1040-582-LRT# E poe 05:23:20 50/poe_mgmt_set_local_config#4125: Error: Maximum port power must not exceed 120W (For port 1 + port 2)
W poe 05:23:20 50/poe_mgmt_set_local_config#4138: Warning: Configuration NOT updated due to above error(s)

Meaning: You tried to enter an invalid PoE configuration.

Recovery: 1. Verify your switch FW version (before FW VB7.10.2658 or FW VB7.10.2658 and above).
2. Re-enter the invalid PoE command (likely **poe** mode command in Interface Config mode).
3. Continue operation.

Command: **port-security**

Description: Configure port security per interface.

Syntax : **port-security**
port-security maximum [<v_1_to_1024>]
port-security sticky
port-security sticky <v_mac_addr> vlan <v_vlan_id>
port-security violation { protect | trap | trap-shutdown | shutdown }

Parameters:

maximum	Maximum number of MAC addresses that can be learned on this set of interfaces.
sticky	Enable/disable port security sticky function per interface.
violation	The action involved with exceeding the limit.
<1-1024>	Number of addresses
<mac_addr>	48 bit MAC address: xx:xx:xx:xx:xx:xx
protect	Don't do anything
shutdown	Shutdown the port
trap	Send an SNMP trap
trap-shutdown	Send an SNMP trap and shutdown the port
vlan	VLAN keyword
<vlan_id>	VLAN IDs 1-4095

<cr>

Example:

```
SISPM1040-582-LRT(config-if)# port-security
SISPM1040-582-LRT(config-if)# port-security maximum 500
SISPM1040-582-LRT(config-if)# port-security sticky
SISPM1040-582-LRT(config-if)# port-security violation trap
SISPM1040-582-LRT(config-if)# port-security violation trap-shutdown
SISPM1040-582-LRT(config-if)# port-security sticky 00-c0-f2-4f-7f-cd vlan 10
SISPM1040-582-LRT(config-if)#
```

Command: **ptp**

Description: Configure Precision time Protocol (1588) on one or more interfaces.

Syntax : **ptp** <clockinst> [internal]
ptp <clockinst> announce { [interval <interval>] [timeout <timeout>] }*1
ptp <clockinst> delay-asymmetry <delay_asymmetry>
ptp <clockinst> delay-mechanism { e2e | p2p }
ptp <clockinst> delay-req interval <interval>
ptp <clockinst> egress-latency <egress_latency>
ptp <clockinst> ingress-latency <ingress_latency>
ptp <clockinst> sync-interval <interval>

Parameters:

<0-3>	[0-3] Clock instance
announce	Set announce interval and timeout
delay-asymmetry	Set path delay asymmetry
delay-mechanism	Set delay mechanism
delay-req	Set pdelay req interval
egress-latency	Set port egress latency
ingress-latency	Set port ingress latency
internal	enable as an internal interface
sync-interval	Set sync interval
interval	Set announce interval
timeout	Set Announce timeout
<-3-4>	announce interval
<1-10>	Announce timeout (* announce interval)
<-100000-100000>	Delay asymmetry in ns.
e2e	End to End Delay mechanism
p2p	Peer to Peer Delay mechanism
interval	Define Path-Delay request interval
<-100000-100000>	Egress latency in ns
<-100000-100000>	Ingress latency in ns
<-7-4>	LogSyncInterval
<-7-5>	Path-Delay request intervalPath-Delay request interval
<-7-4>	LogSyncInterval
<cr>	

Example:

```
SISPM1040-582-LRT(config-if)# ptp 0 internal
Error getting port data instance 0 port 6
SISPM1040-582-LRT(config-if)# ptp 0 sync-interval -1
Error setting port data instance 0 port 6
SISPM1040-582-LRT(config-if)# ptp 0 internal
SISPM1040-582-LRT(config-if)# ptp 0 delay-asymmetry 50000
SISPM1040-582-LRT(config-if)# ptp 0 egress-latency -6000
SISPM1040-582-LRT(config-if)# ptp 0 ingress-latency 70000
SISPM1040-582-LRT(config-if)#
```

Messages: *Error setting port data instance 0 port 6*

Command: **pvlan**

Description: Configure Private VLAN for an interface.

Syntax : **pvlan** <pvlan_list>

pvlan isolation

Parameters:

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

Example:

```
SISPM1040-582-LRT(config-if)# pvlan 1-10
SISPM1040-582-LRT(config-if)# pvlan isolation
SISPM1040-582-LRT(config-if)#
```

Command: **qos**

Description: Configure Quality of Service for an interface.

Syntax :

qos cos <cos>
qos dei <dei>
qos dpl <dpl>
qos dscp-classify { zero | selected | any }
qos dscp-remark { rewrite | remap | remap-dp }
qos dscp-translate
qos 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 qce { [addr { source | destination }] [key { double-tag | normal | ip-addr | mac-ip-addr }] }*1
qos queue-policer queue <queue> <rate> [kbps | mbps]
qos queue-shaper queue <queue> <rate> [kbps | mbps] [excess] [rate-type { line | data }]
qos shaper <rate> [kbps | mbps] [rate-type { line | data }]
qos tag-remark { pcp <pcp> dei <dei> | mapped }
qos trust dscp
qos trust tag
qos wrr <w0> <w1> <w2> <w3> <w4> <w5>

Parameters:

cos	Class of service configuration
dei	Drop Eligible Indicator configuration
dpl	Drop precedence level configuration
dscp-classify	DSCP ingress classification
dscp-remark	DSCP egress remarking
dscp-translate	DSCP ingress translation
map	QoS Map/Table configuration
pcp	Priority Code Point configuration
policer	Policer configuration
qce	QoS Control Entry
queue-policer	Queue policer configuration
queue-shaper	Queue shaper configuration
shaper	Shaper configuration

tag-remark	Tag remarking configuration
trust	Trust configuration
wrr	Weighted round robin configuration
<0-7>	Specific class of service
<0-1>	Specific Drop Eligible Indicator
<0-1>	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
<0-7>	Specific Priority Code Point
<uint>	Policer rate <100-3276700>(kbps) or <1-3276>(mbps) or <100-3276700>(fps) or <1-3276>(kfps).
addr	Setup address match mode
destination	Match DMAC and DIP
source	Match SMAC and SIP (default)
queue	Specify queue
<0~7>	Specific queue or range
uint>	Internally rounded up to the nearest value supported by the port shaper. Shaper rate <100-3281943>(kbps) or <1-3281>(mbps).
kbps	Unit is kilobits per second (default)
mbps	Unit is Megabits per second
mapped	Used mapped values (cos,dpl -> pcp,dei)
pcp	Specify default PCP
<0-7>	Specific PCP
dei	Specify default DEI
<0-1>	Specific DEI
<1-100>	Weight for queue 1
<1-100>	Weight for queue 2
<1-100>	Weight for queue 3
<1-100>	Weight for queue 4
<1-100>	Weight for queue 5

Example:

```
SISPM1040-582-LRT(config-if)# qos dscp-translate
SISPM1040-582-LRT(config-if)# qos shaper 90 mbps
SISPM1040-582-LRT(config-if)# qos tag-remark mapped
SISPM1040-582-LRT(config-if)# qos tag-remark pcp 2 dei 0
SISPM1040-582-LRT(config-if)# qos trust dscp
SISPM1040-582-LRT(config-if)# qos trust tag
SISPM1040-582-LRT(config-if)# qos wrr 25 50 75 20 35 70
SISPM1040-582-LRT(config-if)#
```

Command: **rmon**

Description: Configure Remote Monitoring on an interface.

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

Parameters:

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

<cr>

Example:

```
SISPM1040-582-LRT(config-if)# rmon collection history 1000 buckets 600 interval 500
SISPM1040-582-LRT(config-if)# rmon collection stats 4000
SISPM1040-582-LRT(config-if)# do show rmon history

History ID :  1000
------------------
    Data Source        : .1.3.6.1.2.1.2.2.1.1.5
    Data Bucket Request : 600
    Data Bucket Granted : 50
    Data Interval      : 500
SISPM1040-582-LRT(config-if)# do show rmon statistics

Statistics ID :  4000
--------------------
    Data Source : .1.3.6.1.2.1.2.2.1.1.5
    etherStatsDropEvents         : 0
    etherStatsOctets             : 3442358
    etherStatsPkts               : 4948
    etherStatsBroadcastPkts      : 783
    etherStatsMulticastPkts      : 14
    etherStatsCRCAlignErrors     : 0
    etherStatsUndersizePkts      : 0
    etherStatsOversizePkts       : 0
    etherStatsFragments          : 0
    etherStatsJabbers            : 0
    etherStatsCollisions         : 0
    etherStatsPkts64Octets       : 713
    etherStatsPkts65to127Octets   : 8
    etherStatsPkts128to255Octets  : 0
    etherStatsPkts256to511Octets  : 2487
    etherStatsPkts512to1023Octets : 0
    etherStatsPkts1024to1518Octets: 1740
SISPM1040-582-LRT(config-if)#
```

Command: **sflow**

Description: Configure statistics flow on an interface.

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.
<1-3600>	Poll Interval in seconds
<14-200>	Max-sampling-size in bytes
all	Sample All
rx	Sample Rx
tx	Sample Tx
<1-4294967295>	Sampling rate

<cr>

Example:

```
SISPM1040-582-LRT(config-if)# sflow counter-poll-interval 500
SISPM1040-582-LRT(config-if)# sflow max-sampling-size 75
SISPM1040-582-LRT(config-if)# sflow sampler-type all
SISPM1040-582-LRT(config-if)# sflow sampling-rate 50000
SISPM1040-582-LRT(config-if)#
```

Command: **shutdown**

Description: Shutdown the interface.

Syntax : **shutdown** <cr>

Parameters: None.

Example:

```
SISPM1040-582-LRT(config-if)# shutdown
```

Command: **spanning-tree**

Description: Configure Spanning Tree protocol on 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
<0-7>	instance 0-7 (CIST=0, MST2=1...)
cost	STP Cost of this port
port-priority	STP priority of this port
<1-200000000>	Cost range
auto	Use auto cost
<cr>	

Example:

```
SISPM1040-582-LRT(config-if)# spanning-tree auto-edge
SISPM1040-582-LRT(config-if)# spanning-tree bpdu-guard
SISPM1040-582-LRT(config-if)# spanning-tree edge
SISPM1040-582-LRT(config-if)# spanning-tree link-type shared
SISPM1040-582-LRT(config-if)# spanning-tree mst 5 cost auto
SISPM1040-582-LRT(config-if)# spanning-tree restricted-role
SISPM1040-582-LRT(config-if)# spanning-tree restricted-tcn
SISPM1040-582-LRT(config-if)# spanning-tree
SISPM1040-582-LRT(config-if)#
```

Command: **speed**

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

Syntax : **speed** { 10g | 2500 | 1000 | 100 | 10 | 100fx | 100fx-ams | 1000x | 1000x-ams | sfp-auto-ams | auto { [10] [100] [1000] } }

Parameters:

10	10Mbps
100	100Mbps
1000	1Gbps
auto	Auto negotiation

Example:

```
SISPM1040-582-LRT(config-if)# speed??
speed { 10g | 2500 | 1000 | 100 | 10 | 100fx | 100fx-ams | 1000x | 1000x-ams | sfp-auto-ams | auto { [
10 ] [ 100 ] [ 1000 ] } }
SISPM1040-582-LRT(config-if)# speed auto ?
   10      10Mbps
   100     100Mbps
   1000    1Gbps
   <cr>
SISPM1040-582-LRT(config-if)# speed auto
SISPM1040-582-LRT(config-if)# speed ?
   10      10Mbps
   100     100Mbps
   1000    1Gbps
   auto    Auto negotiation
SISPM1040-582-LRT(config-if)# speed 1000x-ams
                              ^
% Invalid word detected at '^' marker.

SISPM1040-582-LRT(config-if)# speed 1000x
                              ^
% Invalid word detected at '^' marker.

SISPM1040-582-LRT(config-if)#
```

Command: **switchport**

Description: 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 <1-128>] <ipv4> vlan <vid>
switchport vlan mac <mac_addr> vlan <vid>
switchport vlan mapping <gid>
switchport vlan protocol group <grp_id> vlan <vid>
switchport voice vlan discovery-protocol { oui | lldp | both }
switchport voice vlan mode { auto | force | disable }
switchport voice vlan security

Parameters:

access	Set access mode characteristics of the interface
forbidden	Adds or removes forbidden VLANs from the current list of forbidden VLANs
hybrid	Change PVID for hybrid port
mode	Set mode of the interface
trunk	Change PVID for trunk port
vlan	VLAN commands
voice	Voice appliance attributes
vlan	Set VLAN when interface is in access mode
<vlan_id>	VLAN ID of the VLAN when this port is in access mode
add	Add to existing list.
remove	Remove from existing list.
<vlan_list>	VLAN IDs
<vlan_list>	VLAN IDs
acceptable-frame-type	Set acceptable frame type on a port
allowed	Set allowed VLAN characteristics when interface is in hybrid mode
egress-tag	Egress VLAN tagging configuration
ingress-filtering	VLAN Ingress filter configuration
native	Set native VLAN
port-type	Set port type
all	Allow all frames
tagged	Allow only tagged frames
untagged	Allow only untagged frames
vlan	Set allowed VLANs when interface is in hybrid mode
all	Tag all frames
none	No egress tagging

vlan	Set native VLAN when interface is in hybrid mode
c-port	Customer port
s-custom-port	Custom Provider port
s-port	Provider port
unaware	Port in not aware of VLAN tags.
access	Set mode to ACCESS unconditionally
hybrid	Set mode to HYBRID unconditionally
trunk	Set mode to TRUNK unconditionally
allowed	Set allowed VLAN characteristics when interface is in trunk mode
native	Set native VLAN
vlan	VLAN commands
vlan	Set allowed VLANs when interface is in trunk mode
<vlan_list>	VLAN IDs of the allowed VLANs when this port is in trunk mode
add	Add VLANs to the current list
all	All VLANs
except	All VLANs except the following
none	No VLANs
remove	Remove VLANs from the current list
ip-subnet	VCL IP Subnet-based VLAN configuration.
mac	MAC-based VLAN commands
mapping	Maps an interface to a VLAN translation group..
protocol	Protocol-based VLAN commands
<ipv4_subnet>	Source IP address and mask (Format:xx.xx.xx.xx/mm.mm.mm.mm).
id	Specify an index for the IP subnet entry (deprecated)
<mac_ucast>	48 bit unicast MAC address: xx:xx:xx:xx:xx:xx
<1-10>	Group id
group	Protocol-based VLAN group 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
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:

```
SISPM1040-582-LRT(config-if)# switchport access vlan 10
SISPM1040-582-LRT(config-if)# switchport hybrid ingress
SISPM1040-582-LRT(config-if)# switchport hybrid ingress
SISPM1040-582-LRT(config-if)# switchport hybrid port-type s-custom-port
SISPM1040-582-LRT(config-if)# switchport mode access
SISPM1040-582-LRT(config-if)# switchport voice vlan security
SISPM1040-582-LRT(config-if)# switchport forbidden vlan remove 100
SISPM1040-582-LRT(config-if)# switchport trunk allowed vlan all
SISPM1040-582-LRT(config-if)#
```

Command: **udld**

Description: Configure UDLD parameters for an interface. Uni Directional Link Detection (UDLD) monitors the physical configuration of the links between devices and ports that support UDLD.

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

Parameters:

port	UDLD configuration on the interface
aggressive	Enable UDLD in aggressive mode on an interface. In aggressive mode, unidirectional detected ports will get shutdown. To bring the ports back up you must disable UDLD on those ports.
message	Configures the period of time between UDLD probe messages on ports that are in the advertisement phase and are determined to be bidirectional. The range is 7 - 90 seconds (currently 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 7 - 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 7 - 90 seconds (currently default message time interval 7 sec is supported).

<cr>

Example:

```
SISPM1040-582-LRT(config-if)# udld port aggressive
SISPM1040-582-LRT(config-if)# udld port aggressive message time-interval 35
SISPM1040-582-LRT(config-if)# udld port
SISPM1040-582-LRT(config-if)# udld port message time-interval 7
SISPM1040-582-LRT(config-if)# udld port message time-interval 7 aggressive
SISPM1040-582-LRT(config-if)#
```

26.1 Configure and Show Port Events for an Interface

Command: **event**

Description: Configure port event settings for an interface.

Syntax : **event** { active { enable | disable } | link-on { enable | disable } | link-off {enable | disable } | overload { enable | disable } | rx-threshold <rx_threshold> | traffic-duration <traffic_duration> | syslog { enable | disable } | trap { enable | disable } | smtp { enable | disable } | { enable | disable } | digital-out { enable | disable } | severity <severity> }

Parameters:

active	Active
digital-out	Digital out
link-off	Link Off
link-on	Link On
overload	Traffic Overload
rx-threshold	Rx threshold
severity	Severity
smtp	Smtp
syslog	Syslog
traffic-duration	Traffic duration
trap	Trap
disable	Active disable
enable	Active enable
disable	Digital out disable
enable	Digital out enable
disable	Link Off disable
enable	Link Off enable
disable	Link On disable
enable	Link On enable
<0-100>	Rx threshold 0-100
disable	Traffic Overload disable
enable	Traffic Overload enable
<0-7>	severity : <0> Emergency ,<1> Alert ,<2> Critical ,<3> Error ,<4> Warning, <5> Notice ,<6> Informational ,<7> Debug
disable	Syslog disable
enable	Syslog enable
disable	Smtp disable
enable	Smtp enable
disable	Trap disable
enable	Trap enable
<1-300>	Traffic duration 1-300

Example:

```
SISPM1040-582-LRT(config-if)# event active enable
SISPM1040-582-LRT(config-if)# event overload enable
SISPM1040-582-LRT(config-if)# event severity 1
SISPM1040-582-LRT(config-if)# event smtp enable
SISPM1040-582-LRT(config-if)# event trap enable
SISPM1040-582-LRT(config-if)#
```

Show Port Events Example:

```
SISPM1040-582-LRT# show event port
Port  Active  LinkOn  LinkOff Overload RxThreshold TrafficDuration  Syslog   Trap  SMTP  DigitalOut  Severity
----  -------  -------  -------  --------  ------------------ ------------------  ------ ---- ---------  ------
------------  ----------
1    enable  enable  enable  disable  0          1              enable  disable disable disable    Warning
2    enable  enable  enable  disable  0          1              enable  disable disable disable    Warning
3    enable  enable  enable  disable  0          1              enable  disable disable disable    Warning
4    enable  enable  enable  disable  0          1              enable  disable disable disable    Warning
5    enable  enable  enable  disable  0          1              enable  disable disable disable    Warning
6    enable  enable  enable  disable  0          1              enable  disable disable disable    Warning
7    enable  enable  enable  disable  0          1              enable  disable disable disable    Warning
8    enable  enable  enable  disable  0          1              enable  disable disable disable    Warning
9    enable  enable  enable  disable  0          1              enable  disable disable disable    Warning
-- more --, next page: Space, continue: g, quit: ^C
```

Show Events Example:

```
SISPM1040-582-LRT(config-if)# do show event
Group Name                      Severity Level    Syslog Mode   Trap Mode    SMTP Mode   Digital Out
------------------------------  ---------------  ------------  -------------    --------    ------------
ACL                            Info             enable       disable     disable      N/A
ACL-Log                         Info             enable       disable     disable      N/A
Access-Mgmt                     Info             enable       disable     disable      N/A
Auth-Failed                     Warning          enable       disable     disable      N/A
Cold-Start                      Warning          enable       disable     disable      N/A
Config-Info                     Info             enable       disable     disable      N/A
DI-1-Abnormal                   Warning          enable       disable     disable      disable
DI-1-Normal                     Warning          enable       disable     disable      disable
DMS                            Info             enable       disable     disable      N/A
-- more --, next page: Space, continue: g, quit: ^C
```

26.2 Configure QoS Commands for an Interface

Command: **qos**

Description: Configure Quality of Service for a specific interface.

Syntax :

qos cos <cos>
qos dei <dei>
qos dpl <dpl>
qos dscp-classify { zero | selected | any }
qos dscp-remark { rewrite | remap | remap-dp }
qos dscp-translate
qos 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 qce { [addr { source | destination }] [key { double-tag | normal | ip-addr | mac-ip-addr }] }*1
qos queue-policer queue <queue> <rate> [kbps | mbps]
qos queue-shaper queue <queue> <rate> [kbps | mbps] [excess] [rate-type { line | data }]
qos shaper <rate> [kbps | mbps] [rate-type { line | data }]
qos tag-remark { pcp <pcp> dei <dei> | mapped }
qos trust dscp
qos trust tag
qos wrr <w0> <w1> <w2> <w3> <w4> <w5>

Parameters:

cos	Class of service configuration
dei	Drop Eligible Indicator configuration
dpl	Drop precedence level configuration
dscp-classify	DSCP ingress classification
dscp-remark	DSCP egress remarking
dscp-translate	DSCP ingress translation
map	QoS Map/Table configuration
pcp	Priority Code Point configuration
policer	Policer configuration
qce	QoS Control Entry
queue-policer	Queue policer configuration
queue-shaper	Queue shaper configuration
shaper	Shaper configuration
tag-remark	Tag remarking configuration
trust	Trust configuration
wrr	Weighted round robin configuration
<0-7>	Specific class of service
<0-1>	Specific Drop Eligible Indicator
<0-1>	Specific drop precedence level
any	Classify to new DSCP always 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	Egress Map for cos to tag configuration
tag-cos	Ingress Map for tag to cos configuration
cos	Specify class of service
<0~7>	Specific class of service or range
dpl	Specify drop precedence level
<0~1>	Specific drop precedence level or range
pcp	Specify PCP (Priority Code Point)
<0-7>	Specific PCP
dei	Specify DEI (Drop Eligible Indicator)
<0-1>	Specific DEI
<0-7>	Specific Priority Code Point
<uint>	Policer rate <100-3276700>(kbps) or <1-3276>(mbps) or <100-3276700>(fps) or <1-3276>(kfps).
flowcontrol	Enable flow control
fps	Unit is frames per second
kbps	Unit is kilobits per second (default)
kfps	Unit is kiloframes per second
mbps	Unit is Megabits per second
addr	Setup address match mode
destination	Match DMAC and DIP
source	Match SMAC and SIP (default)
queue	Specify queue
<0~7>	Specific queue or range
<1-3276700>	Policer rate (default kbps). Internally rounded up to the nearest value supported by the queue policer.
<1-3281943>	Shaper rate (default kbps). Internally rounded up to the nearest value supported by the queue shaper.
excess	Allow use of excess bandwidth
<uint>	Internally rounded up to the nearest value supported by the port shaper. Shaper rate <100-3281943>(kbps) or <1-3281>(mbps).
mapped	Used Egress mapped values (cos,dpl -> pcp,dei)
pcp	Specify Egress default PCP
<0-7>	Specific Egress PCP
dscp	DSCP value
tag	VLAN tag
<1-100>	Weight for queue 0

Example:

```
SISPM1040-582-LRT(config-if)# qos wrr 100 90 80 70 60 50
SISPM1040-582-LRT(config-if)# qos cos 5
SISPM1040-582-LRT(config-if)# qos dei 0
SISPM1040-582-LRT(config-if)# qos dpl 1
SISPM1040-582-LRT(config-if)# qos trust dscp
SISPM1040-582-LRT(config-if)# qos map cos-tag cos 1 dpl 1 pcp 2 dei 0
SISPM1040-582-LRT(config-if)# qos policer 3276 flowcontrol mbps
SISPM1040-582-LRT(config-if)# qos queue-shaper queue 3 4444 excess
SISPM1040-582-LRT(config-if)# qos shaper 9000 kbps
SISPM1040-582-LRT(config-if)# qos trust tag
SISPM1040-582-LRT(config-if)#
```

27 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 *CLI Reference* for Command Line 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.

27.1 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).

27.2 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.

27.3 Related Devices

MRP is supported on SISPM1040-582-LRT, SISPM1040-362-LRT, SISPM1040-384-LRT-C and SISGM1040-284-LRT, SISPM1040-3166-L, and SISPM1040-3248-L.

27.4 MRP Sample Setup

The example below shows SISPM1040-582-LRT switches (one MRM and five MRCs).

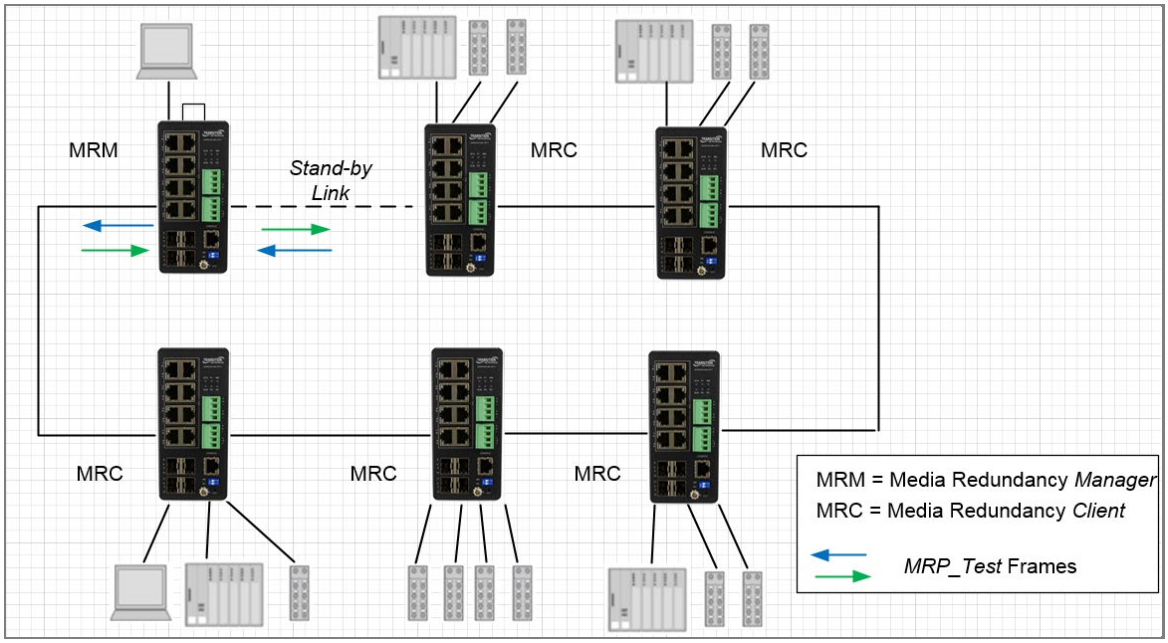


Figure: MRP Sample Setup

27.5 MRP Pre-Requisites (General)

The following are required to perform MRP setups.

1. Spanning Tree must be disabled at Configuration > Spanning Tree > CIST Port.
2. Other Ring technologies must be disabled (G.8031 EPS, G.8032 ERPS, Rapid-Ring, Ring-To-Ring, etc.).
3. A single MRM (Manager) is supported per ring.
4. Other pre-requisites may apply to the specific examples below.

27.6 MRP Config Mode Command Parameters

<1-2>	DomainID of Domain to modify
domain	Create/Delete MRP Domain
client	Operate on an MRP Client
diag-clear	Clear Diagnostic stats for MRP Domain
manager	Operate on an MRP Manager
name	Set name for Domain
ringport	Set/Add Ringport
ringport-delete	Delete Ringport
role	Set role in Domain to manager or client
status	Enable/Disable a domain
uuid	Set UUID for Domain
vlan	Set VLAN for Domain
delete	Delete an MRP Domain
new	Create a new MRP Domain
<1-2>	Domain ID of new Domain
<1-2>	Domain ID of Domain to be deleted

27.7 MRP Config Mode Command Syntax

mrp <domainId> client blocked-state { enable | disable }
mrp <domainId> client link-interval <downInterval> <upInterval> [<linkChangeCount>]
mrp <domainId> diag-clear
mrp <domainId> manager link-change-react { enable | disable }
mrp <domainId> manager media-redundancy { enable | disable }
mrp <domainId> manager nonblocking-supported { enable | disable }
mrp <domainId> manager priority <priority>
mrp <domainId> manager test-interval <testInterval> [<shortTestInterval>]
mrp <domainId> manager test-monitoring <count> [<extendedCount>]
mrp <domainId> manager topology-change <topoChangeInterval> [<topoChangeRepeatCount>]
mrp <domainId> name <domainName>
mrp <domainId> ringport { primary | secondary } <port_type> <mrp_port>
mrp <domainId> ringport-delete { primary | secondary }
mrp <domainId> role { manager | client }
mrp <domainId> status { enable | disable }
mrp <domainId> uuid <domainUUID>
mrp <domainId> vlan <vlanId>
mrp domain delete <domainId>
mrp domain new <domainId>

27.8 MRP Setup (CLI Commands)

Example 1: Create two new MRP domains on an SISPM1040-582-LRT:

```
SISPM1040-582-LRT(config)# mrp domain new 1
SISPM1040-582-LRT(config)# mrp domain new 2
SISPM1040-582-LRT(config)#
```

Example 2: Show default config for newly-created MRP domains 1 and 2:

```
SISPM1040-582-LRT(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
SISPM1040-582-LRT(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
SISPM1040-582-LRT(config)#
```

Example 3: Configure MRP 1 (Manager) and MRP 2 (Client) parameters:

```
SISPM1040-582-LRT(config)# mrp 1 role manager
SISPM1040-582-LRT(config)# mrp 1 manager media-redundancy enable
SISPM1040-582-LRT(config)# mrp 1 manager priority 3
SISPM1040-582-LRT(config)# mrp 1 manager test-interval 25
SISPM1040-582-LRT(config)# mrp 1 manager test-monitoring 4 2
SISPM1040-582-LRT(config)# mrp 1 vlan 100
SISPM1040-582-LRT(config)# mrp 2 client blocked-state enable
SISPM1040-582-LRT(config)# mrp 2 client link-interval 15 30 2
SISPM1040-582-LRT(config)# mrp 2 ringport secondary GigabitEthernet 1/5
SISPM1040-582-LRT(config)# mrp 2 vlan 200
SISPM1040-582-LRT(config)#
```

Example 4: Show newly-configured MRP 1 parameters:

```
SISPM1040-582-LRT(config)# do show mrp 1
Operational:
  Role:                    Manager
  Status:                  Enabled
  Ring State:               Open
  Primary Ring Port State:   Forwarding
  Secondary Ring Port State: Forwarding
Domain:
  Admin Role:              Manager
  Name:                    Domain1
  UUID:                    Default
  Primary Ring Port ID:     2
  Secondary Ring Port ID:   4
  VLAN ID:                 10
Manager:
  Priority:                      8
```

```
  Topology Change Interval, ms:     10
  Topology Change Repeat Count:     3
  Short Test Interval, ms:          10
  Default Test Interval, ms:        20
  Test Monitoring Count:            3
  Test Monitoring Extended Count:   15
  Non-blocking MRC supported:       Disabled
  React On Link Change:             Disabled
  Check Media Redundancy Event:     Enabled
SISPM1040-582-LRT(config)#
```

Example 5: Show newly-configured MRP 2 parameters:

```
SISPM1040-582-LRT(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
SISPM1040-582-LRT(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

28 Service and Tech Support

28.1 Recording Device and System Information

After performing the troubleshooting procedures, and before calling or emailing Technical Support, please record as much information as possible in order to help the Tech Support Specialist.

1. Select the SISPM1040-582-LRT **Monitor** > **System** > **Information** menu path. From the CLI, use the **show** commands to gather the information below or as requested by the Support Specialist.
2. Record Model Name: _____ System Date: _____
   Firmware Version: _____ PoE Firmware Version: _____
   Hardware Version: _____ Mechanical Version: _____
3. Record the **LED** Status: _____
   _____
4. Provide additional information to your Tech Support Specialist. See the "Troubleshooting" section above.

Your Lantronix service contract number: _____

Describe the failure: _____
_____
_____

A description of any action(s) already taken to resolve the problem (e.g., changing mode, rebooting, etc.):
_____
_____
_____

The serial and revision numbers of all involved Lantronix products in the network:
_____

A description of your network environment (layout, cable type, etc.): _____
_____
_____

The device history (i.e., have you returned the device before, is this a recurring problem, etc.): _____
_____
_____

Any previous Return Material Authorization (RMA) numbers: _____

Box Label:

Device Label :

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 *SISPM1040-582-LRT 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 on a per-port basis starting from the configured IP range. For example, if the IP address range is configured as 192.168.10.20 - 192.168.10.37 with one DHCP device connected to port 1, the client will always get IP address 192.168.10.20, then port 3 is always distributed IP address 192.168.10.22, even if port 2 is an empty port (because port 2 is always distributed IP address 192.168.10.21).

The switch does not allow a DHCP per Port pool to include the switch's address.
IP address assigned range and VLAN 1 should stay in the same subnet mask.
The configurable IP address range is allowed to configure over 18 IP addresses, but the switch always assigns one IP address per port connecting device.
The DHCP Per Port function is only supported on VLAN 1.

When the DHCP Per Port function is enabled, the switch software will automatically create the related DHCP pool named "DHCP_Per _Port".

Once the DHCP Per Port function is enabled on one switch, IPv4 DHCP client at VLAN1 mode (DMS DHCP mode), DHCP server mode are all limited to be enabled at the same time (an error message displays if attempted).

If the DHCP server pool has been configured, once you enable the DHCP Per port function that DHCP server pool configuration will be overwritten.

Only for VLAN 1, clients issued DHCP packets will not be broadcast/forwarded to other ports. DHCP packets in others VLANs will be broadcast/forwarded to others ports.

The DHCP Per Port function allows the switch to connect only one DHCP client device.

The DHCP Per Port function is configured and shown using these CLI commands:

```
(config)# ip dhcp server per-port
(config)# no ip dhcp server per-port

SISPM1040-582-LRT# show ip dhcp server

DHCP server is globally disabled.
  All VLANs are disabled.
  DHCP server per port is disabled.

SISPM1040-582-LRT#
SISPM1040-582-LRT# (config)# ip dhcp server per-port
SISPM1040-582-LRT# (config)#
```

The CLI commands to configure and show DHCP Per Port are described below.

Command: Show the current DHCP Server and DHCP Per Port configuration

Syntax: **show ip dhcp server** <cr>

Description: Show if DHCP server is globally enabled or disabled, if all VLANs are disabled or enabled, and if the DHCP server Per Port function is disabled or enabled.

Example: Display the current DHCP Server and Per Port configuration, change the config, and display the results:

```
SISPM1040-582-LRT(config)# do show ip dhcp server

DHCP server is globally enabled.
  Enabled VLANs are 1.
  DHCP server per port is disabled.

SISPM1040-582-LRT(config)# ip dhcp server per-port
SISPM1040-582-LRT(config)# do show ip dhcp server

DHCP server is globally enabled.
  Enabled VLANs are 1.
  DHCP server per port is enabled.

SISPM1040-582-LRT(config)# no ip dhcp server per-port
SISPM1040-582-LRT(config)# do show ip dhcp server

DHCP server is globally enabled.
  Enabled VLANs are 1.
  DHCP server per port is disabled.

SISPM1040-582-LRT(config)#
```

Command: Configure the DHCP Per Port function

Syntax: **ip dhcp server per-port** <cr>

ip dhcp server per-port [vlan { <pertPortVLAN> }]

Description: Toggle the DHCP Per Port function from Disabled (default) to Enabled.

Example: Toggle the DHCP Per Port function and show the resulting config:

```
SISPM1040-582-LRT# show ip dhcp server

DHCP server is globally disabled.
  All VLANs are disabled.

SISPM1040-582-LRT# con ter
SISPM1040-582-LRT(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
SISPM1040-582-LRT(config)# ip dhcp server ?
    per-port           Enable DHCP server per port
SISPM1040-582-LRT(config)# ip dhcp server per-port ?
    <cr>
SISPM1040-582-LRT(config)# ip dhcp server per-port
SISPM1040-582-LRT(config)# do show ip dhcp  server

DHCP server is globally enabled.
  All VLANs are disabled.
  DHCP server per port is enabled.

SISPM1040-582-LRT(config)#

SISPM1040-582-LRT(config)# ip dhcp server per-port vlan 100
SISPM1040-582-LRT(config)# do show ip dhcp server
DHCP server is globally disabled.
  All VLANs are disabled.
  DHCP server per port is disabled.

SISPM1040-582-LRT(config)#
```

The SISPM1040-582-LRT supports the DHCP IP Per Port VLAN function. It lets you have an IP address from a DHCP pool on a switch be statically assigned to a switchport, such that whichever device plugs into the switchport it will always be assigned that specific IP address. The IP address is configured in the interface config settings. Note that this is binding an IP address to an interface, not to a MAC address, which is the classic binding technique found on most switches. (Added at FW VB7.20.0140.)

Appendix B SFTP copy Commands

SFTP Client copy Commands - SSH/Telnet/Console - SolarWinds version 20.4.0.76

The SFTP commands were added at SISPM1040-582-LRT FW v7.20.0034 as described below.
See chapter 5 Copy Commands on page 110 for valid copy commands before FW v7.20.0034.

Note: The 'Always on PoE' feature was incorrectly de-activated in FW v7.20.0034; to bring it back, after finishing the FW upgrade procedure you must reload factory defaults, then copy running-config to startup-config. This will be fixed in the next firmware version.

To reload factory defaults and then copy running-config to startup-config after the FW upgrade is complete:

```
SISPM1040-582-LRT# reload defaults keep-ip
% Reloading defaults, attempting to keep IP address. Please stand by.
SISPM1040-582-LRT# copy running-config startup-config
Building configuration... % Saving 1065 bytes to flash:startup-config
SISPM1040-582-LRT#
```

Secure File Transfer (SFTP) Setup

Switch Settings: RADIUS Authentication Using SSH PuTTY Port 22

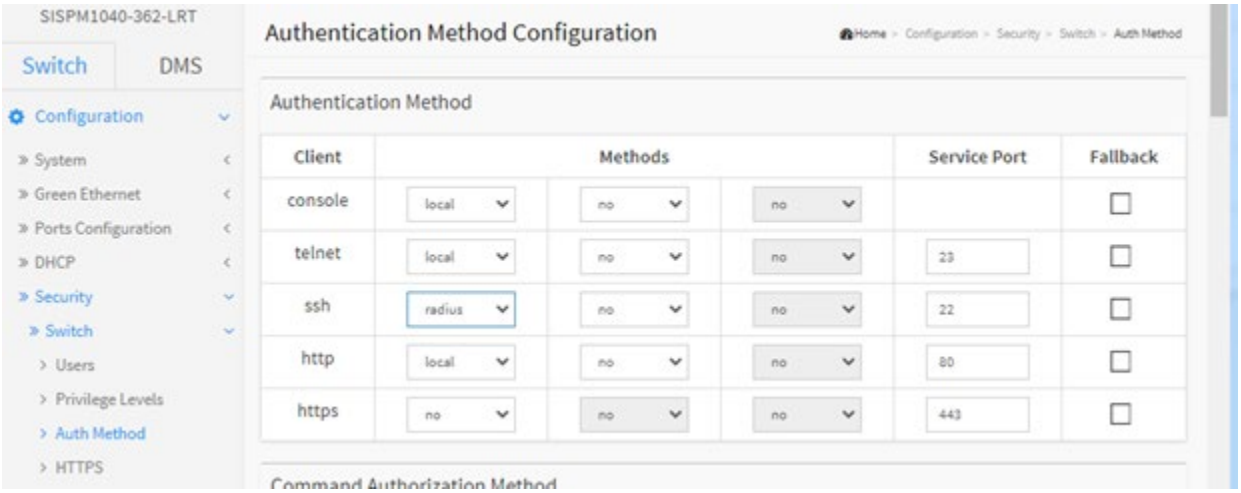
Note: The switch supports SFTP via "local, RADIUS and TACAS+" authentication credentials.

Note: Switch FW v7.10.0034 and above supports "local, RADIUS, TACAS+, SSH" authentication credentials with these SFTP features:

- Transfer startup-config from SolarWinds to switch, using SFTP protocol
- Transfer startup-config from switch to SolarWinds, using SFTP protocol
- Transfer running-config from SolarWinds to switch, using SFTP protocol
- Transfer running-config from switch to SolarWinds, using SFTP protocol
- Transfer firmware from SolarWinds to switch, using SFTP protocol

Authentication Method Configuration

Navigate to Configuration > Security > Switch > Auth Method to disply the Authentication Method Configuration page:



The message ***Warning****: When setting first method for 'ssh' to other than 'local', you may lose connectivity unless you set a later method for'ssh' to 'local'. Do you want to continue?* displays. Click OK to continue or click Cancel to quit.

1. CLI Command:

```
copy running-config sftp://buck:buck1@192.xxx.xxx.104/running-config save-host-key
```

Description: Transfer running-config from switch to SolarWinds using SFTP protocol, where 192.xxx.xxx.104 is the SFTP Server IP address.

Example:

```
login as: tech15
tech15@192.xxx.xxx.110's password:
SISPM1040-582-LRT# copy running-config sftp://buck:buck1@192.xxx.xxx.104/running-config
save-host-key
Building configuration...
% Saving 1417 bytes to server 192.xxx.xxx.104: /running-config_192.xxx.xxx.110_20110101
SISPM1040-582-LRT#
```

Note: 'buck' is the username for logging into SolarWinds, 'buck1' is the password, and the IP (.104) is the SFTP server.

2. CLI Command: **`copy startup-config sftp://buck:buck1@192.xxx.xxx.104/startup-config-radius save-host-key`**

Description: Transfer startup-config from switch to SolarWinds using SFTP protocol, where 192.xxx.xxx.104 is the SFTP Server IP address.

Example:

```
SISPM1040-582-LRT# copy startup-config sftp://buck:buck1@192.xxx.xxx.104/startup-config-
radius save-host-key
% Saving 1239 bytes to server 192.xxx.xxx.104: /startup-config-
radius_192.xxx.xxx.110_20110101
SISPM1040-582-LRT#
```

3. CLI Command: **`copy sftp://tech15:15tech@192.xxx.xxx.104/startup-config_192.xxx.xxx.110_20110101 startup-config save-host-key`**

Description: Transfer startup-config from SolarWinds to switch using SFTP protoco, where 192.xxx.xxx.104 is the SFTP Server IP address and 192.xxx.xxx.108 is the SISPM1040-582-LRT switch IP address. **Note**: 'tech15' is the username in RADIUS server and SFTP server, '15tech' is the Password, and the IP (.108) is the IP of the switch. Ensure correct file names are included in command syntax and included in the SFTP server SFTP-Root directory.

Example:

```
SISPM1040-582-LRT# copy sftp://tech15:15tech@192.xxx.xxx.104/startup-
config_192.xxx.xxx.110_20110101 startup-config save-host-key
% Loading /startup-config_192.xxx.xxx.110_20110101 from SFTP server 192.xxx.xxx.104
% Saving 1004 bytes to flash:startup-config
SISPM1040-582-LRT#
```

4. CLI Command:

`copy running-config sftp://tech15:15tech@192.xxx.xxx.104/running-config save-host-key`

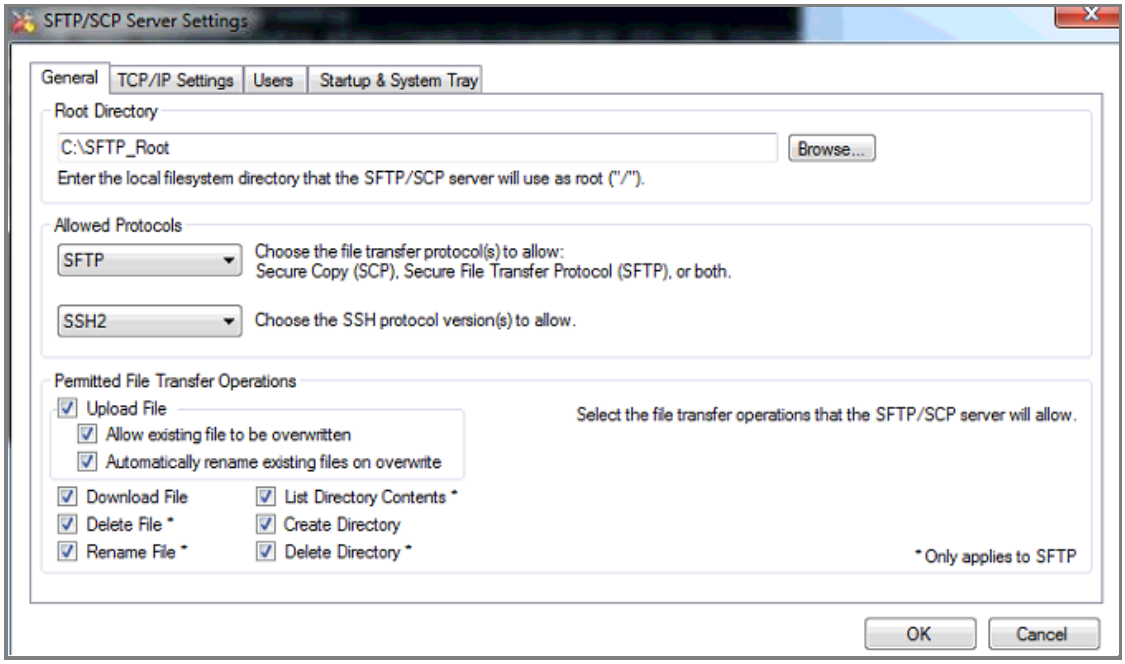
Description: Transfer running-config from SolarWinds to switch using SFTP protocol, where 192.xxx.xxx.104 is the SFTP Server IP address.

Example:

```
SISPM1040-582-LRT# copy running-config sftp://tech15:15tech@192.xxx.xxx.104/running-config
save-host-key
Building configuration...
% Saving 1417 bytes to server 192.xxx.xxx.104: /running-config_192.xxx.xxx.110_20110101
SISPM1040-582-LRT#
```

Solar Wind Settings

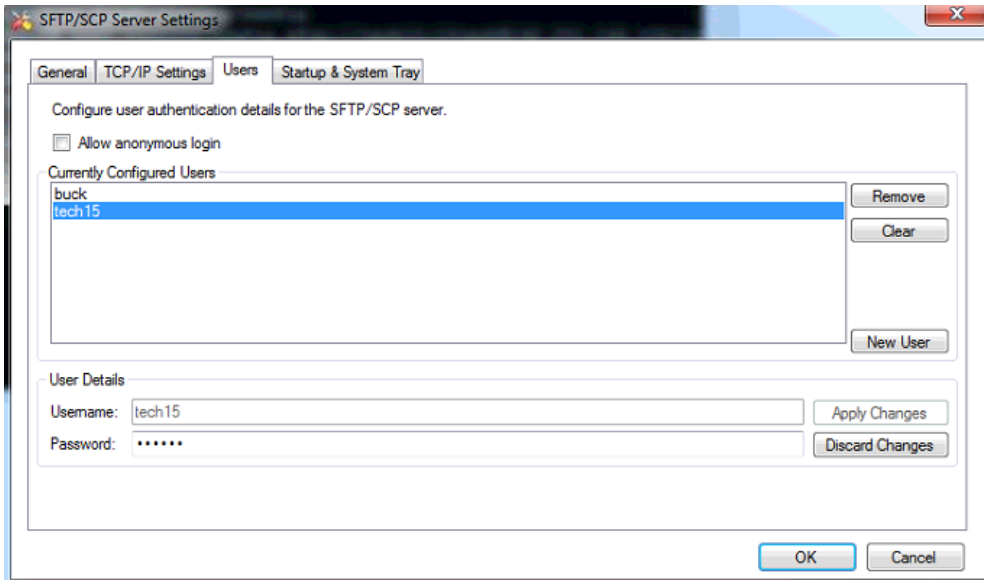
General tab



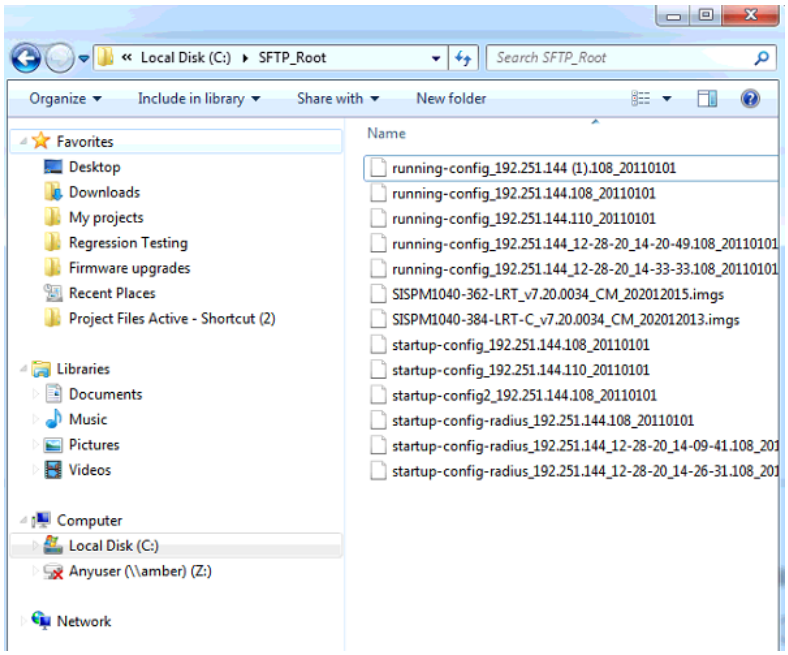
For Win10 pscp commands in SolarWinds see SFTP server. For more info see the documentation webpage.
For pscp information see Using PSCP with PuTTY.

Note that this manual provides links to third party web sites for which Lantronix is not responsible.
Your organization should internally review and assess to what extent, if any, such third-party content will be incorporated into your environment. You elect to use third-party content at your own risk, and you will be solely responsible for the incorporation of same if used.

Users tab



Windows Explorer



Messages: *File download failed*

Show messages % Error loading remote file: File upload failed, check permissions (27)

% Error loading remote file: File download failed, check permissions

Meaning: You typed the wrong filename to download file via SolarWinds SFTP server

Recovery: **1.** Verify permissions settings in SolarWinds. **2.** Re-entr the download file name. **3.** Continue operation.

SFTP Client Copy Commands

The SFTP Client copy commands for SSH / Telnet / Console used with SolarWinds version 20.4.0.76 are described below. These commands let you copy from a source to a destination. See the SolarWinds Free Trial Downloads webpage.

Command: **copy**

Copy 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 }]

copy running-config [startup-config | <url_file>]
copy startup-config [running-config | <url_file>]
copy <url_file> [startup-config | running-config]
copy running-config [startup-config | <url_file>] syntax-check
copy startup-config [running-config | <url_file>] syntax-check
copy <url_file> [startup-config | running-config] syntax-check
copy running-config [startup-config | <url_file>] syntax-check | { [begin | exclude | include] <line> }
copy startup-config [running-config | <url_file>] syntax-check | { [begin | exclude | include] <line> }
copy <url_file> [startup-config | running-config] syntax-check | { [begin | exclude | include] <line> }
copy running-config [startup-config | <url_file>] | { [begin | exclude | include] <line> }
copy startup-config [running-config | <url_file>] | { [begin | exclude | include] <line> }
copy <url_file> [startup-config | running-config] | { [begin | exclude | include] <line> }

Parameters:

<url_file>	File in FLASH or on TFTP/FTP/SFTP server. Syntax: <flash:filename | [tftp | ftp | sftp]://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.
running-config	Currently running configuration
startup-config	Startup configuration
merge	Merge source file with running-config
replace	Replace running-config with source file, default action
syntax-check	Perform syntax check on source configuration
source_path	The path of the source .
destination_path	The path of the destination .
save-host-key	Enable saving the host key.
ftp-active	Keep FTP active.
flash:filename	The name of the flash file.
protocol	The protocol to use.
username	The user name.
password	The password .
host	The host name.
port	The port number.
path	The file path.
|	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
Examples:	(See below.)

Copy (Upload) config Commands

CLI command: copy startup-config sftp://root:transition@192.168.1.248/SISPM1040-582-LRT_startup save-host-key
Description: Upload startup-config via SolarWinds SFTP sever, using Local authentication.

CLI command: copy startup-config sftp://root:transition@192.168.1.248/SISPM1040-582-LRT_startup save-host-key
Description: Upload startup-config via SolarWinds SFTP sever, using RADIUS authentication.

CLI command: copy startup-config sftp://root:transition@192.168.1.248/SISPM1040-582-LRT_startup save-host-key
Description: Upload startup-config via SolarWinds SFTP sever, using TACACS+ authentication.

Copy (Download) config Commands

CLI command: copy sftp://root:transition@192.168.1.248/SISPM1040-582-LRT_startup_192.168.1.202_20110101 startup-config save-host-key
Description: Download startup-config via SolarWinds SFTP sever, using Local authentication.

CLI command: copy sftp://root:transition@192.168.1.248/SISPM1040-582-LRT_startup_192.168.1.202_20110101 startup-config save-host-key
Description: Download startup-config via SolarWinds SFTP sever, using RADIUS authentication.

CLI command: copy sftp://root:transition@192.168.1.248/SISPM1040-582-LRT_startup_192.168.1.202_20110101 startup-config save-host-key
Description: Download startup-config via SolarWinds SFTP sever, using TACACS+ authentication.

Copy (Upload) config Commands

CLI command: copy running-config sftp://root:transition@192.168.1.248/SISPM1040-582-LRT_running save-host-key
Description: Upload running-config via SolarWinds SFTP sever, using Local authentication.

CLI command: copy running-config sftp://root:transition@192.168.1.248/SISPM1040-582-LRT_running save-host-key Upload running-config via SolarWinds SFTP sever, using RADIUS authentication.

CLI command: copy running-config sftp://root:transition@192.168.1.248/SISPM1040-582-LRT_running save-host-key
Description: Upload running-config via SolarWinds SFTP sever, using TACACS+ authentication.

CLI command: copy sftp://root:transition@192.168.1.248/SISPM1040-582-

LRT_running_192.168.1.202_20110101 running-config save-host-key
Description: Download running-config via SolarWinds SFTP sever, using Local authentication.
CLI command: copy sftp://root:transition@192.168.1.248/SISPM1040-582-LRT_running_192.168.1.202_20110101 running-config save-host-key
Description: Download running-config via SolarWinds SFTP sever, using RADIUS authentication.

CLI command: copy sftp://root:transition@192.168.1.248/SISPM1040-582-LRT_running_192.168.1.202_20110101 running-config save-host-key
Description: Download running-config via SolarWinds SFTP sever, using TACACS+ authentication.

Firmware Upgrade Commands

CLI command: firmware upgrade sftp://root:transition@192.168.1.248/SISPM1040-582-LRT_VB7.20.0034_CM_202010048.imgs save-host-key
Description: Firmware upgrade via SolarWinds SFTP sever, using Local authentication.

CLI command: firmware upgrade sftp://root:transition@192.168.1.248/SISPM1040-582-LRT_VB7.20.0034_CM_202010048.imgs save-host-key
Description: Firmware upgrade via SolarWinds SFTP sever, using RADIUS authentication.

CLI command: firmware upgrade sftp://root:transition@192.168.1.248/SISPM1040-582-LRT_VB7.20.0034_CM_202010048.imgs save-host-key
Description: Firmware upgrade via SolarWinds SFTP sever, using TACACS+ authentication.

Appendix C Percepxion and LPM Commands

Percepxion is Lantronix on-premise and cloud-hosted management platform that provides a single pane of glass for centralized management and automated monitoring of all deployed Lantronix Remote Environment Management and IoT products, along with real-time notifications, managed APIs and data dashboards. For more information see https://www.lantronix.com/percepxion/. Percepxion support requires switch firmware VB7.20.0191 or above.

Lantronix Provisioning Manager (LPM) is a software application that provisions, configures, and updates Lantronix devices for local site installations and deployments. LPM discovery is enabled by default and is not configurable. For more information see https://www.lantronix.com/products/lantronix-provisioning-manager/.

To enter Percepxion Config mode from Config mode:

```
SISPM1040-582-LRT(config)# percepxion <cr>
SISPM1040-582-LRT(config-percepxion)#
```

To display the set of available commands enter a ? (question mark):

```
SISPM1040-582-LRT(config-percepxion)# ?
```

Command Set

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, description, key, and name
do	To run exec commands in config mode
end	Go back to EXEC mode
exit	Exit from current mode
help	Description of the interactive help system
no	Removes device parameter(s)
show	Displays the current configuration
state	Percepxion state
status	Sets the status update interval

Command Descriptions

Command: **active**

Description: Sets the Percepxion active connection to Connection <number>.

Syntax: **active** connection connection <number>

Parameters:

	connection	Sets active connection to Connection <number>
	<1-2>	Sets active connection to Connection <1|2>

Mode: Configure Percepxion mode

Example:

```
SISPM1040-582-LRT(config-percepxion)# active connection connection 1
SISPM1040-582-LRT(config-percepxion)# active connection connection 2
SISPM1040-582-LRT(config-percepxion)#
```

Command: **apply**

Description: Sets the Percepxion mode on configuration updates and firmware updates.

Syntax:
apply configuration updates disable
apply configuration updates enable
apply firmware updates disable
apply firmware updates enable

Parameters:

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

Mode: Configure Percepxion mode

Example:

```
SISPM1040-582-LRT(config-percepxion)# apply configuration updates disable
SISPM1040-582-LRT(config-percepxion)# apply configuration updates enable
SISPM1040-582-LRT(config-percepxion)# apply firmware updates disable
SISPM1040-582-LRT(config-percepxion)# apply firmware updates enable
SISPM1040-582-LRT(config-percepxion)#
```

Command: **connection**

Description: Sets the Percepxion Connection 1 or Connection 2 parameters.

Syntax:
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

Parameters:

<1-2>	Sets the connection 1 or connection 2
connect	Sets the mode to connect
to	Sets the mode to connect
cloud	Sets the cloud mode to connect
on	Sets the on premise 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
<word256>	Sets the Hostname or IP address of Percepxion
<word256>	Sets the Device Description
<word32>	Sets the Device ID
<word32>	Sets the Device Key
<word256>	Sets the Device Name
<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
certificates	Sets the mode on certificate validation
disable	Disables certificate validation for Percepxion client
enable	Enables certificate validation for Percepxion client

Mode: Configure Percepxion mode

Example 1:

```
SISPM1040-582-LRT(config)# percepxion
SISPM1040-582-LRT(config-percepxion)# connection 1 host BobB
SISPM1040-582-LRT(config-percepxion)# connection 1 port 456
SISPM1040-582-LRT(config-percepxion)# connection 1 secure port enable
SISPM1040-582-LRT(config-percepxion)# connection 1 validate certificates enable
SISPM1040-582-LRT(config-percepxion)#
```

Example 2:

```
SISPM1040-582-LRT(config-percepxion)# connection 1 connect to on premise
SISPM1040-582-LRT(config-percepxion)# connection 1 connect to cloud
SISPM1040-582-LRT(config-percepxion)# connection 2 connect to cloud
SISPM1040-582-LRT(config-percepxion)# connection 2 connect to on premise
SISPM1040-582-LRT(config-percepxion)#
```

Command: **content**

Description: Sets the firmware and configuration check interval for Percepxion.

Syntax: **content** check interval <hours>

Parameters:

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

Mode: Configure Percepxion mode

Example:

```
SISPM1040-582-LRT(config-percepxion)# content check interval 9000
SISPM1040-582-LRT(config-percepxion)#
```

Command: **device**

Description: Sets the Device parameters for Percepxion.

Syntax: **device** description <device_desp>
device id <device_id>
device key <device_key>
device name <device_name>

Parameters:

description	Sets the Device Description
id	Sets the Device ID
key	Sets the Device Key
name	Sets the Device Name
<word256>	Sets the Device Description
<word32>	Sets the Device ID
<word32>	Sets the Device Key
<word256>	Sets the Device Name

Mode: Configure Percepxion mode

Example:

```
SISPM1040-582-LRT(config-percepxion)# device description 582-lrt
SISPM1040-582-LRT(config-percepxion)# device id **********************
SISPM1040-582-LRT(config-percepxion)# device key ++++++++++++++++++++++++
SISPM1040-582-LRT(config-percepxion)# device name 582-lrt
SISPM1040-582-LRT(config-percepxion)#
```

Command: **do**

Description: To run Exec commands in Config mode.

Syntax: **do** <command>

Parameters: <command> Command to be run

Mode: Configure Percepxion mode

Example:

```
SISPM1040-582-LRT(config-percepxion)# do show ip interface brief
Vlan Address             Method   Status
---- ------------------- -------- ------
   1 172.27.195.90/24     Manual   UP
SISPM1040-582-LRT(config-percepxion)# do enable
SISPM1040-582-LRT(config-percepxion)# do dir
Directory of flash:
    r- 2011-01-01 00:00:00     716 default-config
    rw 2011-01-01 00:02:12    1329 startup-config
    rw 2011-01-01 00:00:34    4795 mach10_combined.crt
3 files, 6840 bytes total.
SISPM1040-582-LRT(config-percepxion)#
```

Command: **end**

Description: Go back to EXEC mode.

Syntax: **end** <cr>

Parameters:

Mode: Configure Percepxion mode

Example:

```
SISPM1040-582-LRT(config-percepxion)# end
SISPM1040-582-LRT#
```

Command: **exit**

Description: Exit from current mode.

Syntax: **exit** <cr>

Parameters:

Mode: Configure Percepxion mode

Example:

```
SISPM1040-582-LRT(config-percepxion)# exit
SISPM1040-582-LRT(config)#
```

Command: **help**

Description: Description of the interactive help system.

Syntax: **help** <cr>

Parameters:

Mode: Configure Percepxion mode

Example:

```
SISPM1040-582-LRT(config-percepxion)# 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?'.)

SISPM1040-582-LRT(config-percepxion)#
```

Command: **no**

Description: Removes a device parameter.

Syntax: **no** device <id | key | name | description>

Parameters:

device	Removes a device parameter.
id	Removes the Device ID
key	Removes the Device Key
name	Removes the Device Name
description	Removes the Device Description

Mode: Configure Percepxion mode

Example:

```
SISPM1040-582-LRT(config-percepxion)# no device description
SISPM1040-582-LRT(config-percepxion)# no device name
SISPM1040-582-LRT(config-percepxion)#
```

Command: **show**

Description: Displays current Percepxion parameters.

Syntax: **show** connection <con>
show statistics
show <cr>

Parameters:

connection	Shows the Percepxion connection (Connection 1 or Connection 2)
statistics	Displays the Percepxion statistics
<1-2>	Shows the Percepxion connection (Connection 1 or Connection 2)
<cr>	

Mode: Configure Percepxion mode

Example 1:

```
SISPM1040-582-LRT(config-percepxion)# show connection 1
Percepxion Connection 1 Configuration:
Connect To : Cloud
Host : api.percepxion.ai
Port : 443
Secure Port : Enabled
Validate Certificates: Enabled

SISPM1040-582-LRT(config-percepxion)# show connection 2
Percepxion Connection 2 Configuration:
Connect To : Cloud
Host : api.percepxion.ai
Port : 443
Secure Port : Enabled
Validate Certificates: Enabled

SISPM1040-582-LRT(config-percepxion)#
```

Example 2:

```
SISPM1040-582-LRT(config-percepxion)# show <cr>
Percepxion Configuration:
State : Enabled
Device ID :
Device Key : (Configured)
Device Name : SISPM1040-582-LRT-3E8B
Device Description : Lantronix SISPM1040-582-LRT
Status Update Interval : 1 minutes
Content Check Interval : 1 minutes
Apply Firmware Updates : Enabled
Apply Configuration Updates : Enabled
Active Connection : Connection 1
Connection 1 Host : api.percepxion.ai
Connection 1 Port : 443
Connection 1 Secure Port : Enabled
Connection 1 Validate Certificates: Enabled

Connection 2 Host : api.percepxion.ai
Connection 2 Port : 443
Connection 2 Secure Port : Enabled
Connection 2 Validate Certificates: Enabled

SISPM1040-582-LRT(config-percepxion)#
```

Example 3:

```
SISPM1040-582-LRT(config-percepxion)# show statistics
Client Status : Running
Not registered -
Last Status Update : Not available
Last Content Check : Not available
Available Firmware Updates: Not available
Available Configuration Updates: Not available
SISPM1040-582-LRT(config-percepxion)#
```

Command: **state**

Description: Sets the Percepxion state to enabled or disabled.

Syntax: **state** disable | enable

Parameters:

disable	Disables the Percepxion client
enable	Enables the Percepxion client

Mode: Configure Percepxion mode

Example:

```
SISPM1040-582-LRT(config-percepxion)# state disable
SISPM1040-582-LRT(config-percepxion)# state enable
SISPM1040-582-LRT(config-percepxion)#
```

Command: **status**

Description: Sets the Percepxion status update interval.

Syntax: **status** update interval <minutes>

Parameters:

update	Sets the status update interval
interval	Sets the status update interval
<1-1440>	Sets the status update interval

Mode: Configure Percepxion mode

Example:

```
SISPM1040-582-LRT(config-percepxion)# status update interval 1
SISPM1040-582-LRT(config-percepxion)# status update interval 1440
SISPM1040-582-LRT(config-percepxion)#
```

Appendix D Service, Warranty & Tech Support

See the SISPM1040-582-LRT Install Guide for related information.

Appendix E Compliance Information

See the SISPM1040-582-LRT Install Guide for related information.

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