



SISPM1040-384-LRT-C



SISPM1040-362-LRT

## SISPM1040-384-LRT-C and SISPM1040-362-LRT

Managed Hardened Gigabit Ethernet PoE+ Switch

CLI Reference

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## Revision History

Date	Rev.	Description of Changes
9/13/21	H	FW v7.20.0075: add API command get_config_action_status. Fix API cannot delete old interface vlan. Add Reboot System "When DI was changed to abnormal". Fix DDM information update problem and fix PoE force mode cannot be saved issue. Fix DI/DO: after triggering DI reboot system event, Server may not receive syslog event. Fix PMD auto negotiation advertised capability info is wrong in LLDP packet of fiber ports. Add ' SystemDORelayOpenClose' to MIB. Fix port link up when inserting TN-EOT-xx copper SFP module. Remove debug commands.
9/28/22	J	FW v 7.20.0121: update RADIUS server and add two new DMS icons. 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 Client support, add Lantronix Provisioning Manager (LPM) support, and fix ERPS Failover time. Delete CLI Command Summary.
10/10/23	K	FW v7.20.0190: Add PercepXion support, support API in https. Fix issues with DeviceKey, Firmware Version update, and Serial # for PercepXion and MAC address for LPM. Update SSH. Add PoE Status to Device Telemetry Data. Add TLSv1.2 ciphers. Add two public OIDs (1.3.6.1.2.1.4.20.1.2 and 1.3.6.1.2.1.4.20.1.3). Fix Invalid file name "mach10_combined.crt" on config download, upload, activate, and delete pages. Automatically save Configuration Update from PercepXion Explore tab and configuration of all element changes to Start-Up Config.
10/15/24	L	FW v 7.20.0206: <ul style="list-style-type: none"> <li>• Update PercepXion.</li> <li>• Modify Device/Product type API format and fix Cable Diagnostics function.</li> <li>• Add Capability Negotiation Definition with PercepXion Server.</li> <li>• Add Note that Telnet is not secure.</li> <li>• Add cautions on using PoE 'Force' mode.</li> <li>• Update 'DHCP per Port VLAN' description.</li> </ul> See the Release Notes for more information.
3/10/2025	M	FW v7.20.0215: <ul style="list-style-type: none"> <li>• Add support for MAC Authentication Bypass (MAB) for port-based access control.</li> <li>• Update PercepXion description.</li> </ul> See the Release Notes for more information.
August 2025	N	Add instructions for generating and uploading a self-signed certificate.

## Safety Warnings and Cautions

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**Attention:** This product, like all electronic products, uses semiconductors that can be damaged by ESD (electrostatic discharge). Always observe appropriate precautions when handling.



**Note:** Emphasizes important information or calls your attention to related features or instructions.



**Caution:** Alerts you to a potential hazard that could cause loss of data or damage the system or equipment.



**Warning:** Alerts you to a potential hazard that could cause personal injury.

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# 1. Introduction

## About This Manual

This manual gives specific information on how to operate CLI (Command Line Interface) to manage this switch. The manual is intended for use by network administrators who are responsible for operating and maintaining network equipment. It assumes a strong knowledge of Ethernet switch functions, the RS-232 Console, Internet Protocol (IP), and Telnet Protocol.

## Related Manuals

These manuals give specific information on how to use the switch:

- Quick Start Guide, SISPM1040-384-LRT-C & -362-LRT, 33726
- Install Guide, SISPM1040-384-LRT-C & -362-LRT, 33727
- CLI Reference, SISPM1040-384-LRT-C & -362-LRT, 33729
- API User Guide for SISPM1040-384-LRT-C and -362-LRT, 33824
- Release Notes (version specific)

For Lantronix Drivers, Firmware, Manuals, Product Notifications, Warranty Policy & Procedures, etc. go to the Lantronix [Technical Resource Center](#). Note that this manual provides links to third party web sites for which Lantronix is not responsible.

## 2. Initial Switch Setup

This section provides a brief description of the network connection required for the CLI.

1. Locate the correct DB-9 (RS-232) cable with female DB-9 connector. The RS-232 cable is used for connecting a terminal or terminal emulator to the Managed Switch's RJ45 port to access the CLI.
2. Attach the RJ45 serial port on the switch's front panel which is 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, a PC running Microsoft Windows HyperTerminal utility.
4. At the "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

### 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 an SSH/Telnet\* session (default IP address: **192.168.1.77**). The default user and password to login into the Managed Switch are Username: **admin** and Password: **admin**.

After you login 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 an administrator, the prompt displays as "<sys\_name>>", which means you are a guest and are less privileges for setting the system than an administrator. Each CLI command has a privilege level of 0-15.

```
Username: admin
Password:
SISPM1040-384-LRT-C#
```

**Note:** Telnet is not secure and can expose data to potential eavesdroppers. SSH should be used for more secure communication.

## 3. CLI Management

### Privilege Levels

Every command has a privilege level (0-15). You 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.

### CLI Command Modes

The CLI is divided into several modes. If you have a high enough privilege to run a particular command, you can run the command in the correct mode. To see the commands within a mode, enter "?" after the system prompt, then all commands will be listed on the screen. The command modes are listed 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

### Changing Between Command Modes

Commands residing in the corresponding modes can run only in that mode. If you want to run a particular command, you must change to the appropriate mode. The command modes are organized as a tree, starting in enable mode. The following table explains how to change from one mode to another.

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

## Command Line Controls

To navigate the command line:

Control	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	Show available commands in tabular format

## 4. Exec Mode Commands

At the Exec mode prompt, enter a ? and press Enter to display the available Exec mode commands.

```
SISPM1040-384-LRT-C# ?
    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
SISPM1040-384-LRT-C#
```

**exit**

Exit from EXEC mode. You are logged out of the session.

**Syntax:**

**exit**

**Parameters:**

None.

**Example:**

```
SISPM1040-384-LRT-C# exit
```

```
Username:
```

```
Password:
```

**erps**

Set up Ethernet Ring Protection Switching in Exec mode. Note that you can also configure ERPS parameters in Config mode. ERPS (Ethernet Ring Protection Switching) is defined in ITU/T G.8032. It provides fast protection and recovery switching for Ethernet traffic in a ring topology while also ensuring that the Ethernet layer remains loop-free. Note that Spanning Tree must be disabled for Ring operation.

See “[Appendix A G.8032 Major and Sub Rings Configuration](#)” on page 336 for more information.

**Syntax:**

```
erps <group> command { force | manual | clear } { port0 | port1 }
```

**Parameters:**

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

**Example:**

```
SISPM1040-384-LRT-C# erps 1 command clear port0
% ERPS group 1: Generic error occurred
SISPM1040-384-LRT-C# erps 1 command clear port0
SISPM1040-384-LRT-C# 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 M-I 2 Rev Gi 1/1      U B Gi 1/2      U U -  -  -  -   PEND Y  N
 2 S-I 2 Rev Gi 1/4      U B -            U U 1  -  -  -   PEND Y  N
SISPM1040-384-LRT-C#
```

## help

Description of the interactive help system.

### Syntax:

**help**

### Parameters:

None.

### Example:

```
SISPM1040-384-LRT-C# 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?'.)

```
SISPM1040-384-LRT-C#
```

## logout

Exit from EXEC mode. Press ENTER to get started.

### Syntax:

**logout**

### Parameter:

<Enter>

### Example:

```
SISPM1040-384-LRT-C# logout
```

```
Username:
```

```
Password:
```

**end**

Go back to EXEC mode.

**Syntax:**

**end**

**Example:**

```
SISPM1040-362-LRT(config)# end?
end      Go back to EXEC mode
<cr>
SISPM1040-362-LRT(config)# end ?
<cr>
SISPM1040-362-LRT(config)# end
SISPM1040-362-LRT#
```

**CableDiag**

Cable Diagnostic keyword.

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  
                   <cr>

**Example:**

```
SISPM1040-384-LRT-C# CableDiag interface GigabitEthernet 1/3
Starting Cable Diagnostic - Please wait
Interface            Link Status    Test Result    Length
-----
GigabitEthernet 1/3    1G            detect error or check cable length is between 7-120
meters
SISPM1040-384-LRT-C# CableDiag interface GigabitEthernet 1/4
Starting Cable Diagnostic - Please wait
Interface            Link Status    Test Result    Length
-----
GigabitEthernet 1/4    100M          OK              3(m)
SISPM1040-384-LRT-C#
```

**platform**

Platform configuration. **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**

debug     Debug command setting

**Example:**

```
SISPM1040-384-LRT-C# 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.
```

```
SISPM1040-384-LRT-C#
```

## 5. Clear Commands

**Table : CLEAR Commands**

<b>Command</b>	<b>Function</b>
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
ipv6	IPv6 configuration
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

### **access**

Clear Access management.

#### **Syntax:**

```
clear access management statistics
```

#### **Parameters:**

**management** Access management configuration.

**statistics** Statistics data.

#### **Example:**

```
SISPM1040-384-LRT-C# clear access management statistics?
statistics Statistics data
<CR>
SISPM1040-384-LRT-C# clear access management statistics ?
<CR>
SISPM1040-384-LRT-C# clear access management statistics
SISPM1040-384-LRT-C#
```

**access-list**

Clear Access list.

**Syntax:**

**Clear** access-list ace statistics

**Parameters:**

**ace** Access list entry

**statistics** Traffic statistics

**Example:**

```
SISPM1040-384-LRT-C# clear access-list ace statistics?
statistics      Traffic statistics
<cr>
SISPM1040-384-LRT-C# clear access-list ace statistics ?
<cr>
SISPM1040-384-LRT-C# clear access-list ace statistics
SISPM1040-384-LRT-C#
```

**dot1x**

Clear IEEE Standard for port-based Network Access Control.

**Syntax**

**Clear** dot1x statistics

**Clear** dot1x statistics interface GigabitEthernet < PORT\_TYPE\_LIST >

**Parameters**

**statistics** Clears the statistics counters

**interface** Interface

**GigabitEthernet** 1 Gigabit Ethernet Port

**PORT\_TYPE\_LIST** Port list in 1/1-8 for Gigabitethernet

**EXAMPLE**

```
SISPM1040-384-LRT-C# clear dot1x statistics interface ?
*                All switches or All ports
GigabitEthernet 1 Gigabit Ethernet Port
SISPM1040-384-LRT-C# clear dot1x statistics interface GigabitEthernet 1/1-8
SISPM1040-384-LRT-C#
```



**ip**

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**

<b>arp</b>	Clear ARP cache
<b>dhcp</b>	Dynamic Host Configuration Protocol
<b>igmp</b>	Internet Group Management Protocol
<b>statistics</b>	Traffic statistics
<b>relay</b>	DHCP relay agent configuration
<b>snooping</b>	DHCP snooping
<b>interface</b>	Select an interface to configure
<b>GigabitEthernet</b>	1 Gigabit Ethernet Port
<b>vlan</b>	IPv4 traffic interface
<b>&lt;vlan_list&gt;</b>	VLAN identifier(s): VID

**EXAMPLE**

```
SISPM1040-384-LRT-C# clear ip arp
SISPM1040-384-LRT-C# clear ip dhcp ?
  detailed    Detailed statistics
  relay       DHCP relay agent configuration
  server      Miscellaneous DHCP server information
  snooping    DHCP snooping
SISPM1040-384-LRT-C# clear ip igmp ?
```

```

snooping    Snooping IGMP
SISPM1040-384-LRT-C# clear ip igmp snooping ?
statistics  Running IGMP snooping counters
vlan        Search by VLAN
SISPM1040-384-LRT-C# clear ip igmp snooping vlan ?
<vlan_list>  VLAN identifier(s): VID
SISPM1040-384-LRT-C# clear ip igmp snooping statistics
SISPM1040-384-LRT-C#

```

## ipv6

Clear IPv6 configuration commands.

### Syntax

**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> ]

### Parameters

<b>mld</b>	Multicast Listener Discovery
<b>neighbors</b>	Ipv6 neighbors
<b>statistics</b>	Traffic statistics
<b>snooping</b>	Snooping MLD
<b>statistics</b>	Running MLD snooping counters
<b>vlan</b>	Ipv6 interface traffic
<b>&lt;vlan_list&gt;</b>	VLAN identifier(s): VID
<b>icmp</b>	IPv6 ICMP traffic
<b>icmp-msg</b>	IPv6 ICMP traffic for designated message type
<b>interface</b>	Select an interface to configure
<b>system</b>	IPv6 system traffic
<b>&lt; 0~255&gt;</b>	ICMP message type ranges from 0 to 255

### EXAMPLE

```

SISPM1040-384-LRT-C# clear ipv6 mld ?
snooping    Snooping MLD
SISPM1040-384-LRT-C# clear ipv6 mld snooping ?
statistics  Running MLD snooping counters

```

```

vlan          Search by VLAN
SISPM1040-384-LRT-C# clear ipv6 neighbors
SISPM1040-384-LRT-C# clear ipv6 statistics ?
icmp          IPv6 ICMP traffic
icmp-msg      IPv6 ICMP traffic for designated message type
interface     Select an interface to configure
system       IPv6 system traffic
<cr>
SISPM1040-384-LRT-C# clear ipv6 statistics
SISPM1040-384-LRT-C#

```

## larp

Clear LACP statistics.

### Syntax

**Clear larp** statistics

### Parameters

**statistics** Clear all LACP statistics

### EXAMPLE

```

SISPM1040-384-LRT-C# clear larp statistics ?
<cr>
SISPM1040-384-LRT-C# clear larp statistics
SISPM1040-384-LRT-C# clear larp statistics?
statistics   Clear all LACP statistics
<cr>
SISPM1040-384-LRT-C# clear larp statistics

```

## lldp

Clear LLDP statistics.

### Syntax

**Clear lldp** statistics

**Clear lldp** statistics | begin | exclude | include << LINE >

### Parameters

**statistics** Clears LLDP statistics.

---

	Output modifiers
<b>begin</b>	Begin with the line that matches
<b>exclude</b>	Exclude lines that match
<b>include</b>	Include lines that match
<b>&lt;LINE&gt;</b>	String to match output lines

**EXAMPLE**

```
SISPM1040-384-LRT-C# clear lldp statistics | begin LINE
SISPM1040-384-LRT-C# clear lldp statistics ?
|          Output modifiers
global    Clear global counters
interface Interface keyword.
<cr>
SISPM1040-384-LRT-C# clear lldp statistics
```

**logging**

Clear Syslog.

**Syntax**

**clear logging** [ info ] [ warning ] [ error ] [ switch <switch\_list> ]

**Parameters**

**error**        Error  
**info**         Information  
**warning**     Warning

**EXAMPLE**

```
SISPM1040-384-LRT-C# clear logging ?
alert      Severity 1: Action must be taken immediately
crit       Severity 2: Critical conditions
debug      Severity 7: Debug-level messages
emerg      Severity 0: System is unusable
error      Severity 3: Error conditions
info       Severity 6: Informational messages
notice     Severity 5: Normal but significant condition
warning    Severity 4: Warning conditions
<cr>
SISPM1040-384-LRT-C# clear logging info error warning
SISPM1040-384-LRT-C#
```

**mac**

Clear MAC Address Table.

**Syntax**

**Clear mac** address-table

**Parameters**

**address-table**    Flush MAC Address table.

**EXAMPLE**

```
SISPM1040-384-LRT-C# clear mac ?
address-table  Flush MAC Address table
SISPM1040-384-LRT-C# clear mac address-table ?
<cr>
SISPM1040-384-LRT-C# clear mac address-table
```



**mvr**

Clear Multicast VLAN Registration configuration.

**Syntax**

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

**Parameters**

<b>name</b>	MVR multicast name
<b>statistics</b>	Running MVR protocol counters
<b>vlan</b>	MVR multicast vlan
<b>&lt; word16&gt;</b>	MVR multicast VLAN name
<b>&lt;vlan_list&gt;</b>	MVR multicast VLAN list

**EXAMPLE**

```
SISPM1040-384-LRT-C# clear mvr?
  mvr      Multicast VLAN Registration configuration
SISPM1040-384-LRT-C# clear mvr ?
  name      MVR multicast name
  statistics Running MVR protocol counters
  vlan      MVR multicast vlan
SISPM1040-384-LRT-C# clear mvr vlan 25 statistics
% Invalid MVR VLAN ID 25.
SISPM1040-384-LRT-C#
```

**port-security**

Clear Enable/disable port security globally.

**Syntax**

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

**Parameters**

<b>sticky</b>	port security sticky function per interface.
<b>All</b>	clear all sticky mac at all ports
<b>interface</b>	Choose port
<b>*</b>	All switches or All ports
<b>GigabitEthernet</b>	1 Gigabit Ethernet Port
<b>&lt;port_type_list&gt;</b>	Port list in 1/1-12

**EXAMPLE**

```
SISPM1040-384-LRT-C# clear port-security sticky interface GigabitEthernet 1/3
```

## SISPM1040-384-LRT-C#

**ptp**

Clear clear an existing PTP instance's servo.

**Syntax**

see below

**Parameters**

see below

**EXAMPLE**

```
SISPM1040-384-LRT-C# clear ptp ?
<0-3>
SISPM1040-384-LRT-C# clear ptp 3 ?
servo
SISPM1040-384-LRT-C# clear ptp 3 servo ?
<cr>
SISPM1040-384-LRT-C# clear ptp 3 servo
Clock instance 3 : does not exist
%% Failed to set network-clock configuration.

SISPM1040-384-LRT-C# clear ptp 0 servo ?
<cr>
SISPM1040-384-LRT-C# clear ptp 0 servo
Clock instance 0 : does not exist
%% Failed to set network-clock configuration.
SISPM1040-384-LRT-C#
```

**sflow**

Clear Statistics flow.

**Syntax**

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

**Parameters**

<b>interface</b>	Interface
<b>receiver</b>	Clear statistics for receiver.
<b>&lt;port_type&gt;</b>	GigabitEthernet
<b>&lt;Samplers : option&gt;</b>	runtime

**<port\_type\_list>** Port list in 1/1-8 for Gigabitethernet

**EXAMPLE**

```
SISPM1040-384-LRT-C# clear sflow statistics ?
  receiver    Clear statistics for receiver.
  samplers    Clear statistics for samplers.
SISPM1040-384-LRT-C# clear sflow statistics receiver
SISPM1040-384-LRT-C#
```

**spanning-tree**

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**

<b>detected-protocols</b>	Set the STP migration check
<b>statistics</b>	STP statistics
<b>interface</b>	Choose port
<b>&lt;port_type&gt;</b>	GigabitEthernet
<b>&lt;port_type_list&gt;</b>	Port list in 1/1-8 for Gigabitethernet

**EXAMPLE**

```
SISPM1040-384-LRT-C# clear spanning-tree?
spanning-tree    STP Bridge
SISPM1040-384-LRT-C# clear spanning-tree ?
detected-protocols    Set the STP migration check
statistics            STP statistics
SISPM1040-384-LRT-C# clear spanning-tree detected-protocols ?
interface    Choose port
<cr>
SISPM1040-384-LRT-C# clear spanning-tree statistics ?
interface    Choose port
<cr>
SISPM1040-384-LRT-C# clear spanning-tree detected-protocols interface GigabitEthernet 1/1-8
SISPM1040-384-LRT-C# clear spanning-tree statistics
SISPM1040-384-LRT-C#
```

## statistics

Clear statistics for a given interface.

### Syntax

```
clear statistics interface <port_type> <port_type_list>
```

```
clear statistics <port_type> <port_type_list>
```

### Parameters

<port\_type>                    GigabitEthernet

<port\_type\_list>            Port list in 1/1-8 for Gigabitethernet

### EXAMPLE

```
SISPM1040-384-LRT-C# clear statistics ?
*
GigabitEthernet  1 Gigabit Ethernet Port
interface        Interface
SISPM1040-384-LRT-C# clear statistics GigabitEthernet ?
<port_type_list>  Port list in 1/1-12
SISPM1040-384-LRT-C# clear statistics GigabitEthernet 1/2-6 ?
*
GigabitEthernet  1 Gigabit Ethernet Port
<cr>
SISPM1040-384-LRT-C# clear statistics GigabitEthernet 1/2-6
SISPM1040-384-LRT-C#
```

## 6. Configure Mode Commands

At the Exec mode prompt, enter `configure terminal <cr>` to enter config mode.

The Config mode commands are listed and described below.

<b>Command</b>	<b>Function</b>
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	Set autologout time
exit	Exit from current mode
green-ethernet	Green ethernet (Power reduction)
gvrp	Enable GVRP feature
help	Description of the interactive help system
hostname	Set system's network name
interface	Select an interface to configure

---

ip	Internet Protocol
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
percepixon	Percepixon 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

**terminal**

Configure from the terminal (enter Config mode).

**Syntax**

**configure terminal**

**EXAMPLE**

```
SISPM1040-384-LRT-C# configure ?
  terminal    Configure from the terminal
SISPM1040-384-LRT-C# configure terminal ?
  <cr>
SISPM1040-384-LRT-C# configure terminal
SISPM1040-384-LRT-C(config)#
```

**aaa**

Configure Authentication, Authorization and Accounting.

For information about creating and uploading a self-signed certificate, see [Generating and Uploading a Self-Signed Certificate](#) on page 366.

**SYNTAX**

```

aaa accounting http tacacs [ exec ]

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

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 http tacacs [ fallback ]

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

```

**Parameters**

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

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# aaa accounting console tacacs commands 15 exec
SISPM1040-384-LRT-C(config)# aaa authentication login console local fallback
SISPM1040-384-LRT-C(config)# aaa authorization console tacacs commands 15 config-commands
SISPM1040-384-LRT-C(config)#
```

**access**

Configure Access management.

**SYNTAX**

**access** management

**access** management <access\_id> <access\_vid> <start\_addr> [ to <end\_addr> ] { [ web ] [ snmp ] [ telnet ] | all }

**Parameters**

<b>management</b>	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
<b>all</b>	All services
<b>snmp</b>	SNMP service
<b>telnet</b>	TELNET/SSH service
<b>to</b>	End address of the range
<b>web</b>	Web service
<cr>	If you enter access management <cr> you are locked out of this management instance and must Reset the switch and log back in again.

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# access management ?
<1-16>   ID of access management entry
<cr>

SISPM1040-384-LRT-C(config)# access management 10 3 192.168.1.1 all
SISPM1040-384-LRT-C(config)# access management 1 ?
<1-4095> The VLAN ID for the access management entry
SISPM1040-384-LRT-C(config)# access management 1 20 ?
<ipv4_addr> Start IPv4 address
<ipv6_addr> Start IPv6 address
```

```
SISPM1040-384-LRT-C(config)# access management 1 20 192.168.1.1  
SISPM1040-384-LRT-C(config)#
```

**aggregation**

Configure Aggregation mode.

**SYNTAX**

```
aggregation mode {[ dmac ][ ip ][ dmac ][ port ]}
```

**Parameters**

<b>mode</b>	Traffic distribution mode
<b>dmac</b>	Destination MAC affects the distribution
<b>ip</b>	IP address affects the distribution
<b>port</b>	IP port affects the distribution
<b>smac</b>	Source MAC affects the distribution

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# aggregation ?
  mode      Traffic distribution mode
SISPM1040-384-LRT-C(config)# aggregation 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
SISPM1040-384-LRT-C(config)# aggregation mode dmac ?
  ip        IP address affects the distribution
  port      IP port affects the distribution
  smac      Source MAC affects the distribution
  <cr>
SISPM1040-384-LRT-C(config)# aggregation mode dmac ip ?
  port      IP port affects the distribution
  smac      Source MAC affects the distribution
  <cr>
SISPM1040-384-LRT-C(config)# aggregation mode dmac ip port ?
  smac      Source MAC affects the distribution
  <cr>
SISPM1040-384-LRT-C(config)# aggregation mode dmac ip port smac
SISPM1040-384-LRT-C(config)#
```

## ***always-on-poe***

Enable Always On PoE. Always-on PoE ensures uninterrupted PoE power to the PDs even when a switch is upgraded or restarted.

### **SYNTAX**

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

### **Parameters**

|           Output modifiers

### **EXAMPLE**

```
SISPM1040-384-LRT-C(config)# always-on-poe
Always On PoE Status : Enable
SISPM1040-384-LRT-C(config)# do show always-on-poe
Always On PoE Status : Enable
SISPM1040-384-LRT-C(config)#
```

## ***banner***

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**

```
SISPM1040-384-LRT-C(config)# banner exec ?
<line>    c banner-text c, where 'c' is a delimiting character
SISPM1040-384-LRT-C(config)# banner login ?
<line>    c banner-text c, where 'c' is a delimiting character
SISPM1040-384-LRT-C(config)# banner motd ?
<line>    c banner-text c, where 'c' is a delimiting character
SISPM1040-384-LRT-C(config)#
```

**clock**

Configure time-of-day clock.

**SYNTAX**

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

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

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

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

**Parameters**

<b>set</b>	set clock
<b>summer-time</b>	Configure summer (daylight savings) time
<b>timezone</b>	Configure time zone
<b>&lt;date&gt;</b>	yyyy/mm/dd
<b>&lt;time&gt;</b>	hh:mm:ss
<b>&lt;2000-2097&gt;</b>	Year to start
<b>hh:mm</b>	Time to start (hh:mm)
<b>&lt;1-12&gt;</b>	Month to end
<b>&lt;1-31&gt;</b>	Date to end
<b>&lt;2000-2097&gt;</b>	Year to end
<b>hh:mm</b>	Time to end (hh:mm)
<b>&lt;1-1440&gt;</b>	Offset to add in minutes
<b>&lt;1-5&gt;</b>	Week number to start
<b>&lt;1-7&gt;</b>	Weekday to start
<b>&lt;1-12&gt;</b>	Month to start
<b>&lt;-23-23&gt;</b>	Hours offset from UTC
<b>&lt;-59-59&gt;</b>	Minutes offset from UTC

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# clock set 2023/03/02 12:48:32
2023-03-02T12:48:32+00:00
SISPM1040-384-LRT-C(config)# clock timezone UTZ 4 6 7
SISPM1040-384-LRT-C(config)#SISPM1040-384-LRT-C(config)#
```

## **command-history-log**

Enable saving command History to flash memory.

### **SYNTAX**

```
command-history-log <cr>
```

### **Parameters**

None.

### **EXAMPLE**

```
SISPM1040-384-LRT-C(config)# command-history-log
SISPM1040-384-LRT-C(config)# exit
SISPM1040-384-LRT-C# show command-history-log status
The status of termal for Command History Feature : Enable
```

## **default**

Set a access list rate limiter to its defaults.

### **SYNTAX**

```
default access-list rate-limiter [ <rate_limiter_list> ]
```

### **Parameters**

<b>access-list</b>	Access list
<b>rate-limiter</b>	Rate limiter
<b>&lt;RateLimiterId : 1-16&gt;</b>	Rate limiter ID

### **EXAMPLE**

```
SISPM1040-384-LRT-C(config)# default access-list rate-limiter ?
<1~16>   Rate limiter ID
<cr>
SISPM1040-384-LRT-C(config)# default access-list rate-limiter 1 ?
<cr>
SISPM1040-384-LRT-C(config)# default access-list rate-limiter 1
SISPM1040-384-LRT-C(config)#
```

**dms**

Enable DMS mode and set parameters. Lantronix DMS (Device Management System) is an intelligent management tool embedded in the switch to intuitively help reduce support time, cost, and effort.

**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. You can choose the priority of the switch.
high	DMS priority is high ; this will be the DMS Controller (Master) switch.
low	DMS priority is low
mid	DMS priority is mid-level
non	DMS priority is none ; this switch will never become the DMS controller (Master) switch.

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# dms service-mode enabled priority mid
SISPM1040-384-LRT-C(config)# dms service-mode enabled priority high
SISPM1040-384-LRT-C(config)# do show dms
DMS Controller Capability : On
Discovery : Arp->On, UPNP->On, NBNS->On, LLDP->On, Onvif->On, Bonjour->On
DMS total device: 4

===== DMS Entry Information Start =====
(001),MAC(00-c0-f2-49-20-1c),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(169.254.250.15),IP1_U(3),UM(0),vid(1),prio(99),manufacturers( SISPM1040
-384-LRT-C),d_name(SISPM1040-384-LRT-C),type(1001)(12),status(1),PoE(231),group(
0)(0),app_fw(0)(0)(0),time(3746)

(002),MAC(00-09-18-4e-20-e9),PA_MAC(00-c0-f2-49-20-1c),port(4),p_port(0),up_link
_MAC(00-00-00-00-00-00),up_link_port(0),C_IP(192.168.1.100),C_sub(0.0.0.0),C_gw(
0.0.0.0),http_port(80),IP1(192.168.1.100),IP2(169.254.7.49),IP1_U(2),UM(0),vid(1
),prio(99),manufacturers( ),d_name(),auth(admin/admin),type(3001)(0),status(1)(0
)(0),PoE(NoN),account(admin),pwd(admin),media(),profile(),strim(),info/auth(6145
```

```
/6145),group(0)(0)(1),app_fw(0)(0)(0),ver(),time(3740)

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

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

===== DMS Grouping Information end =====
SISPM1040-384-LRT-C#
```

**Note:** Use the **do show dms** command in Config mode to display the current DMS config.

## do

Run Exec mode commands in Config mode.

### SYNTAX

```
do <LINE >{[<LINE >]}
```

### Parameters

<LINE>                    Exec Command

### EXAMPLE

```
SISPM1040-384-LRT-C(config)# do show version brief
Version       : SISPM1040-384-LRT-C (standalone) v7.20.0215
Build Date    : 2024-03-27T16:26:55+08:00
SISPM1040-384-LRT-C(config)#
```

**dot1x**

IEEE Standard for port-based Network Access Control.

**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**

<b>authentication</b>	Authentication
<b>feature</b>	Globally enables/disables a dot1x feature functionality
<b>guest-vlan</b>	Guest VLAN
<b>max-reauth-req</b>	Guest VLAN ID used when entering the Guest VLAN.
<b>re-authentication</b>	Set Re-authentication state
<b>system-auth-control</b>	Set the global NAS state
<b>timeout</b>	timeout
<b>timer</b>	timer
<b>inactivity</b>	Time in seconds between check for activity on successfully authenticated MAC addresses.
<b>re-authenticate</b>	The period between re-authentication attempts in seconds
<b>&lt;10-1000000&gt;</b>	seconds
<b>&lt;1-3600&gt;</b>	seconds
<b>guest-vlan</b>	Globally enables/disables state of guest-vlan
<b>radius-qos</b>	Globally enables/disables state of RADIUS-assigned QoS.
<b>radius-vlan</b>	Globally enables/disables state of RADIUS-assigned VLAN.
<b>&lt;1-4095&gt;</b>	The number of times a Request Identity EAPOL frame is sent

without response before considering 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

**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

<1-65535>

seconds

**EXAMPLE 1**

```
SISPM1040-384-LRT-C(config)# dot1x authentication timer inactivity 1000
SISPM1040-384-LRT-C(config)# dot1x feature guest-vlan radius-qos radius-vlan
SISPM1040-384-LRT-C(config)# dot1x guest-vlan 33
SISPM1040-384-LRT-C(config)# dot1x max-reauth-req 3
SISPM1040-384-LRT-C(config)# dot1x re-authentication
SISPM1040-384-LRT-C(config)# dot1x system-auth-control
SISPM1040-384-LRT-C(config)# dot1x timeout quiet-period 3000
SISPM1040-384-LRT-C(config)#
```

**enable**

Modify enable 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.

**<1-15>** Level number.

**0** Specifies an UNENCRYPTED password will follow.

**5** Specifies an ENCRYPTED secret will follow.

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# enable secret 0 level 15 admin
SISPM1040-384-LRT-C(config)# enable password level 15 admin
SISPM1040-384-LRT-C(config)# enable secret 5 level 15 admin11112222!2#@
SISPM1040-384-LRT-C(config)#
```

**end**

Exit config mode and go back to Exec mode.

**SYNTAX**

**end** <cr>

**Parameters**

**<cr>** Go back to EXEC mode.

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# end
SISPM1040-384-LRT-C#
```

**eps****Configure Ethernet Protection Switching.****SYNTAX**

```

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> 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	<bidirectional> <unidirectional>
command	<exercise> <forced> <freeze> <lockout> <lockoutlocal> <manualp> <manualw>
domain	<port> <pw> <tunnel-tp> . In Port domain, work-flow and protect-flow must be <port_type_id>.
holdoff	<uint>
mep-work	<uint>
revertive	<10 s – 10 m>
bidirectional	EPS 1+1 bidirectional protection type.
unidirectional	EPS 1+1 unidirectional protection type.
exercise	Exercise of the protocol - not traffic effecting. This is only allowed in 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.
<uint>	The hold off timer value in 100 ms. Max 10 sec.
<uint>	Working 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.

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# eps 1 1plus1 bidirectional
SISPM1040-384-LRT-C(config)# eps 1 revertive 10s
SISPM1040-384-LRT-C(config)# eps 1 command exercise
SISPM1040-384-LRT-C(config)# eps 2 domain port architecture 1for1 work-flow GigabitEthernet 1/4
protect-flow GigabitEthernet 1/7
SISPM1040-384-LRT-C(config)# eps 1 domain tunnel-tp architecture 1plus1 work-flow 1 protect-flow
2
MPLS-TP not supported
SISPM1040-384-LRT-C(config)#
```

**Messages:** *Error: EPS instance is not created*

**erps**

Configure Ethernet Ring Protection Switching. **Note** that you can also configure ERPS in Config mode.

**SYNTAX**

**erps** <group> guard <guard\_time\_ms>

**erps** <group> holdoff <holdoff\_time\_ms>

**erps** <group> major port0 interface <port\_type> <port0> port1 interface <port\_type> <port1> [ interconnect ]

```

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

erps <group> revertive <wtr_time_minutes>

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

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

erps <group> topology-change propagate

erps <group> version { 1 | 2 }

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

```

### Parameters

1-64	ERPS group number
<b>erps</b> guard	Guard time in ms (10-2000)
<b>erps</b> holdoff	Hold-off time in ms (0-10000)
<b>erps</b> major	Major ring
<b>rps</b> mep	Maintenance Entity endPoint
<b>erps</b> revertive	Wait-to-restore time in minutes (1-12)
<b>erps</b> rpl	Ring Protection Link <neighbor> <owner>
<b>erps</b> sub	Sub-ring
<b>erps</b> topology-change	propagate
<b>erps</b> version	<Version 1> <Version 2>
<b>erps</b> 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
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
<port_type_id>	Port ID in 1/1-12
sub	Sub-ring
GigabitEthernet	1 Gigabit Ethernet Port
interconnect	Sub-ring is interconnected
1-64	Major ring group number
virtual-channel	Enable virtual channel for sub-ring
<cr>	

**EXAMPLE**

```

SISPM1040-384-LRT-C(config)# $interface GigabitEthernet 1/3 interconnect
SISPM1040-384-LRT-C(config)# erps 1 mep port0 sf 1 aps 1 port1 sf 1 aps 1
% ERPS group 1: Given protection group does not exist
SISPM1040-384-LRT-C(config)# $hernet 1/6 interconnect 1 virtual-channel
SISPM1040-384-LRT-C(config)# erps 1 topology-change propagate
SISPM1040-384-LRT-C(config)# erps 1 version 1
SISPM1040-384-LRT-C(config)# erps 1 version 2
SISPM1040-384-LRT-C(config)# erps 1 vlan add 2
SISPM1040-384-LRT-C(config)# erps 1 vlan add 3
SISPM1040-384-LRT-C(config)# erps 1 vlan add 3
SISPM1040-384-LRT-C(config)# erps 1 vlan add 4
SISPM1040-384-LRT-C(config)# erps 1 vlan remove 3
SISPM1040-384-LRT-C(config)# erps 1 vlan none
SISPM1040-384-LRT-C(config)#

```

**evc****Configure Ethernet Virtual Connections.****SYNTAX**

**evc** <1-256> <ece> <policer> <update>

**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\_match\_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> | any } ] [ 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 | discard | 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**

<b>evc</b>	instance (1-256)
<b>evc ece</b>	EVC Control Entry
<b>evc policer</b>	Policer (ingress bandwidth profile)

---

<b>evc update</b>	Update existing entry
<b>evc inner-tag</b>	Setup inner tag options
<b>evc interface</b>	Setup NNI port list
<b>evc ivid</b>	Setup internal EVC VLAN ID
<b>evc learning</b>	Setup learning
<b>evc outer-tag</b>	Setup outer tag options
<b>evc vid</b>	Setup EVC VLAN ID
<b>vid-mode</b>	Setup inner tag VLAN ID mode
<b>&lt;0-1&gt;</b>	Added tag DEI
<b>pcp</b>	Setup added tag PCP
<b>preserve</b>	Setup tag PCP/DEI preservation
<b>type</b>	Setup added tag type
<b>disable</b>	Disable learning
<b>&lt;1-256&gt;</b>	EVC identifier
<b>add</b>	Setup inner tag add properties
<b>dei</b>	Setup added tag DEI
<b>vid</b>	Setup added tag VLAN ID
<b>*</b>	All switches or All ports
<b>GigabitEthernet</b>	1 Gigabit Ethernet Port
<b>&lt;port_type_list&gt;</b>	Port list in 1/1-12
<b>&lt;vlan_id&gt;</b>	Internal VLAN ID
<b>learning</b>	Setup learning
<b>outer-tag</b>	Setup outer tag options
<b>add</b>	Setup outer tag add properties
<b>&lt;vlan_id&gt;</b>	Added tag VLAN ID
<b>&lt;0-7&gt;</b>	Class of Service
<b>disable</b>	Disable ECE CoS classification
<b>both</b>	Bidirectional traffic flow
<b>nni-to-uni</b>	NNI-to-UNI traffic flow
<b>uni-to-nni</b>	UNI-to-NNI traffic flow
<b>any</b>	Match any DMAC
<b>broadcast</b>	Match broadcast DMAC

multicast	Match multicast DMAC
unicast	Match unicast DMAC
<1-256>	EVC identifier
none	Map to no EVC ID
any	Match any frame type
ipv4	Match IPv4 frames
ipv6	Match IPv6 frames
*	All switches or All ports
<1-256>	Select ECE ID of an existing entry
last	Make the ECE the last entry
add	Setup outer tag add properties
match	Setup outer tag match properties
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
<0-255>	ACL policy
<0-2>	Number of tags popped
<mac_addr>	Matched SMAC
any	Match any SMAC
<cr>	

**EXAMPLE 1**

```
SISPM1040-384-LRT-C(config)# evc 1
SISPM1040-384-LRT-C(config)# evc 1 ivid 20 outer-tag add vid 30
SISPM1040-384-LRT-C(config)# evc ece 1 policy 1 cos 3 direction nni-to-uni pop 1
```

```
SISPM1040-384-LRT-C(config)# evc policer 1 cbs 5000 enable mode aware  
SISPM1040-384-LRT-C(config)# evc update 1 vid 100  
SISPM1040-384-LRT-C(config)#
```

**event**

Set Trap event severity level. Every group has a severity level. These eight levels (0-7) are supported:

<0> Emergency: System is unusable.

<1> Alert: Action must be taken immediately.

<2> Critical: Critical conditions.

<3> Error: Error conditions.

<4> Warning: Warning conditions.

<5> Notice: Normal but significant conditions.

<6> Information: Information messages.

<7> Debug: Debug-level messages.

**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 }
{ 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	ACL-Log	Access-Mgmt	Auth-Failed
Cold-Start	Config-Info	DI-1-Abnormal	DI-1-Normal
DMS	Digital-Out	Firmware-Upgrade	Import-Export
LACP	Login	Logout	Loop-Protect
Mgmt-IP-Change	Module-Change	NAS	
Over-Max-PoE-Power-Limitation		PWR-1-Off-On	PWR-1-On-Off
PWR-2-Off-On	PWR-2-On-Off	Password-Change	PoE-PD-Off
PoE-PD-On	PoE-PD-Over-Current	Poe-Auto-Power-Reset	Port-Security
Rapid-Chain-Break	Rapid-Ring-Break	Rapid-Ring-Error	SCP-Fail
SCP-Success	Spanning-Tree	Temperature	Voltage
Warm-Start			

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# event group Auth-Failed level 1
```

```
SISPM1040-384-LRT-C(config)# event group Poe-Auto-Power-Reset level 1
SISPM1040-384-LRT-C(config)# event group Poe-Auto-Power-Reset smtp enable
SISPM1040-384-LRT-C(config)#
```

## exec-timeout

Set auto-logout time.

### SYNTAX

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

### Parameters

0	off (no autologout timeout)
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

```
SISPM1040-384-LRT-C(config)# exec-timeout autologout 60
SISPM1040-384-LRT-C(config)# exec-timeout autologout 0
SISPM1040-384-LRT-C(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.

## green-ethernet

Configure Green ethernet (Power reduction).

### SYNTAX

green-ethernet	Green ethernet (Power reduction)
eee	Powering down of PHYs when there is no traffic.
optimize-for-power	Set if EEE will be optimized for least <i>power</i> consumption (else optimized for least <i>traffic</i> latency).

### Parameters

green-ethernet      eee optimize-for-power

### EXAMPLE

```
SISPM1040-384-LRT-C(config)# green-ethernet eee optimize-for-power
SISPM1040-384-LRT-C(config)#
```

**gvrp**

Enable GVRP feature. GVRP (GARP VLAN Registration Protocol) is a protocol for dynamically registering VLANs on ports, and is specified in IEEE 802.1Q-2005, clause 11.

**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>
time	Configure GARP protocol timer parameters. IEEE 802.1D-2004, clause 12.11.
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.
leave-all-time	Set GARP protocol parameter LeaveAllTime.
leave-time	Set GARP protocol parameter LeaveTime.
<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**

```
SISPM1040-384-LRT-C(config)# gvrp time join-time 10 leave-all-time 2500 leave-time 100
SISPM1040-384-LRT-C(config)# gvrp max-vlans 500
W xxrp 16:52:01 153/gvrp_global_enable#193: Warning: Operation failed. Try to disable GVRP first
SISPM1040-384-LRT-C(config)#
```

## **hostname**

Set system's network name.

### **SYNTAX**

**hostname** <hostname>

### **Parameters**

**WORD**                    This system's network name.

### **EXAMPLE**

```
SISPM1040-384-LRT-C(config)# hostname?
  hostname   Set system's network name
SISPM1040-384-LRT-C(config)# hostname ?
  <host_name>  This system's network name
SISPM1040-384-LRT-C(config)# hostname abc
abc(config)# hostname SISPM1040-384-LRT-C
SISPM1040-384-LRT-C(config)#
```

## interface

Select an interface to configure. See section 4 [Configure Interface Commands](#) on page 159.

### 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 1/1-12
<vlan_list>	List of VLAN interface numbers, 1~4095
do	To run exec commands in config mode
end	Go back to EXEC mode
exit	Exit from current mode
help	Description of the interactive help system
ip	Interface Internet Protocol config commands
ipv6	IPv6 configuration commands
no	Negate a command or set its defaults

### EXAMPLE

```
SISPM1040-384-LRT-C(config-if-vlan)# ip address 192.168.1.77 255.255.255.0
% Failed to add IPv4 address to VLAN = 3.
SISPM1040-384-LRT-C(config)# interface vlan 10-200
SISPM1040-384-LRT-C(config-if)# ip ?
  arp      Address Resolution Protocol
  dhcp     Dynamic Host Configuration Protocol
  igmp     Internet Group Management Protocol
  verify   verify command
SISPM1040-384-LRT-C(config-if)# ?
  access-list      Access list
  aggregation      Create an aggregation
  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 (No
                excessive-restart means discard frame after 16
                collisions)
exit          Exit from current mode
flowcontrol   Traffic flow control.
frame-length-check  Drop frames with mismatch between EtherType/Length
                field and actually payload size.
green-ethernet  Green ethernet (Power reduction)
gvrp          Enable GVRP on interface or interfaces
help         Description of the interactive help system
ip           Internet Protocol
ipv6         IPv6 configuration commands
lcp          Enable LACP on this interface
-- more --, next page: Space, continue: g, quit: ^C
```

**ip**

Configure Internet Protocol v4 parameters.

**SYNTAX**

**ip** arp inspection

**ip** arp inspection entry interface <port\_type> <in\_port\_type\_id> <vlan\_var> <mac\_var> <ipv4\_var>

**ip** arp inspection translate [ interface <port\_type> <in\_port\_type\_id> <vlan\_var> <mac\_var> <ipv4\_var> ]

**ip** arp inspection vlan <in\_vlan\_list>

**ip** arp inspection vlan <in\_vlan\_list> logging { deny | permit | all }

**ip** dhcp 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 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

<b>arp</b>	Address Resolution Protocol
<b>dhcp</b>	Dynamic Host Configuration Protocol
<b>dns</b>	Domain Name System
<b>domain</b>	IP DNS Resolver
<b>gateway</b>	Gateway address binding interface
<b>helper-address</b>	DHCP relay server
<b>http</b>	Hypertext Transfer Protocol
<b>igmp</b>	Internet Group Management Protocol
<b>link-local</b>	Link-Local address binding interface
<b>name-server</b>	Domain Name System
<b>route</b>	Add IP route
<b>routing</b>	Enable routing for IPv4 and IPv6
<b>scp</b>	Secure copy function
<b>source</b>	source command
<b>ssh</b>	Secure Shell
<b>telnet</b>	TELNET
<b>verify</b>	verify command
<b>inspection</b>	ARP inspection
<b>entry</b>	arp inspection entry
<b>interface</b>	arp inspection entry interface config
<b>&lt;port_type&gt;</b>	Port type in Fast, Giga ethernet
<b>&lt;port_type_id&gt;</b>	Port ID in the format of switch-no/port-no

---

<b>&lt;vlan_id&gt;</b>	Select a VLAN id to configure
<b>&lt;mac_ucast&gt;</b>	Select a MAC address to configure
<b>&lt;ipv4_ucast&gt;</b>	Select an IP Address to configure
<b>deny</b>	log denied entries
<b>permit</b>	log permitted entries
<b>all</b>	log all entries
<b>translate</b>	arp inspection translate all entries
<b>vlan</b>	arp inspection vlan setting
<b>&lt;vlan_list&gt;</b>	arp inspection vlan list
<b>relay</b>	DHCP relay agent information
<b>information</b>	DHCP information option <Option 82>
<b>option</b>	DHCP option
<b>information</b>	DHCP information option(Option 82)
<b>policy</b>	Policy for handling the receiving DHCP packet already include the information option
<b>drop</b>	Drop the package when receive a DHCP message that already contains relay information
<b>keep</b>	Keep the original relay information when receive a DHCP message that already contains it
<b>replace</b>	Replace the original relay information when receive a DHCP message that already contains it
<b>server</b>	Enable DHCP server
<b>snooping</b>	DHCP snooping
<b>proxy</b>	DNS proxy service
<b>secure-certificate</b>	HTTPS certificate
<b>secure-redirect</b>	Secure HTTP web redirection
<b>secure-server</b>	Secure HTTP web server
<b>snooping</b>	Snooping IGMP
<b>&lt;word16&gt;</b>	Profile name in 16 char's
<b>vlan</b>	IGMP VLAN
<b>ssm-range</b>	IPv4 address range of Source Specific Multicast
<b>&lt;ipv4_mcast&gt;</b>	Valid IPv4 multicast address
<b>&lt;4-32&gt;</b>	Prefix length ranges from 4 to 32
<b>unknown-flooding</b>	Flooding unregistered IPv4 multicast traffic
<b>&lt;ipv4_ucast&gt;</b>	A valid IPv4 unicast address
<b>dhcp</b>	Dynamic Host Configuration Protocol

<b>interface</b>	Select an interface to configure
<b>vlan</b>	VLAN Interface
<b>&lt;vlan_id&gt;</b>	VLAN identifier(s): VID
<b>&lt;ipv4_addr&gt;</b>	Network
<b>&lt;ipv4_netmask&gt;</b>	Netmask
<b>&lt;ipv4_addr&gt;</b>	Gateway
<b>binding</b>	ip source binding
<b>interface</b>	ip source binding entry interface config
<b>&lt;port_type&gt;</b>	* or Gigibitethernet
<b>*</b>	All switches or All ports
<b>Gigabitethernet 1</b> Gigabitethernet Port	
<b>&lt;port_type_id&gt;</b>	Port ID in the format of switch-no/port-no, ex 1/1-8 for Gigabitethernet
<b>&lt;vlan_id&gt;</b>	Select a VLAN id to configure
<b>&lt;ipv4_ucast&gt;</b>	Select an IP Address to configure
<b>&lt;ipv4_netmask&gt;</b>	Select a subnet mask to configure
<b>&lt;mac_ucast&gt;</b>	Select a MAC address to configure
<b>source</b>	verify source
<b>limit</b>	limit command
<b>&lt;0-2&gt;</b>	the number of limit
<b>translate</b>	ip verify source translate all entries
<b>logging</b>	ARP inspection vlan logging mode config
<b>keyregen</b>	Regenerate ssh key
<b>port</b>	Service port number
<b>&lt;1-65534&gt;</b>	Port number
<b>generate</b>	Generate a new self-signed RSA certificate
<b>upload</b>	Upload a certificate PEM file
<b>&lt;url_file&gt;</b>	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 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.

<0-3>	Preference of DNS server. Default selection is 0
<ipv4_addr>	A valid IPv4 unicast address
<ipv6_addr>	A valid IPv6 unicast address
ipv6	DNS setting is derived from DHCPv6
<domain_name>	Default domain name
dhcp	Dynamic Host Configuration Protocol
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
vlan	VLAN Interface
<vlan_id>	VLAN identifier (VID)
interface	Select an interface to configure
<vlan_id>	VLAN IDs 1-4095

#### EXAMPLE 1

```
SISPM1040-384-LRT-C(config)# ip arp inspection
SISPM1040-384-LRT-C(config)# ip dhcp relay
SISPM1040-384-LRT-C(config)# ip dns proxy
SISPM1040-384-LRT-C(config)# ip routing
SISPM1040-384-LRT-C(config)# ip ssh
SISPM1040-384-LRT-C(config)# ip ssh port 22
SISPM1040-384-LRT-C(config)# ip ssh keyregen
W ssh 16:30:52 237/ssh_change_key#503: Warning: It will take some time. Please wait for key
generating complete...

W ssh 16:31:24 237/ssh_change_key#538: Warning: ECDSA : Public key portion is:
 521 ecdsa-sha2-nistp521 AAAAE2VjZHNhLXNoYTItbmlzdHA1MjEAAAABmlzdHA1MjEAAACFBAC
u5gfgqCVLlz3IsQVTsnb75Bgmyw6vDmdznurjiaWhLtpXfyJhSG1kn59IkYPTzDoSkBsV+g2LmJsxiMeE
50zGb2wG0swGFaEfrURlXUiI+T7Bj8N7fjhaAUQ57WvaCiEW4jDUEwLKykU1Eb9Lw2wnwte1WYWGw1aJ
VFqnQHHj2v4gB8Q==
ECDSA: md5 78:cb:e7:59:41:f1:30:19:40:07:5f:1d:af:62:27:ab
```

```

W ssh 16:31:24 237/ssh_change_key#555: Warning: Key generation completed

SISPM1040-384-LRT-C(config)# ip http secure-certificate generate
SISPM1040-384-LRT-C(config)# ip verify source translate
IP Source Guard:
    Translate 0 dynamic entries into static entries.
SISPM1040-384-LRT-C(config)# ip scp server disable
SISPM1040-384-LRT-C(config)# ip scp server enable

SISPM1040-384-LRT-C(config)# ip link-local interface 100
SISPM1040-384-LRT-C(config)# ip telnet port 4

```

**EXAMPLE 2**

```

SISPM1040-362-LRT(config)# ip domain name dhcp interface vlan 10
SISPM1040-362-LRT(config)# ip gateway interface 10
% Ip gateway interface 10 binding error!
SISPM1040-362-LRT(config)# ip gateway interface 1
SISPM1040-362-LRT(config)#

```

**Messages:** *% Ip gateway interface 10 binding error!*

***ip dhcp pool***

Enter “config-dhcp-pool” mode and 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**

bootfile	Boot file name
broadcast	Broadcast address in use on the client's subnet

---

client-identifier	Client identifier
client-name	Client host name
debug	Debugging functions
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
<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
<line>	Exec 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
netbios-scope	NetBIOS scope
<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
<word32>	TFTP servers
class-identifier	Vendor class identifier
<string64>	Class identifier in 64 characters
A.B.C.D	Lighting Server's IP address

**EXAMPLE 1** Configure a DHCP pool and show its settings:

```
SISPM1040-384-LRT-C(config-dhcp-pool)# bootfile BtF-1
SISPM1040-384-LRT-C(config-dhcp-pool)# broadcast 192.168.1.77
SISPM1040-384-LRT-C(config-dhcp-pool)# client-identifier mac-address 11-22-33-44-55-66
SISPM1040-384-LRT-C(config-dhcp-pool)# dns-server 192.168.1.77
SISPM1040-384-LRT-C(config-dhcp-pool)# domain-name Bob
SISPM1040-384-LRT-C(config-dhcp-pool)# host 192.168.1.78 255.255.255.0
SISPM1040-384-LRT-C(config-dhcp-pool)# lease 365 0 30
SISPM1040-384-LRT-C(config-dhcp-pool)# nis-domain-name NisDom1
SISPM1040-384-LRT-C(config-dhcp-pool)# nis-server 192.168.1.78 192.168.1.76
SISPM1040-384-LRT-C(config-dhcp-pool)# ntp-server 192.168.1.75
```

```
SISPM1040-384-LRT-C(config-dhcp-pool)# tftp-server TServer-1
SISPM1040-384-LRT-C(config-dhcp-pool)# do show ip dhcp pool
Pool Name: POOL-1
-----
Type is host
IP is 192.168.1.78
Subnet mask is 255.255.255.0
Subnet broadcast address is 192.168.1.77
Lease time is 365 days 0 hours 30 minutes
Default router is -
Domain name is Bob
DNS server is 192.168.1.77
NTP server is 192.168.1.75
TFTP server is TServer-1
Boot file is BtF-1
Netbios name server is -
Netbios node type is -
Netbios scope identifier is -
NIS domain name is NisDom1
NIS servers are 192.168.1.78 192.168.1.76
Vendor class information is -
Client identifier is type of MAC address that is 11:22:33:44:55:66
Hardware address is -
Client name is -
SISPM1040-384-LRT-C(config-dhcp-pool)#
SISGM1040-384-LRT-C(config-dhcp-pool)# lighting server ?
A.B.C.D Server's IP address
SISGM1040-384-LRT-C(config-dhcp-pool)# lighting server 192.168.1.101
SISGM1040-384-LRT-C(config-dhcp-pool)#
```

*Message: % Pool's IP/netmask does not match interfaces' IP/netmask, or DHCP server mode isn't enabled on a correct VLAN range.*

### **ip scp server**

Configure IP SCP Server parameters. SCP (Secure Copy) lets you transfer configuration and firmware files from their servers to the switches. Secure copy (SCP) is a file transfer protocol, which helps in transferring computer files securely from a local host to a remote host. SCP file transfer is performed using authentication and encryption provided by the SSH Protocol. SCP maintains the confidentiality

of the data being transferred and protects the authenticity by blocking packet sniffers from extracting valuable information from the data packets including password credentials. **Note** that [PuTTY](#) must be release 0.70 or greater for SHA-2 support.

#### SYNTAX

```
ip scp server { enable | disable }
```

#### Parameters

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

#### EXAMPLE

```
SISPM1040-384-LRT-C(config)# ip scp server enable
SISPM1040-384-LRT-C(config)#
```

Firmware version v7.10.1656 added the Secure Copy (SCP) feature on the switch to provide a secure and authenticated method for these feature 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 below:

1. Device(config)# `ip scp server enable /disable` (SCP default is disabled)

B. Support Windows (WINSXP) and Linux SCP Client on PC to perform these functions:

2. Download Startup Configuration File from Switch to PC, the scp command as below:

```
scp user@host:config/startup.cfg TargetFile
```

3. Upload Startup Configuration File from PC to Switch, the scp command as below:

```
scp SourceFile user@host:config/startup.cfg
```

4. PC sends new firmware to switch and upgrade switch's firmware, the scp command as below:

```
scp SourceFile user@host:image/switch_firmware_upgrade
```

5. PC sends new PoE controller MCU PD69200 software code to switch and upgrade PoE switch's PD69200 MCU code, the scp command as below:

```
scp SourceFile user@host:image/pd69200_code_upgrade
```

#### *ipmc*

IPv4/IPv6 multicast configuration.

#### 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

<b>profile</b>	IPMC profile configuration
<b>range</b>	A range of IPv4/IPv6 multicast addresses for the profile
<b>&lt; word16 &gt;</b>	Range entry name in 16 characters
<b>&lt;ipv4_mcast&gt;</b>	Valid IPv4 multicast address
<b>&lt;ipv6_mcast&gt;</b>	Valid IPv6 multicast address

#### EXAMPLE

```
SISPM1040-384-LRT-C(config)# ipmc profile test
SISPM1040-384-LRT-C(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
SISPM1040-384-LRT-C(config-ipmc-profile)# range profile1 ?
  deny         Deny matching addresses
  permit       Permit matching addresses
SISPM1040-384-LRT-C(config-ipmc-profile)# range profile1 permit ?
  log          Log when matching
  next         Specify next entry used in profile. Default: Add entry last
  <cr>
SISPM1040-384-LRT-C(config-ipmc-profile)# range profile1 permit log ?
  next         Specify next entry used in profile. Default: Add entry last
  <cr>
SISPM1040-384-LRT-C(config-ipmc-profile)#
```

#### ipv6

Set IPv6 configuration parameters.

#### 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

<b>mld</b>	Multicast Listener Discovery
<b>route</b>	Configure static routes
<b>host-proxy</b>	MLD proxy configuration
<b>snooping</b>	Snooping MLD
<b>ssm-range</b>	IPv6 address range of Source Specific Multicast
<b>unknown-flooding</b>	Flooding unregistered IPv6 multicast traffic
<b>leave-proxy</b>	MLD proxy for leave configuration
<b>vlan</b>	MLD VLAN
<b>&lt;vlan_list&gt;</b>	VLAN identifier(s): VID
<b>&lt;ipv6_mcast&gt;</b>	Valid IPv6 multicast address
<b>X:X:X:X::X/&lt;0-128&gt;</b>	IPv6 prefix x:x::y/z

### EXAMPLE

```

SISPM1040-384-LRT-C(config)# ipv6 mld ?
  host-proxy      MLD proxy configuration
  snooping        Snooping MLD
  ssm-range       IPv6 address range of Source Specific Multicast
  unknown-flooding  Flooding unregistered IPv6 multicast traffic
SISPM1040-384-LRT-C(config)# ipv6 mld snooping ?
  vlan           MLD VLAN
  <cr>
SISPM1040-384-LRT-C(config)# ipv6 mld snooping
SISPM1040-384-LRT-C(config)# ipv6 route ?
  <ipv6_subnet>  IPv6 prefix x:x::y/z
SISPM1040-384-LRT-C(config)#

```

### *lacp*

Set Link Aggregation Control Protocol parameters. 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

<b>on-air</b>	On Air
<b>system-priority</b>	System priority
<b>&lt;1-65535&gt;</b>	Priority value, lower means higher priority
<b>index</b>	Index
<b>&lt;1-8&gt;</b>	1-8
<b>couple-ip</b>	Set couple ip address
<b>port</b>	Port
<b>&lt;ipv4_addr&gt;</b>	IPv4 Address
<b>GigabitEthernet</b>	1 Gigabit Ethernet Port
<b>&lt;port_type_id&gt;</b>	Port ID in 1/1-12

#### EXAMPLE

```
SISPM1040-384-LRT-C(config)# lACP system-priority 4000
SISPM1040-384-LRT-C(config)# lACP on-air index 1 couple-ip 192.168.1.79 192.168.1.78
SISPM1040-384-LRT-C(config)# lACP on-air index 1 port GigabitEthernet 1/9
SISPM1040-384-LRT-C(config)# do show lACP on-air
LACP On Air configuration
Index Port Couple IP
-----
1 Disabled 192.168.1.79 192.168.1.78
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
SISPM1040-384-LRT-C(config)#
```

*line*

Configure a terminal line.

#### SYNTAX

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

#### Parameters

<b>&lt;0~16&gt;</b>	List of line numbers
<b>console</b>	Console terminal line
<b>0</b>	Console Line number
<b>vtty</b>	Virtual terminal
<b>&lt;0~15&gt;</b>	List of vty numbers

#### EXAMPLE

```
SISPM1040-384-LRT-C(config)# line ?  
<0~16>  List of line numbers  
console Console terminal line  
vty     Virtual terminal  
SISPM1040-384-LRT-C(config)#
```

**lldp**

Configure LLDP and LLDP-MED parameters. LLDP (Link Layer Discovery Protocol) is an IEEE 802.1ab standard protocol. LLDP-MED is an extension of IEEE 802.1ab and is defined by the Telecommunication Industry Association (TIA-1057).

**SYNTAX**

**lldp** holdtime <2-10>

**lldp** med datum { wgs84 | nad83\_navd88 | nad83\_mllw }

**lldp** med fast <1-10>

**lldp** med location-tlv altitude { meters | floors } <word11>

**lldp** med location-tlv civic-addr { 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 } <string250>

**lldp** med location-tlv elin-addr <dword25>

**lldp** med location-tlv latitude { north | south } <word8>

**lldp** med location-tlv longitude { west | east } <word9>

**lldp** med media-vlan policy-list <range\_list>

**lldp** med media-vlan-policy <0-31> { voice | voice-signaling | guest-voice-signaling | guest-voice | softphone-voice | video-conferencing | streaming-video | video-signaling } { tagged <vlan\_id> | untagged } [ l2-priority <0-7> ] [ dscp <0-63> ]

**lldp** reinit <1-10>

**lldp** timer <5-32768>

**lldp** transmission-delay <1-8192>

**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

<b>holdtime</b>	Sets LLDP hold time (The neighbor switch will discard the LLDP information after "hold time" multiplied with "timer" seconds ).
<b>med</b>	Media Endpoint Discovery.
<b>reinit</b>	LLDP tx reinitialization delay in seconds.
<b>timer</b>	Sets LLDP TX interval (The time between each LLDP frame transmitted in seconds).
<b>transmission-delay</b>	Sets LLDP transmission-delay (the amount of time that transmission of LLDP frames will be delayed after LLDP config has changed) in seconds.
<b>&lt;2-10&gt;</b>	2-10 seconds.
<b>&lt;1-10&gt;</b>	1-10 seconds.
<b>&lt;5-32768&gt;</b>	5-32768 seconds.
<b>&lt;1-8192&gt;</b>	1-8192 seconds.
<b>datum</b>	Datum (geodetic system) type.
<b>fast</b>	Number of times to repeat LLDP frame transmission at fast start.
<b>location-tlv</b>	LLDP-MED Location Type Length Value parameter.
<b>media-vlan-policy</b>	Use the media-vlan-policy to create a policy, which can be assigned to an interface.
<b>nad83_mllw</b>	Mean lower low water datum 1983
<b>nad83_navd88</b>	North American vertical datum 1983
<b>wgs84</b>	World Geodetic System 1984
<b>altitude</b>	Altitude parameter
<b>meter</b>	Altitude value
<b>floors</b>	Altitude value
<b>civic-addr</b>	Civic address information and postal information
<b>country</b>	The two-letter ISO 3166 country code in capital ASCII letters - Example: DK, DE or US.
<b>state</b>	National subdivisions (state, canton, region, province, prefecture).
<b>county</b>	County, parish, gun (Japan), district.

---

<b>city</b>	City, township, shi (Japan) - Example: Copenhagen.
<b>district</b>	City division, borough, city district, ward, chou (Japan).
<b>block</b>	Neighbourhood, block.
<b>street</b>	Street - Example: Poppelvej.
<b>leading-street-direction</b>	Leading street direction - Example: N.
<b>trailing-street-suffix</b>	Trailing street suffix - Example: SW.
<b>street-suffix</b>	Street suffix - Example: Ave, Platz.
<b>house-no</b>	House number - Example: 21.
<b>house-no-suffix</b>	House number suffix - Example: A, 1/2.
<b>landmark</b>	Landmark or vanity address - Example: Columbia University.
<b>additional-info</b>	Additional location info - Example: South Wing.
<b>name</b>	Name (residence and office occupant) - Example: Flemming Jahn.
<b>zip-code</b>	Postal/zip code - Example: 2791.
<b>building</b>	Building (structure) - Example: Low Library.
<b>apartment</b>	Unit (Apartment, suite) - Example: Apt 42.
<b>floor</b>	Floor - Example: 4.
<b>room-number</b>	Room number - Example: 450F.
<b>place-type</b>	Place type - Example: Office.
<b>postal-community-name</b>	Postal community name - Example: Leonia.
<b>p-o-box</b>	Post office box (P.O. BOX) - Example: 12345.
<b>additional-code</b>	Additional code - Example: 1320300003.
<b>&lt;string250&gt;</b>	Value for the corresponding selected civic address.
<b>elin-addr</b>	Emergency Location Identification Number, (e.g. E91, etc), as defined by TIA or NENA.
<b>&lt;dword25&gt;</b>	ELIN value
<b>north</b>	Setting latitude direction to north.
<b>south</b>	Setting latitude direction to south.
<b>&lt;word8&gt;</b>	Latitude degrees (0.0000-90.0000).
<b>policy-list</b>	Assignment of policies.
<b>&lt;range_list&gt;</b>	Policies to assign to the interface.
<b>&lt;0-31&gt;</b>	Policy id for the policy which is created.
<b>voice</b>	Create a voice policy.
<b>voice-signaling</b>	Create a voice signaling policy.

<b>guest-voice-signaling</b>	Create a guest voice signaling policy.
<b>guest-voice</b>	Create a guest voice policy.
<b>softphone-voice</b>	Create a softphone voice policy.
<b>video-conferencing</b>	Create a video conferencing policy.
<b>streaming-video</b>	Create a streaming video policy.
<b>video-signaling</b>	Create a video signaling policy.
<b>tagged</b>	The policy uses tagged frames.
<b>&lt;vlan_id&gt;</b>	The VLAN the policy uses tagged frames.
<b>untagged</b>	The policy uses un-tagged frames.
<b>l2-priority</b>	Layer 2 priority.
<b>&lt;0-7&gt;</b>	Priority 0-7
<b>dscp</b>	Differentiated Services Code Point.
<b>&lt;0-63&gt;</b>	DSCP value 0-63.

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# lldp holdtime 5
SISPM1040-384-LRT-C(config)# lldp med fast 5
SISPM1040-384-LRT-C(config)# lldp reinit 3
SISPM1040-384-LRT-C(config)# lldp timer 555
SISPM1040-384-LRT-C(config)# lldp transmission-delay 222
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 888
SISPM1040-384-LRT-C(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
SISPM1040-384-LRT-C(config)#
```

## logging

Configure Syslog parameters.

### SYNTAX

**logging host** { <ipv4\_addr> | <domain\_name> }

**logging on**

**logging port** <port\_no>

### Parameters

<b>host</b>	host
<b>&lt;ipv4_ucast&gt;</b>	IP address of the log server
<b>&lt;hostname&gt;</b>	Domain name of the log server
<b>level</b>	level
<b>info</b>	Information
<b>warning</b>	Warning
<b>error</b>	Error
<b>on</b>	Enable syslog server
<b>host</b>	host
<b>on</b>	Enable Switch logging host mode
<b>port</b>	Service port number
<b>&lt;domain_name&gt;</b>	The domain name provides a mechanism for naming resources on the Internet. A complete domain name has one or more subdomain names separated by dots (.)
<b>&lt;ipv4_ucast&gt;</b>	The IPv4 address of the log server
<b>&lt;1-65535&gt;</b>	Port number

### EXAMPLE

```
SISPM1040-384-LRT-C(config)# logging host 1.2.3.4
SISPM1040-384-LRT-C(config)# logging on
SISPM1040-384-LRT-C(config)# logging port 678
SISPM1040-384-LRT-C(config)#
```

## **loop-protect**

Configure Loop protection parameters.

### **SYNTAX**

**loop-protect**

**loop-protect** shutdown-time <t>

**loop-protect** transmit-time <t>

### **Parameters**

**shutdown-time**      Loop protection shutdown time interval

<0-604800>          Shutdown time in seconds

**transmit-time**      Loop protection transmit time interval

<1-10>              Transmit time in seconds

### **EXAMPLE**

```
SISPM1040-384-LRT-C(config)# loop transmit-time 3
SISPM1040-384-LRT-C(config)# loop shutdown-time 333
SISPM1040-384-LRT-C(config)#
```

**mac**

Configure MAC table entries.

**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 Address Table
aging-time	Mac address aging time
<0,10-1000000>	Aging time in seconds, 0 disables aging
static	Static MAC address
<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
<port_type>	Port type * or Gigabitethernet
*	All switches or All ports
Gigabitethernet	1 Gigabit Ethernet port
<port_type_list>	Port list in 1/1-8 for Gigabitethernet

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# mac address-table aging-time 3000
SISPM1040-384-LRT-C(config)# mac address-table learning vlan 200
SISPM1040-384-LRT-C(config)# mac address-table static 11:22:33:44:55:66 vlan 10
SISPM1040-384-LRT-C(config)#
```

## map-api-key

Set Google Maps API key string. 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. Visit the Google website below and follow the directions to get an API key:

<https://developers.google.com/maps/documentation/directions/get-api-key>

### Syntax

```
map-api-key <key_str>
```

### Parameters

<word127>

<cr>

### EXAMPLE

```
SISPM1040-384-LRT-C(config)# map-api-key gMapApi-string987654321
SISPM1040-384-LRT-C(config)# do show map
Key   : gMapApi-string987654321
SISPM1040-384-LRT-C(config)#
SISPM1040-384-LRT-C(config)# map-api-key gMapApi-string !@#$% ^&*(
SISPM1040-384-LRT-C(config)# do show map
Key   : gMapApi-string
SISPM1040-384-LRT-C(config)#
```

**mep**

Set 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

#### **mep 1 ais**

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.

<cr>

#### **mep 1 aps**

<0-7> Priority in case of tagged OAM. In the MPLS and EVC domain this is the COS-ID.

#### **mep 1 cc**

<0-7> Priority in case of tagged OAM. In the MPLS and EVC domain this is the COS-ID.

#### **mep 1 ccm-tlv**

<cr>

#### **mep 1 client**

domain Client flow domain.

#### **mep 1 client domain**

evc EVC client flow.

lsp MPLS-TP LSP client flow.

vlan VLAN client flow.

#### **mep 1 dm**

<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.

#### **mep 1 down**

domain The domain of the MEP.

#### **mep 1 down domain**

evc This MEP is a EVC domain MEP.

lsp This MIP is an MPLS-TP LSP domain MIP.

port This MEP is a Port domain MEP.

pw This MEP is an MPLS-TP Pseudo-Wire domain MEP.

tp-link This MEP is an MPLS-TP link domain MEP.

tunnel-tp This MEP is an MPLS-TP tunnel domain MEP.

vlan This MEP is a VLAN domain MEP.

#### **mep 1 lb**

<0-7> Priority in case of tagged OAM. In the MPLS and EVC domain this is the COS-ID.

#### **mep 1 lck**

fr1m Frame rate is 1 f/min.

fr1s Frame rate is 1 f/s.

#### **mep 1 level**

<0-7> The MEG level value.

#### **mep 1 link-state-tracking**

#### **mep 1 lm**

<0-7> Priority in case of tagged OAM. In the MPLS and EVC domain this is the COS-ID.

flow-counting Loss Measurement is counting service frames per flow – all priority in one.

oam-counting Loss Measurement is counting OAM frames either as Y1731 or all

#### **mep 1 lm-avail**

interval Availability interval

maintenance Availability Maintenance indicator.

#### **mep 1 lm-hli**

flr-threshold High Loss Interval FLR Threshold

**mep 1 lm-notif**

los-int-cnt-holddown Holddown timer for JSON notification updates for near and far end frame loss interval count.

**mep 1 lm-sdeg**

tx-min Minimum number of frames that must be transmitted in a measurement before FLR is tested against the SDEG FLR threshold.

**mep 1 lt ?**

<0-7> Priority in case of tagged OAM. In the EVC domain this is the COS-ID.

**mep 1 meg-id**

<word> The MEG-ID string. This is either the ITU MEG-ID or the IEEE Short MA, depending on the selected MEG-ID format. The ITU max. is 13 characters. The ITU-CC max. is 15 characters. The IEEE max. is 16 characters.

**mep 1 mep-id**

<uint> The MEP-ID value.

**mep 1 mip**

down This MEP is a Down-MEP.

up This MEP is an UP-MEP.

**mep 1 peer-mep-id**

<uint> The peer MEP-ID value.

**mep 1 performance-monitoring**

**mep 1 syslog**

<cr>

**mep 1 tst**

<0-7> Priority in case of tagged OAM. In the MPLS and EVC domain this is the COS-ID.

rx Receive Test Signal.

tx Transmit Test Signal.

**mep 1 up**

domain The domain of the MEP.

**mep 1 up domain**

evc This MEP is a EVC domain MEP.

lsp This MIP is an MPLS-TP LSP domain MIP.

port This MEP is a Port domain MEP.

pw This MEP is an MPLS-TP Pseudo-Wire domain MEP.

**tp-link** This MEP is an MPLS-TP link domain MEP.

**tunnel-tp** This MEP is an MPLS-TP tunnel domain MEP.

**vlan** This MEP is a VLAN domain MEP.

**mep 1 vid**

<vlan\_id> The MEP VID value.

**mep 1 voe**

<cr>

#### EXAMPLE

```
SISPM1040-384-LRT-C(config)# mep 1 ais fr1m protect
This MEP is not enabled
SISPM1040-384-LRT-C(config)# mep 1 up domain port flow 1 level 2
MEP instance is already created - must be deleted first
SISPM1040-384-LRT-C(config)# $ flow 1 level 4 interface GigabitEthernet 1/4
Error: VLAN is not created for this VID
SISPM1040-384-LRT-C(config)#
```

**monitor**

Set monitor configuration.

**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**

<b>session</b>	Configure a MIRROR session
<b>&lt;1&gt;</b>	MIRROR session number
<b>destination</b>	The destination port. That is the port that traffic should be mirrored to.
<b>interface</b>	Interface to mirror traffic to.
<b>source</b>	The source port. That is the source port to be mirrored to the destination port.
<b>interface</b>	Mirror interface traffic.
<b>&lt;port_type&gt;</b>	1 Gigabit Ethernet port
<b>*</b>	All switches or all ports
<b>GigabitEthernet</b>	1 Gigabit Ethernet Port
<b>&lt;port_type_list&gt;</b>	Port list in 1/1-8.
<b>cpu</b>	Mirror CPU traffic.
<b>both</b>	Setting source port to both will mirror both ingress and egress traffic.
<b>rx</b>	Setting source port to rx will mirror both ingress traffic.
<b>tx</b>	Setting source port to tx will mirror both egress traffic.
<b>&lt;port_type&gt;</b>	Port type in Gigabitethernet
<b>&lt;port_type_list&gt;</b>	Port list in 1/1-8 for Gigabitethernet

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# $n 1 destination interface GigabitEthernet 1/5
SISPM1040-384-LRT-C(config)# monitor session 1 source vlan 10
SISPM1040-384-LRT-C(config)#
```

**mrp**

Set Media Redundancy Protocol parameters. MRP is a data network protocol standardized by the International Electrotechnical Commission as IEC 62439-2. It allows rings of Ethernet switches to overcome any single failure with recovery time much faster than achievable with Spanning Tree Protocol. See the IETF [website](#) at for more standards information. See chapter [23 MRP Pre-Requisites and Application Examples](#) on page [331](#).

**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
blocked-state	Enable/Disable Blocked State support for MRP Client
link-interval	Set Client Link Intervals and Count for MRP Client
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
<word32>	Updated Domain name
ringport	ringport-delete
ringport	Set/Add Ringport
ringport-delete	Delete Ringport
client	Set role in Domain to client
manager	Set role in Domain to manager
disable	Disable Domain
enable	Enable Domain
<word64>	Updated Domain UUID
<1-4094>	VLAN ID to apply to Domain
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)
<cr>	

**EXAMPLES****Example 1:** Create two new MRP domains on an SISPM1040-384-LRT-C:

```
SISPM1040-384-LRT-C(config)# mrp domain new 1
SISPM1040-384-LRT-C(config)# mrp domain new 2
SISPM1040-384-LRT-C(config)#
```

**Example 2:** Show default config for newly-created MRP domains 1 and 2:

```
SISPM1040-384-LRT-C(config)# do show mrp 1
Domain:
  Admin Role:          Undefined
  Name:                Domain1
  UUID:                Default
  Primary Ring Port ID: Undefined
  Secondary Ring Port ID: Undefined
  VLAN ID:             0
SISPM1040-384-LRT-C(config)# do show mrp 2
Domain:
  Admin Role:          Undefined
  Name:                Domain2
  UUID:                Default
  Primary Ring Port ID: Undefined
  Secondary Ring Port ID: Undefined
  VLAN ID:             0
SISPM1040-384-LRT-C(config)#
```

**Example 3:** Configure MRP 1 (Manager) and MRP 2 (Client) parameters:

```
SISPM1040-384-LRT-C(config)# mrp 1 role manager
SISPM1040-384-LRT-C(config)# mrp 1 manager media-redundancy enable
SISPM1040-384-LRT-C(config)# mrp 1 manager priority 3
SISPM1040-384-LRT-C(config)# mrp 1 manager test-interval 25
SISPM1040-384-LRT-C(config)# mrp 1 manager test-monitoring 4 2
SISPM1040-384-LRT-C(config)# mrp 1 vlan 100
SISPM1040-384-LRT-C(config)# mrp 2 client blocked-state enable
SISPM1040-384-LRT-C(config)# mrp 2 client link-interval 15 30 2
SISPM1040-384-LRT-C(config)# mrp 2 ringport secondary GigabitEthernet 1/5
SISPM1040-384-LRT-C(config)# mrp 2 vlan 200
SISPM1040-384-LRT-C(config)#
```

**Example 4:** Show newly-configured MRP 1 parameters:

```
SISPM1040-384-LRT-C(config)# do show mrp 1
Operational:
  Role:                Undefined
  Status:              Disabled
  Ring State:          Undefined
  Primary Ring Port State: Unknown
  Secondary Ring Port State: Unknown
Domain:
  Admin Role:          Manager
  Name:                Domain1
  UUID:                Default
  Primary Ring Port ID: Undefined
  Secondary Ring Port ID: Undefined
  VLAN ID:             100
Manager:
  Priority:              3
  Topology Change Interval, ms: 10
  Topology Change Repeat Count: 3
  Short Test Interval, ms: 10
  Default Test Interval, ms: 25
  Test Monitoring Count: 4
  Test Monitoring Extended Count: 2
  Non-blocking MRC supported: Disabled
  React On Link Change: Disabled
  Check Media Redundancy Event: Enabled
SISPM1040-384-LRT-C(config)#
```

**Example 5:** Show newly-configured MRP 2 parameters:

```
SISPM1040-384-LRT-C(config)# do show mrp 2
Operational:
  Role:                Undefined
  Status:              Disabled
  Primary Ring Port State: Unknown
  Secondary Ring Port State: Unknown
Domain:
  Admin Role:         Client
  Name:              Domain2
  UUID:              Default
  Primary Ring Port ID: Undefined
  Secondary Ring Port ID: 5
  VLAN ID:           200
Client:
  Link Down Interval, ms: 15
  Link Up Interval, ms: 30
  Link Change Count:    2
  BLOCKED state supported: Enabled
SISPM1040-384-LRT-C(config)#
```

**Messages:**

*W mrp 145/mrp\_ikli\_client\_link\_interval#486: Warning: MRP Client Link Change Count: unable to modify domain with Id 1, Invalid parameter*

*W mrp 145/mrp\_ikli\_domain\_new#183: Warning: MRP Domain Create: unable to create domain with Id 1, Domain exists*

**mvr**

Set Multicast VLAN Registration parameters.

**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**

<b>name</b>	MVR multicast name (no spaces allowed)
<b>&lt;word16&gt;</b>	MVR multicast VLAN name
<b>channel</b>	MVR channel configuration
<b>&lt;word16&gt;</b>	Profile name in 16 char's
<b>frame</b>	MVR control frame in TX
<b>priority</b>	Interface CoS priority
<b>&lt;0-7&gt;</b>	CoS priority ranges from 0 to 7
<b>tagged</b>	Tagged IGMP/MLD frames will be sent
<b>igmp-address</b>	MVR address configuration used in IGMP
<b>&lt;ipv4_ucast&gt;</b>	A valid IPv4 unicast address MVR multicast VLAN name
<b>last-member-query-interval</b>	Last Member Query Interval in tenths of seconds
<b>&lt;0-31744&gt;</b>	0 - 31744 tenths of seconds
<b>mode</b>	MVR mode of operation

<b>dynamic</b>	Dynamic MVR operation mode
<b>compatible</b>	Compatible MVR operation mode
<b>vlan</b>	MVR multicast vlan
<b>&lt;vlan_list&gt;</b>	MVR multicast VLAN list
<b>channel</b>	MVR channel configuration
<b>&lt;word16&gt;</b>	Profile name in 16 char's
<b>frame</b>	MVR control frame in TX
<b>priority</b>	Interface CoS priority
<b>&lt;0-7&gt;</b>	CoS priority ranges from 0 to 7
<b>igmp-address</b>	MVR address configuration used in IGMP
<b>&lt;ipv4_ucast&gt;</b>	A valid IPv4 unicast address
<b>&lt;vlan_list&gt;</b>	MVR multicast VLAN list
<b>last-member-query-interval</b>	Last Member Query Interval in tenths of seconds
<b>&lt;0-31744&gt;</b>	0 - 31744 tenths of seconds
<b>compatible</b>	Compatible MVR operation mode

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# $vr name MCMVR1 last-member-query-interval 25
% Invalid MVR VLAN MCMVR1.

% Failed to set MVR interface LMQI.

SISPM1040-384-LRT-C(config)#
```

**Message:** SISPM1040-362-LRT# W mvr 04:37:12 63/\_mvr\_vlan\_warning\_handler#4034: Warning: Please adjust the management VLAN ports overlapped with MVR source ports!

*Meaning:* You configured MVR source ports that overlapped with Management VLAN ports.

*Recovery:* Change the MVR source ports so they do not overlap with Management VLAN ports.

**no**

Negate a command or set its defaults from Config mode.

**SYNTAX**

see below

**Parameters**

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

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# no banner motd
SISPM1040-384-LRT-C(config)# no aaa accounting telnet
SISPM1040-384-LRT-C(config)#
```

**ntp**

Configure Network Timing Protocol.

**SYNTAX**

**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>	interval
<1-5>	index number
ip-address	ip address
<cr>	

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# ntp
SISPM1040-384-LRT-C(config)# ntp interval 10
SISPM1040-384-LRT-C(config)# ntp server 1 ip-address 1.2.3.4
SISPM1040-384-LRT-C(config)#
```

## percepixon

**Description:** Percepixon configuration; enter Percepixon Config mode and set Percepixon parameters.

Percepixon is a cloud or on-premise portal for the centralized management of multiple Lantronix switches. A browser-based interface allows an administrator to view status, send commands, view logs and charts, and update firmware. Each Lantronix device can communicate with the cloud server or on-premise server, sending status updates and responding to commands sent by the server.

The switch requires a unique Device ID to communicate with the Percepixon portal. The ID is viewable in the Percepixon settings by running the 'show' command at the 'config-percepixon' command mode. If a device is not already pre-configured with the ID, the ID must be provisioned using Lantronix Provisioning Manager (LPM).

The Percepixon client follows a sequence of steps to connect to the Percepixon server, send status updates, check for firmware and configuration updates, and respond to commands from the server. This series of steps is the same each time the client starts - at boot, or if the client is enabled. Any changes to the Percepixon Device ID, or registration settings require the Percepixon client to be disabled and re-enabled for the changes to take effect.

### Percepixon client registration

The client will attempt to register to the Host using the project tag and device ID. If registration fails, the client will wait and retry. The client will retry until it is successful, or the client is disabled. Registration may fail if the Project Tag is invalid, the Device ID is invalid, the Host name cannot be resolved, or the Host is not reachable. Once registration is successful, the **Client State** will display **Registered** with the date and time of registration.

### Telemetry

After registration, the client will connect to the Telemetry Host (the hostname is the same as the registration host provided during registration) and perform a telemetry handshake. This handshake may request that the client publish a set of statistics at regular intervals.

### Messaging and Status Updates

After the telemetry handshake, the Percepixon client will connect to the messaging host to receive messages and publish status updates. If the connection fails, the client will wait and retry. The connection may fail if the messaging host name cannot be resolved, or the messaging host is not reachable. The client publishes status update messages (changes to the device attributes) at the interval defined by **Status Update Interval**. Each time a status update is published, the **Last status update** will be updated to indicate the elapsed time since the status was sent. The client also accepts command messages from the Percepixon server to perform actions, such as reboot.

### Firmware updates and Configuration updates

The Percepixon client checks for firmware and configuration updates at the interval defined by the **Content**

**Check Interval.** When the client checks for firmware or configuration updates, the **Last content check** will be updated to indicate the elapsed time since the check was made. The **Available Firmware updates** and **Available Configuration updates** will indicate if an update was found on the server, or show *Not available*, if no updates were found.

### Subcommands:

```
SISPM1040-384-LRT-C(config-percepxion)# ?
  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 attributes
  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
  show        Displays the current configuration
  state       Percepxion state
  status      Sets the status update interval
```

### Syntax and Parameters:

```
active connection connection <1|2>
```

- connection - sets the active connection

```
apply configuration updates <enable|disable>
```

- configuration updates - enables or disables configuration updates

```
apply firmware updates <enable|disable>
```

- firmware updates - enables or disables firmware updates

```
connection <1|2> connect to <cloud|on premise>
connection <1|2> host <host name>
connection <1|2> port <number>
connection <1|2> secure port <enable|disable>
connection <1|2> validate certificates <enable|disable>
```

- Sets the connection 1 or 2 settings.
- <1|2> - Indicates which connection to configure.
- connect to - sets the connect mode to cloud or on-premise

- `host` - sets the host name or IP address of the PercepXion server
- `port` - sets the port number of the PercepXion server. Default is 443.
- `secure port` - enables or disables secure port.
- `validate certificates` - If enabled use a certificate authority to validate the HTTPS certificate. Disabled by default.

```
content check interval <1-56160>
```

- `check interval` - sets the interval of time in minutes that the agent waits between checks for firmware or configuration updates. Valid values are 1 to 56160 minutes.

```
device description <device_desp>
```

```
device id <device_id>
```

```
device key <device_key>
```

```
device name <device_name>
```

- Sets the device attributes.
- `device_desp` - sets the description
- `device_id` - sets the device id
- `device_key` - sets the device key. After it is set, the key is displayed as <Configured>.
- `device_name` - sets the device name as it will be shown in PercepXion UI.

```
do <command>
```

- Run exec commands in the configuration mode

```
end
```

- Go back to exec mode

```
exit
```

- Exit from the current mode

```
help
```

- Shows description of the interactive help system

```
no device description
```

```
no device id
```

```
no device key
```

```
no device name
```

- Removes the value of a configuration setting
- `description` - removes the description
- `id` - removes the device id
- `key` - removes the device key
- `name` - removes the device name

```
show connection <1|2>
```

- Displays the current configuration of the specified connection

```
show statistics
```

- Displays the PercepXion statistics

```
state <disable|enable>
```

- Sets the PercepXion client state. Enabled by default.

```
status update interval <1-1440>
```

- update interval <1-1440> Sets the interval of time in minutes that the agent waits between sending its status to the PercepXion server. Valid values are 1 to 1440 minutes.

#### EXAMPLE 1

```
SISPM1040-384-LRT-C(config-percepXion)# active connection connection 1
SISPM1040-384-LRT-C(config-percepXion)# apply configuration updates enable
SISPM1040-384-LRT-C(config-percepXion)# apply firmware updates disable
SISPM1040-384-LRT-C(config-percepXion)# connection 1 connect to on premise
SISPM1040-384-LRT-C(config-percepXion)# connection 1 connect to cloud
SISPM1040-384-LRT-C(config-percepXion)# connection 2 host 1.2.3.4
SISPM1040-384-LRT-C(config-percepXion)# connection 1 port 445
SISPM1040-384-LRT-C(config-percepXion)# connection 2 secure port enable
SISPM1040-384-LRT-C(config-percepXion)# connection 2 validate certificates enable
SISPM1040-384-LRT-C(config-percepXion)# content check interval 7500
SISPM1040-384-LRT-C(config-percepXion)# device name B234
SISPM1040-384-LRT-C(config-percepXion)# device id MidRow
SISPM1040-384-LRT-C(config-percepXion)# do show version brief
Version      : SISPM1040-384-LRT-C (standalone) v7.20.0215
Build Date   : 2025-02-14T18:05:02+08:00
SISPM1040-384-LRT-C(config-percepXion)# exit
SISPM1040-384-LRT-C(config)# percepXion
SISPM1040-384-LRT-C(config-percepXion)# end
SISPM1040-384-LRT-C# configure terminal
SISPM1040-384-LRT-C(config)# percepXion
SISPM1040-384-LRT-C(config-percepXion)# no device name
SISPM1040-384-LRT-C(config-percepXion)# no device key
SISPM1040-384-LRT-C(config-percepXion)# show connection 1
PercepXion Connection 1 Configuration:
Connect To : Cloud
```

```
Host : api.percepixon.ai
Port : 445
Secure Port : Enabled
Validate Certificates: Enabled
SISPM1040-384-LRT-C(config-percepixon)#
```

#### EXAMPLE 2

```
SISPM1040-384-LRT-C(config-percepixon)# show <cr>
Percepixon Configuration:
State : Enabled
Device ID :
Device Key : (Configured)
Device Name :
Device Description : Lantronix SISPM1040-384-LRT-C
Status Update Interval : 1 minutes
Content Check Interval : 7500 minutes
Apply Firmware Updates : Disabled
Apply Configuration Updates : Enabled
Active Connection : Connection 1
Connection 1 Host : api.percepixon.ai
Connection 1 Port : 445
Connection 1 Secure Port : Enabled
Connection 1 Validate Certificates: Enabled
Connection 2 Host : 1.2.3.4
Connection 2 Port : 443
Connection 2 Secure Port : Enabled
Connection 2 Validate Certificates: Enabled
SISPM1040-384-LRT-C(config-percepixon)#
```

#### EXAMPLE 3

```
SISPM1040-384-LRT-C(config-percepixon)# 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
SISPM1040-384-LRT-C(config-percepixon)# state enable
```

```
SISPM1040-384-LRT-C(config-percepixon)# status update interval 990
```

```
SISPM1040-384-LRT-C(config-percepixon)#
```

**poe**

Configure Power Over Ethernet at the device level. Note that there are also commands to configure PoE per port in Interface Config mode.

**SYNTAX**

**poe** capacitor-detection

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

**poe** ping-check { enable | disable }

**poe** profile id <id> name <entry\_name>

**poe** profile id <id> { [ Sun <hour\_v00\_0\_to\_23> <min\_v00\_0\_to\_55> <hour\_v01\_0\_to\_23> <min\_v01\_0\_to\_55> ] [ Mon <hour\_v10\_0\_to\_23> <min\_v10\_0\_to\_55> <hour\_v11\_0\_to\_23> <min\_v11\_0\_to\_55> ] [ Tue <hour\_v20\_0\_to\_23> <min\_v20\_0\_to\_55> <hour\_v21\_0\_to\_23> <min\_v21\_0\_to\_55> ] [ Wed <hour\_v30\_0\_to\_23> <min\_v30\_0\_to\_55> <hour\_v31\_0\_to\_23> <min\_v31\_0\_to\_55> ] [ Thr <hour\_v40\_0\_to\_23> <min\_v40\_0\_to\_55> <hour\_v41\_0\_to\_23> <min\_v41\_0\_to\_55> ] [ Fri <hour\_v50\_0\_to\_23> <min\_v50\_0\_to\_55> <hour\_v51\_0\_to\_23> <min\_v51\_0\_to\_55> ] [ Sat <hour\_v60\_0\_to\_23> <min\_v60\_0\_to\_55> <hour\_v61\_0\_to\_23> <min\_v61\_0\_to\_55> ] }

**poe** reboot-chip mode { enable | disable }

**poe** reboot-chip { [ Sun <hour\_v00\_0\_to\_23> <min\_v00\_0\_to\_55> ] [ Mon <hour\_v10\_0\_to\_23> <min\_v10\_0\_to\_55> ] [ Tue <hour\_v20\_0\_to\_23> <min\_v20\_0\_to\_55> ] [ Wed <hour\_v30\_0\_to\_23> <min\_v30\_0\_to\_55> ] [ Thr <hour\_v40\_0\_to\_23> <min\_v40\_0\_to\_55> ] [ Fri <hour\_v50\_0\_to\_23> <min\_v50\_0\_to\_55> ] [ Sat <hour\_v60\_0\_to\_23> <min\_v60\_0\_to\_55> ] }

**Parameters**

<b>capacitor-detection</b>	PoE legacy mode on
<b>management</b>	Use management mode to configure PoE power management method.
<b>select-all</b>	Configure PoE Schedule mode.
<b>ping-check</b>	Enable/Disable POE Ping Check.
<b>profile</b>	poe scheduling profile
<b>reboot-chip</b>	poe schedules to reboot PoE chip
<b>mode</b>	PoE Power Management Mode
<b>allocation-consumption</b>	Max. port power determined by allocated; power is managed according to power consumption.
<b>allocation-reserved-power</b>	Max. port power determined by allocated; power is managed according to reserved power.
<b>class-consumption</b>	Max. port power determined by class; power is managed according to power consumption.
<b>class-reserved-power</b>	Max. port power determined by class; power is managed according to reserved power.

<b>lldp-consumption</b>	Max. port power determined by LLDP Media protocol; power is managed according to power consumption.
<b>lldp-reserved-power</b>	Max. port power determined by LLDP Media protocol; power is managed according to reserved power.
<b>Fri</b>	Configure PoE Power scheduling on Friday
<b>Mon</b>	Configure PoE Power scheduling on Monday
<b>Sat</b>	Configure PoE Power scheduling on Saturday
<b>Sun</b>	Configure PoE Power scheduling on Sunday
<b>Thr</b>	Configure PoE Power scheduling on Thursday
<b>Tue</b>	Configure PoE Power scheduling on Tuesday
<b>Wed</b>	Configure PoE Power scheduling on Wednesday
<b>name</b>	poE scheduling profile name, the name length is 32
<b>&lt;line32&gt;</b>	the length of name is less than 32
<b>&lt;0-55&gt;</b>	start minute, value must be multiples of 5
<b>&lt;0-23&gt;</b>	end hour
<b>disable</b>	Disable PoE Reboot
<b>enable</b>	Enable PoE Reboot
<b>Fri</b>	Configure PoE Reboot scheduling on Friday
<b>Sat</b>	Configure PoE Reboot scheduling on Saturday
<b>Sun</b>	Configure PoE Reboot scheduling on Sunday
<b>Thr</b>	Configure PoE Reboot scheduling on Thursday
<b>Tue</b>	Configure PoE Reboot scheduling on Tuesday
<b>Wed</b>	Configure PoE Reboot scheduling on Wednesday
<b>&lt;0-23&gt;</b>	start hour
<b>&lt;0-55&gt;</b>	start minute, value must be multiples of 5
<b>Fri</b>	Configure PoE Reboot scheduling on Friday
<b>Sat</b>	Configure PoE Reboot scheduling on Saturday
<b>Sun</b>	Configure PoE Reboot scheduling on Sunday
<b>Thr</b>	Configure PoE Reboot scheduling on Thursday
<b>Wed</b>	Configure PoE Reboot scheduling on Wednesday

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# poe profile id 1
```

```
SISPM1040-384-LRT-C(config)# poe management mode class-reserved-power
SISPM1040-384-LRT-C(config)# poe capacitor-detection
GigabitEthernet 1/9 does not have PoE support
GigabitEthernet 1/10 does not have PoE support
GigabitEthernet 1/11 does not have PoE support
GigabitEthernet 1/12 does not have PoE support
SISPM1040-384-LRT-C(config)# poe ping-check enable
SISPM1040-384-LRT-C(config)# poe profile id 1 name Prof-1Poe
SISPM1040-384-LRT-C(config)# poe profile id 1 Sat 23 55 0 0 Sun 12 30 2 55
SISPM1040-384-LRT-C(config)# poe reboot-chip mode enable
SISPM1040-384-LRT-C(config)# poe reboot-chip Mon 1 30 Tue 4 0
SISPM1040-384-LRT-C(config)#
```

### **port-security**

Enable/disable port security aging globally.

#### **SYNTAX**

**port-security**

**port-security** aging

**port-security** aging time <v\_10\_to\_10000000>

#### **Parameters**

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

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

<10-10000000> seconds

<cr>

#### **EXAMPLE**

```
SISPM1040-384-LRT-C(config)# port-security
SISPM1040-384-LRT-C(config)# port-security aging
SISPM1040-384-LRT-C(config)# port-security aging time 50000
SISPM1040-384-LRT-C(config)#
```

### **privilege**

Configure command privilege level parameters.

#### **SYNTAX**

**privilege** <mode\_name> level <privilege> <cmd>

**Parameters**

<b>config-vlan</b>	VLAN Configuration Mode
<b>configure</b>	Global configuration mode
<b>dhcp-pool</b>	DHCP Pool Configuration Mode
<b>exec</b>	Exec mode
<b>if-vlan</b>	VLAN Interface Mode
<b>interface</b>	Port List Interface Mode
<b>ipmc-profile</b>	IPMC Profile Mode
<b>line</b>	Line configuration mode
<b>percepixon</b>	<b>Percepixon</b>
<b>snmps-host</b>	SNMP Server Host Mode
<b>stp-aggr</b>	STP Aggregation Mode
<b>level</b>	Set privilege level of command
<0-15>	Privilege level
<line128>	Initial valid words and literals of the command to modify, in 128 characters

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# privilege stp-aggr level 15 line
SISPM1040-384-LRT-C(config)# privilege percepixon level 10 line
SISPM1040-384-LRT-C(config)#
```

**ptp**

Configure PTP (Precision Time Protocol) per ITU-T 1588. You can also configure PTP in Exec mode.

**SYNTAX**

```
ptp <<0-3> <ext> <system-time tc-internal> <cr>
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 | e2transparent | p2pttransparent | master | slave | bcfrendent } [ 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 ] [ ptp-timescale ] [ time-source <time_source> ]
ptp <clockinst> uni <id> [ 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 the 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
ext	Enable external clock frequency output
input	Enable 1PPS input
ltc-freq	Select Local Time Counter (LTC) frequency control
ltc-phase	Select Local Time Counter (LTC) phase control (assumes the frequency is locked by SyncE)
osc	Select an oscillator independent of SyncE for frequency control, if supported by the HW
out-in	Enable 1PPS output and input (Jaguar1 only)
output	Enable 1PPS output
sync-e-dpll	Select SyncE DPLL frequency control, if allowed by SyncE
vcxo	Enable VCXO frequency control (same as sync-e-dpll, kept for backwards compatibility)
get	Get (update) the PTP time from the system time
set	Set (update) the system time from the PTP time
mode	Set mode
<0-3>	mode [0-3] (0 = MODE_30BIT, 1 = MODE_32BIT, 2 = MODE_44BIT, 3 = MODE_48BIT)

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# ptp 0 clk sync 200 ap 12
SISPM1040-384-LRT-C(config)# ptp tc-internal mode 0
Successfully set the TC internal mode...
Internal TC mode Configuration has been set, you need to reboot to activate the changed conf.
SISPM1040-384-LRT-C(config)# ptp system-time set
System clock synch mode (Set System time from PTP time)
SISPM1040-384-LRT-C(config)#
```

**Messages:** *Clock instance 0 : does not exist*

**qos**

Configure QoS (Quality of Service).

**SYNTAX**

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

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

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

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

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

**qos** 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 ]
```

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

**Parameters**

<b>map</b>	Global QoS Map/Table
<b>qce</b>	QoS Control Entry
<b>storm</b>	Storm policer

---

<b>cos-dscp</b>	Map for CPS to DSCP
<b>dscp-classify</b>	Map for DSCP classify enable
<b>dscp-cos</b>	Map for DSCP to COS
<b>dscp-egress-translation</b>	Map for DSCP egress translation
<b>dscp-ingress-translation</b>	Map for DSCP ingress translation
<b>&lt;1-256&gt;</b>	QCE ID
<b>refresh</b>	Refresh QCE tables in hardware
<b>update</b>	Update an existing QCE
<b>broadcast</b>	Police broadcast frames
<b>multicast</b>	Police multicast frames
<b>unicast</b>	Police unicast frames
<b>&lt;0~7&gt;</b>	Specific class of service or range
<b>dpl</b>	Specify drop precedence level
<b>0~1</b>	Specific drop precedence level or range
<b>dscp</b>	Specify DSCP
<b>&lt;0-63&gt;</b>	Specific DSCP
<b>af11</b>	Assured Forwarding PHB AF11(DSCP 10)
<b>af12</b>	Assured Forwarding PHB AF12(DSCP 12)
<b>af13</b>	Assured Forwarding PHB AF13(DSCP 14)
<b>af21</b>	Assured Forwarding PHB AF21(DSCP 18)
<b>af22</b>	Assured Forwarding PHB AF22(DSCP 20)
<b>af23</b>	Assured Forwarding PHB AF23(DSCP 22)
<b>af31</b>	Assured Forwarding PHB AF31(DSCP 26)
<b>af32</b>	Assured Forwarding PHB AF32(DSCP 28)
<b>af33</b>	Assured Forwarding PHB AF33(DSCP 30)
<b>af41</b>	Assured Forwarding PHB AF41(DSCP 34)
<b>af42</b>	Assured Forwarding PHB AF42(DSCP 36)
<b>af43</b>	Assured Forwarding PHB AF43(DSCP 38)
<b>be</b>	Default PHB(DSCP 0) for best effort traffic
<b>cs1</b>	Class Selector PHB CS1 precedence 1(DSCP 8)
<b>cs2</b>	Class Selector PHB CS2 precedence 2(DSCP 16)
<b>cs3</b>	Class Selector PHB CS3 precedence 3(DSCP 24)

---

<b>cs4</b>	Class Selector PHB CS4 precedence 4(DSCP 32)
<b>cs5</b>	Class Selector PHB CS5 precedence 5(DSCP 40)
<b>cs6</b>	Class Selector PHB CS6 precedence 6(DSCP 48)
<b>cs7</b>	Class Selector PHB CS7 precedence 7(DSCP 56)
<b>ef</b>	Expedited Forwarding PHB(DSCP 46)
<b>va</b>	Voice Admit PHB(DSCP 44)
<b>action</b>	Setup action
<b>dmac</b>	Setup matched DMAC
<b>frame-type</b>	Setup matched frame type
<b>interface</b>	Interfaces
<b>last</b>	Place QCE at the end
<b>next</b>	Place QCE before the next QCE ID
<b>smac</b>	Setup matched SMAC. If 'qos qce addr destination' is set, this parameter specifies the DMAC
<b>tag</b>	Setup tag options
<b>&lt;0-7&gt;</b>	Specific class of service
<b>dpl</b>	Specify drop precedence level
<b>&lt;0-1&gt;</b>	0: means drop precedence level 0 (default); 1: means drop precedence level 1
<b>&lt;cr&gt;</b>	

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# qos storm unicast 256 fps
SISPM1040-384-LRT-C(config)# qos qce refresh
SISPM1040-384-LRT-C(config)# qos map dscp-cos va cos 2 dpl 0
SISPM1040-384-LRT-C(config)#
```

**radius-server**

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**

<b>attribute</b>	NAS attributes
<b>deadtime</b>	Time to stop using a RADIUS server that doesn't respond
<b>host</b>	Specify a RADIUS server
<b>key</b>	Set RADIUS encryption key
<b>retransmit</b>	Specify the number of retries to active server
<b>timeout</b>	Time to wait for a RADIUS server to reply
<b>32</b>	attribute number 32 = NAS-Identifier
<b>4</b>	attribute number 4 = NAS-IP-Address
<b>95</b>	attribute number 95 = NAS-IPv6-Address
<b>&lt;Minutes : 1-1440&gt;</b>	Time in minutes
<b>&lt;Host4 : ipv4_ucast&gt;</b>	IPv4 address
<b>&lt;Host6 : ipv6_ucast&gt;</b>	IPv6 address
<b>&lt;HostName : word1-255&gt;</b>	Hostname
<b>acct-port</b>	UDP port for RADIUS accounting server
<b>auth-port</b>	UDP port for RADIUS authentication server
<b>key</b>	Server specific key (overrides default)
<b>retransmit</b>	Specify the number of retries to active server (overrides default)
<b>timeout</b>	Time to wait for this RADIUS server to reply (overrides default)
<b>&lt;AuthPort : 0-65535&gt;</b>	UDP port number

<Seconds : 1-1000>	Wait time in seconds
<Key : line1-63>	The shared key
<1-1000>	Number of retries for a transaction
<word1-63>	The UNENCRYPTED (Plain Text) secret key. Note that you cannot get the Plain Text secret key after this command. The system always displays the ENCRYPTED password.
encrypted	Specifies an ENCRYPTED secret key will follow
unencrypted	Specifies an UNENCRYPTED secret key will follow
<word96-224>	The ENCRYPTED (hidden) secret key. Notice the ENCRYPTED secret key will be decoded by system internally. You cannot directly use it as same as the Plain Text and it is not human-readable text normally.

**EXAMPLE**

```
SISPM1040-362-LRT(config)# radius-server host RadSvr1 acct-port 4000 auth-port 5
0000 key unencrypted superuser-1! retransmit 200 timeout 350
SISPM1040-362-LRT(config)# radius-server key superuser-1!
SISPM1040-362-LRT(config)# do show rad
Global RADIUS Server Timeout      : 5 seconds
Global RADIUS Server Retransmit   : 3 times
Global RADIUS Server Deadtime     : 0 minutes
Global RADIUS Server Key          : f246a451ded58903b3758cb9b504237cfaf4642c1abb
43e44c213ccc1694f3dd9059b16d382eec798d37793fe706aa543c7927f8c63c71efa1cc1f0818cd381b
Global RADIUS Server Attribute 4  :
Global RADIUS Server Attribute 95 :
Global RADIUS Server Attribute 32 :
RADIUS Server #1:
  Host name  : RadSvr1
  Auth port  : 1812
  Acct port  : 1813
  Timeout    :
  Retransmit :
  Key       :
RADIUS Server #2:
  Host name  : RadSvr1
  Auth port  : 50000
  Acct port  : 4000
  Timeout    : 350 seconds
```

```

Retransmit : 200 times
Key       : 4acafb049c466cce2d9a20d2c94d0a7ce9266423c2f8f96a4264b76d7ce449089
2530f4afb7d5bf6bde54f1fe0f48479433ae3afb56d95323a8d9c82d397bf0a
SISPM1040-362-LRT(config)#

```

**Message:** *Error: Host table is full!*

### **rapid-ring**

Configure Rapid Ring parameters. The Rapid Ring protocol on these switches optimizes redundancy and achieves a faster recovery time on the network. **Note** that Spanning Tree must be disabled for Rapid Ring operation.

Rapid Ring protocols identify one switch as the master of the network, and then automatically block packets from traveling through any of the network's Backup loops. In the event that one branch of the ring gets disconnected from the rest of the network, the protocol automatically readjusts the ring so that the part of the network that was disconnected can reestablish contact with the rest of the network. You do not need to configure any of the switches as the master to use Single Rapid Ring. If none of the switches in the ring is configured as the master, then the protocol will automatically assign master status to one of the switches. The master is only used to identify which segment in the rapid ring acts as the backup path.

### **SYNTAX**

**rapid-ring** <disabled> <master> <member> <rapid-chain>

**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
port2	Set port2
GigabitEthernet	1 Gigabit Ethernet Port
<port_type_id>	Port ID in 1/1-12

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# $GigabitEthernet 1/3 port2 GigabitEthernet 1/8
R_RING_ICLI_system_set error in port 3, STP is enable
SISPM1040-384-LRT-C(config)# rapid-ring entry 1 role disabled port1 GigabitEthernet 1/12
port2 GigabitEthernet 1/11
SISPM1040-384-LRT-C(config)# rapid-ring entry 1 role master port1 GigabitEthernet 1/9 port2
GigabitEthernet 1/10
R_RING_ICLI_system_set error in port 9, STP is enable
SISPM1040-384-LRT-C(config)# rapid-ring entry 1 role member port1 GigabitEthernet 1/12 port2
GigabitEthernet 1/11
SISPM1040-384-LRT-C(config)#
```

**ring-to-ring**

Configure Ring to Ring parameters. Note that Spanning Tree must be disabled for Ring-to- Ring operation. Support of Ring-to-Ring settings for a “Rapid Ring” ring is different from a “single Ring”.

The Ring-to-Ring Port (Standby) on Switch 1 is used for the backup path, and connects directly to an extra network port on Switch 3. The Ring-to-Ring Port (Active) on Switch 2 monitors the status of the active path, and connects directly to an extra network port on Switch 4. Switch 1 can then activate the backup path as soon as it detects a problem with the active path.

**Note:** Other Ring technologies (e.g., STP) must be disabled.

**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**

<b>ring-to-ring</b> active	role value active.
<b>ring-to-ring</b> backup	role value backup.
<b>ring-to-ring</b> disabled	role value disabled.
port	Set port
GigabitEthernet	1 Gigabit Ethernet Port
<port_type_id>	Port ID in 1/1-12

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# ring-to-ring role active port GigabitEthernet 1/4
SISPM1040-384-LRT-C(config)# ring-to-ring role disabled port GigabitEthernet 1/8
SISPM1040-384-LRT-C(config)# ring-to-ring role backup port GigabitEthernet 1/6
```

```
SISPM1040-384-LRT-C(config)# ring-to-ring role active port GigabitEthernet 1/3  
SISPM1040-384-LRT-C(config)#
```

**Messages:**

*R\_TO\_R\_ICLI\_system\_set error in port 4, STP is enable*

*R\_TO\_R\_ICLI\_system\_set error in port 5, same with rapid ring port*

**rmon**

Configure Remote Monitoring.

**SYNTAX**

```

rmon alarm <1-65535> <WORD> <1-2147483647> { absolute | delta } rising-threshold <-2147483648-2147483647> [ <0-65535> ] falling-threshold <-2147483648-2147483647> [ <0-65535> ] { [ rising | falling | both ] }

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

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

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**

<b>alarm</b>	Configure an RMON alarm
<b>event</b>	Configure an RMON event
<b>&lt;1-65535&gt;</b>	Alarm entry ID
<b>&lt;WORD&gt;</b>	MIB object to monitor
<b>&lt;1-2147483647&gt;</b>	Sample interval
<b>absolute</b>	Test each sample directly
<b>delta</b>	Test delta between samples
<b>rising-threshold</b>	Configure the rising threshold
<b>&lt;-2147483648-2147483647&gt;</b>	rising threshold value
<b>&lt;0-65535&gt;</b>	Event to fire on rising threshold crossing
<b>falling-threshold</b>	Configure the falling threshold
<b>&lt;-2147483648-2147483647&gt;</b>	falling threshold value
<b>rising</b>	Trigger alarm when the first value is larger than the rising threshold
<b>falling</b>	Trigger alarm when the first value is less than the falling threshold
<b>both</b>	Trigger alarm when the first value is larger than the rising threshold or less than the falling threshold (default)

<b>ifInOctets</b>	The total # of octets received on the interface, including framing characters
<b>ifInUcastPkts</b>	The # of uni-cast packets delivered to a higher-layer protocol
<b>ifInNUcastPkts</b>	The # of broad-cast and multi-cast packets delivered to a higher-layer protocol
<b>ifInDiscards</b>	The # of inbound packets that are discarded even the packets are normal
<b>ifInErrors</b>	The # of inbound packets containing errors preventing them from being deliverable to a higher-layer protocol
<b>ifInUnknownProtos</b>	The number of the inbound packets that were discarded because of the unknown or un-support protocol
<b>ifOutOctets</b>	The number of octets transmitted out of the interface , including framing characters
<b>ifOutUcastPkts</b>	The number of uni-cast packets that request to transmit
<b>ifOutNUcastPkts</b>	The number of broad-cast and multi-cast packets that request to transmit
<b>ifOutDiscards</b>	The number of outbound packets that are discarded event the packets is normal
<b>ifOutErrors</b>	The number of outbound packets that could not be transmitted because of errors
<b>&lt;uint&gt;</b>	ifIndex
<b>&lt;1-2147483647&gt;</b>	Sample interval
<b>absolute</b>	Test each sample directly
<b>delta</b>	Test delta between samples
<b>rising-threshold</b>	Configure the rising threshold

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# rmon alarm 1 ifInErrors 1 6000 absolute ?
    rising-threshold  Configure the rising threshold
SISPM1040-384-LRT-C(config)# $threshold 9 falling-threshold 1 both
SISPM1040-384-LRT-C(config)#
```

**sflow**

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**

<b>agent-ip</b>	The agent IP address used as agent-address in UDP datagrams. Defaults to IPv4 loopback address.
<b>ipv4</b>	ipv4 address
<b>ipv6</b>	ipv6 address
<b>&lt;ipv4_addr&gt;</b>	ipv6 address
<b>&lt;ipv6_addr&gt;</b>	ipv4 address
<b>collector-address</b>	Collector address
<b>collector-port</b>	Collector UDP port
<b>&lt;1-65535&gt;</b>	Port Number
<b>max-datagram-size</b>	Maximum datagram size.
<b>&lt;200-1468&gt;</b>	Bytes
<b>timeout</b>	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.
<b>&lt;0-2147483647&gt;</b>	Number in seconds

**EXAMPLE**

```

SISPM1040-384-LRT-C(config)# sflow agent-ip ipv4 192.168.1.40
SISPM1040-384-LRT-C(config)# sflow collector-address 192.168.1.50
SISPM1040-384-LRT-C(config)# sflow collector-port 32
SISPM1040-384-LRT-C(config)# sflow max-datagram-size 400
SISPM1040-384-LRT-C(config)# sflow timeout 600
SISPM1040-384-LRT-C(config)#

```

## smtp

Set email information.

### SYNTAX

```
smtp <delete> <mailaddress> <returnpath> <sender> <server> <username>
```

### Parameters

```
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>
```

### EXAMPLE

```
SISPM1040-384-LRT-C(config)# smtp mailaddress 1 bob@home
SISPM1040-384-LRT-C(config)# smtp returnpath pathtoreturn
SISPM1040-384-LRT-C(config)# smtp sender 1sender2
SISPM1040-384-LRT-C(config)# smtp server themaiserver1
SISPM1040-384-LRT-C(config)# smtp username bobroberts mntwins34
SISPM1040-384-LRT-C(config)# do show smtp
Mail Server      : themaiserver1
User Name       : bobroberts
Password        : *****
Sender          : 1sender2
Return Path     : pathtoreturn
Email Address 1 : bob@home
Email Address 2 :
Email Address 3 :
Email Address 4 :
Email Address 5 :
Email Address 6 :
SISPM1040-384-LRT-C(config)#
```

## **switchport**

Set switching mode characteristics.

### **SYNTAX**

**switchport** vlan mapping <gid> <vlan\_list> <tvid>

### **Parameters**

vlan	VLAN
mapping	Add VLAN translation entry into a group.
<1-12>	Group id
<vlan_list>	Original vlan-list
<vlan_id>	Translated vlan-id
<cr>	

### **EXAMPLE**

```
SISPM1040-384-LRT-C(config)# switchport vlan mapping 1 1-10 40
SISPM1040-384-LRT-C(config)#
```

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

**system**

Set switch configuration parameters.

**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 switch contact string.
description	Configure switch Description.
di	Set the switch DI input configurations.
do	Set the switch DO output configurations.
location	Set the switch location string.
name	Set the switch system model name string.
reboot	Set the switch Reboot configuration mode and date.
<line255>	Maximum number of 255 character strings.
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

disable	Set DI reboot system to Disable
enable	Set DI reboot system to When DI was changed to abnormal
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
<line128>	contact string
<line128>	System Description string
<line128>	location string
<line128>	name string
Fri	Configure Switch Reboot scheduling on Friday
Mon	Configure Switch Reboot scheduling on Monday
Sat	Configure Switch Reboot scheduling on Saturday
Sun	Configure Switch Reboot scheduling on Sunday
Thr	Configure Switch Reboot scheduling on Thursday
Tue	Configure Switch Reboot scheduling on Tuesday
Wed	Configure Switch Reboot scheduling on Wednesday
mode	Switch reboot mode
<0-23>	start hour
<0-55>	start minute, value must be multiples of 5

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# system di high
SISPM1040-384-LRT-C(config)# system di low
SISPM1040-384-LRT-C(config)# system di normal cvdcc
SISPM1040-384-LRT-C(config)# system do open
SISPM1040-384-LRT-C(config)# system do close
SISPM1040-384-LRT-C(config)# system do relay open
SISPM1040-384-LRT-C(config)# system reboot Fri 20 55
SISPM1040-384-LRT-C(config)# system di reboot disable
```

```
SISPM1040-384-LRT-C(config)# system di reboot enable
SISPM1040-384-LRT-C(config)#
```

**Always On PoE** (soft reboot): allows a warm reboot of the switch without affecting the PoE output to the PD, providing continuous power even during firmware upgrade.

## **tacacs-server**

Configure TACACS+.

### **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**

<b>deadtime</b>	Time to stop using a TACACS+ server that doesn't respond
<b>host</b>	Specify a TACACS+ server
<b>key</b>	Set TACACS+ encryption key
<b>timeout</b>	Time to wait for a TACACS+ server to reply
<b>&lt;Minutes : 1-1440&gt;</b>	Time in minutes
<b>&lt;Key : line1-63&gt;</b>	The shared key
<b>&lt;Seconds : 1-1000&gt;</b>	Wait time in seconds before server is considered to be dead.
<b>&lt;word1-255&gt;</b>	Hostname or IP address
<b>&lt;ipv4_ucast&gt;</b>	IPv4 address
<b>&lt;ipv6_ucast&gt;</b>	IPv6 address
<b>port</b>	TCP port for TACACS+ server
<b>&lt;0-65535&gt;</b>	TCP port number
<b>&lt;word-63&gt;</b>	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.
<b>encrypted</b>	Specifies an ENCRYPTED secret key will follow
<b>unencrypted</b>	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.
port	TCP port for TACACS+ server
timeout	Time to wait for this TACACS+ server to reply (overrides default)

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# tacacs-server deadtime 300
SISPM1040-362-LRT(config)# tacacs-server host 192.168.1.30 key abcd1234 Buffrey1 555 30
SISPM1040-362-LRT(config)# tacacs-server key Buffrey1 1234abcd
SISPM1040-362-LRT(config)# tacacs-server timeout 450
SISPM1040-362-LRT(config)# do show tacacs
Global TACACS+ Server Timeout      : 450 seconds
Global TACACS+ Server Deadtime    : 10 minutes
Global TACACS+ Server Key         : Buffrey1 1234abcd
TACACS+ Server #1:
  Host name   : TacSrvr1
  Port       : 49
  Timeout    : 90 seconds
  Key        : admin
TACACS+ Server #2:
  Host name   : 192.168.1.30
  Port       : 49
  Timeout    :
  Key        : abcd1234 Buffrey1 555 30
SISPM1040-362-LRT(config)#
```

**tzidx**

Configure timezone city/area.

**SYNTAX**

**tzidx** <idx\_var>

**Parameters**

<int>     index of city/area

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# tzidx?  
tzidx    Configure timezone city/area  
SISPM1040-384-LRT-C(config)# tzidx 12345  
SISPM1040-384-LRT-C(config)#
```

## udld

Enable UDLD in 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

<b>aggressive</b>	Enables UDLD in aggressive mode on all fiber-optic ports.
<b>enable</b>	Enables UDLD in normal mode on all fiber-optic ports.
<b>time-interval</b>	Configures the period of time between UDLD probe messages on ports that are in the advertisement phase and are determined to be bidirectional. The range is from 7 to 90 seconds(currently default message time interval 7 sec is supported).
<b>&lt;7-90&gt;</b>	Configures the period of time between UDLD probe messages on ports that are in the advertisement phase and are determined to be bidirectional. The range is from 7 to 90 seconds(currently default message time interval 7 sec is supported).

### EXAMPLE

```
SISPM1040-384-LRT-C(config)# udld aggressive
SISPM1040-384-LRT-C(config)# udld enable
SISPM1040-384-LRT-C(config)# udld message time-interval 20
SISPM1040-384-LRT-C(config)#
```

**upnp**

Set Universal Plug-n-Play configuration parameters.

**SYNTAX****upnp****upnp** advertising-duration <v\_66\_to\_86400>**upnp** ttl <v\_1\_to\_255>**Parameters****advertising-duration**          Set advertising duration**ttl**                                  Set TTL value

&lt;66-86400&gt;                  advertising duration

&lt;1-255&gt;                          TTL value

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# upnp advertising-duration 88
SISPM1040-384-LRT-C(config)# upnp ttl 100
SISPM1040-384-LRT-C(config)# upnp
SISPM1040-384-LRT-C(config)#
```



**vlan**

Set VLAN parameters.

**SYNTAX**

**vlan** <vlist>

**vlan** ether-type 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**

<b>&lt;vlan_list&gt;</b>	ISL VLAN IDs 1-4095
<b>ether-type</b>	Ether type for Custom S-ports
<b>protocol</b>	Protocol-based VLAN commands
<b>s-custom-port</b>	Custom S-ports configuration
<b>&lt;0x0600-0xffff&gt;</b>	Ether type (Range: 0x0600-0xffff)
<b>eth2</b>	Ethernet-based VLAN commands
<b>&lt;0x600-0xffff&gt;</b>	Ether Type(Range: 0x600 - 0xFFFF)
<b>arp</b>	Ether Type is ARP
<b>ip</b>	Ether Type is IP
<b>ipx</b>	Ether Type is IPX
<b>at</b>	Ether Type is AppleTalk
<b>snap</b>	SNAP-based VLAN group
<b>&lt;0x0-0xfffff&gt;</b>	SNAP OUI (Range 0x000000 - 0FFFFFFF)
<b>rfc_1042</b>	SNAP OUI is rfc_1042
<b>snap_8021h</b>	SNAP OUI is 8021h
<b>&lt;0x0-0xffff&gt;</b>	PID (Range: 0x0 - 0xFFFF)
<b>llc</b>	LLC-based VLAN group
<b>&lt;0x0-0xff&gt;</b>	DSAP (Range: 0x00 - 0xFF)
<b>&lt;0x0-0xff&gt;</b>	SSAP (Range: 0x00 - 0xFF)
<b>group</b>	Protocol-based VLAN group commands
<b>&lt;word16&gt;</b>	Group Name (Range: 1 - 16 characters)

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# vlan 40
```

```
SISPM1040-384-LRT-C(config)# vlan ethertype s-custom-port 0xdddd
SISPM1040-384-LRT-C(config)# vlan protocol eth2 ip group tgrp1
SISPM1040-384-LRT-C(config)# vlan ethertype s-custom-port 0x1111
SISPM1040-384-LRT-C(config)#
```

## voice

Set Voice appliance attributes. **Note:** modifying the OUI table will restart auto detection of the OUI process.

An OUI (Organizationally Unique Identifier) is a globally unique identifier assigned to a vendor by IEEE.

You can determine which vendor a device belongs to according to the OUI address which forms the first 24 bits of a MAC address.

### 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

<b>vlan</b>	Vlan for voice traffic
<b>aging-time</b>	Set secure learning aging time
<b>&lt;10-10000000&gt;</b>	Aging time, 10-10000000 seconds
<b>class</b>	Set traffic class
<b>&lt;0-7&gt;</b>	Traffic class value
<b>oui</b>	OUI configuration. A telephony OUI address is a globally unique identifier assigned to a vendor by IEEE. It must be 6 characters long and the input format is "xx-xx-xx" (x is a hexadecimal digit).
<b>&lt;oui&gt;</b>	OUI value
<b>description</b>	Set description for the OUI
<b>&lt;line32&gt;</b>	Description line
<b>vid</b>	Set VLAN ID
<b>&lt;vlan_id&gt;</b>	VLAN ID, 1-4095

### EXAMPLE

```
SISPM1040-384-LRT-C(config)# voice vlan aging-time 3333
SISPM1040-384-LRT-C(config)# voice vlan class 7
```

```
SISPM1040-384-LRT-C(config)# voice vlan vid 3333  
SISPM1040-384-LRT-C(config)#
```

**web**

Configure Web group privilege levels.

**SYNTAX**

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

**Parameters**

<b>privilege</b>	Web privilege
<b>group</b>	Web privilege group
<cwrd>	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' 'sFlow'
<b>level</b>	Web privilege group level
<b>cro</b>	Configuration Read-only level
<b>crw</b>	Configuration Read-write level
<b>sro</b>	Status/Statistics Read-only level
<b>srw</b>	Status/Statistics Read-write level

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# web privilege ?
  group      Web privilege group
SISPM1040-384-LRT-C(config)# web privilege group ip ?
  level      Web privilege group level
SISPM1040-384-LRT-C(config)# web privilege group ip level crw ?
  <0-15>
SISPM1040-384-LRT-C(config)# web privilege group ip level crw 13
SISPM1040-384-LRT-C(config)#
```

***access-list*****Table : configure Access List Commands**

<b><u>Command</u></b>	<b><u>Function</u></b>
ace	Access list entry
rate-limiter	Rate limiter

***rate-limiter***

Configure Access List Rate limiter.

**SYNTAX**

```
access-list rate-limiter [ <1~16> ] { pps <0-3276700> | 100kbps <0-10000> }
```

**Parameters**

<b>100kbps</b>	100k bits per second
<b>&lt; 1~16&gt;</b>	Rate limiter ID
<b>pps</b>	Packets per second
<b>&lt;0-10000&gt;</b>	Rate value
<b>100kbps</b>	100k bits per second
<b>pps</b>	Packets per second
<b>&lt;0-3276700&gt;</b>	Rate value

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# access-list rate-limiter 100kbps 500
SISPM1040-384-LRT-C(config)# access-list rate-limiter 1 pps 99999
SISPM1040-384-LRT-C(config)#
```

**ace**

Configure Access list entry.

**SYNTAX**

```

access-list ace{ update<1-256> | <1-256> } [action< deny | filter | permit >]

access-list ace{ update<1-256> | <1-256> } [dmac-type < any | broadcast | multicast | unicast >]

access-list ace{ update<1-256> | <1-256> } [frametype < any | arp | etype | ipv4 | ipv4-icmp | ipv4-tcp | ipv4-udp | ipv6 |
ipv6-icmp | ipv6-tcp | ipv6-udp >]

access-list ace{ update<1-256> | <1-256> } [ ingress] [ ingress interface { <port_type> <port_type_id> | <port_type>
<port_type_list> } | any } ]

access-list ace{ update<1-256> | <1-256> } [ logging [ disable ] ]

access-list ace{ update<1-256> | <1-256> } [ lookup [ disable ] ]

access-list ace{ update<1-256> | <1-256> } [ mirror [ disable ] ]

access-list ace{ update<1-256> | <1-256> } [ next { <1-256> | last } ]

access-list ace{ update<1-256> | <1-256> } [ policy <0-255> [ policy-bitmask <0x0-0xFF> ] ]

access-list ace{ update<1-256> | <1-256> } [ rate-limiter { <1-16> | disable } ]

access-list ace{ update<1-256> | <1-256> } [ redirect | interface { <port_type> <port_type_id> | <port_type>
<port_type_list> } | disable } ]

access-list ace{ update<1-256> | <1-256> } [ shutdown]

access-list ace{ update<1-256> | <1-256> } [ tag { tagged | untagged | any } ]

access-list ace{ update<1-256> | <1-256> } [ tag-priority { <0-7> | any } ]

access-list ace{ update<1-256> | <1-256> } [ vid { <1-4095> | any } ]

```

**Parameters**

<1-256>	ACE ID
update	Update an existing ACE
<b>action</b>	Access list action
<b>dmac-type</b>	The type of destination MAC address
<b>frametype</b>	Frame type
<b>ingress</b>	Ingress
<b>logging</b>	Logging frame information
<b>lookup</b>	Second lookup
<b>mirror</b>	Mirror frame to destination mirror port
<b>next</b>	insert the current ACE before the next ACE ID

---

<b>policy</b>	Policy
<b>rate-limiter</b>	Rate limiter
<b>redirect</b>	Redirect frame to specific port
<b>shutdown</b>	Shutdown incoming port
<b>tag</b>	Tag
<b>tag-priority</b>	Tag priority
<b>vid</b>	VID field
<b>deny</b>	Deny
<b>filter</b>	Filter
<b>permit</b>	Permit
<b>any</b>	Don't-care the type of destination MAC address
<b>broadcast</b>	Broadcast destination MAC address
<b>multicast</b>	Multicast destination MAC address
<b>unicast</b>	Unicast destination MAC address
<b>any</b>	Don't-care the frame type
<b>arp</b>	Frame type of ARP
<b>etype</b>	Frame type of etype
<b>ipv4</b>	Frame type of IPv4
<b>ipv4-icmp</b>	Frame type of IPv4 ICMP
<b>ipv4-tcp</b>	Frame type of IPv4 TCP
<b>ipv4-udp</b>	Frame type of IPv4 UDP
<b>ipv6</b>	Frame type of IPv6
<b>ipv6-icmp</b>	Frame type of IPv6 ICMP
<b>ipv6-tcp</b>	Frame type of IPv6 TCP
<b>ipv6-udp</b>	Frame type of IPv6 UDP
<b>interface</b>	Select an interface to configure
<b>&lt;port_type&gt;</b>	Gigabitethernet
<b>*</b>	All switches or All ports
<b>Gigabitethernet 1</b> Gigabit Ethernet port	
<b>&lt;port_type_id&gt;</b>	Port ID in the format of switch-no/port-no ex, 1/1-8 for Gigabitethernet
<b>&lt;port_type&gt;</b>	* or Gigabitethernet
<b>&lt;port_type_list&gt;</b>	Port list in 1/1-8

---

<b>any</b>	Don't-care the ingress interface
<b>&lt;0-255&gt;</b>	Policy ID
<b>policy-bitmask</b>	The bitmask for policy ID
<b>&lt;0x0-0xFF&gt;</b>	The value of policy bitmask
<b>&lt;1-4095&gt;</b>	The value of VID field
<b>&lt;0-7&gt;</b>	The value of tag priority

#### EXAMPLE

```
SISPM1040-384-LRT-C(config)# access-list ace 10 action deny
SISPM1040-384-LRT-C(config)# access-list ace 1 tag tagged action permit
SISPM1040-384-LRT-C(config)# access-list rate-limiter 1 pps 90000
SISPM1040-384-LRT-C(config)# access-list ace 1 evc 1 logging vid any
SISPM1040-384-LRT-C(config)# access-list ace 1 mirror policy 2 shutdown frame-type etype
SISPM1040-384-LRT-C(config)#
```

#### Messages:

*% ACE ID 1 isn't existing.*

**qos****Table : configure – qos Commands**

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

**map**

Global QoS Map/Table.

**SYNTAX**

```
qos map cos-dscp <0~7> dpl <dpl : 0~1> dscp { <DscpNum : 0-63> | { 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 { <dscpNum : 0~63> | { 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 { <dscpNum : 0~63> | { be | af11 | af12 | af13 | af21 | af22 | af23 | af31 | af32 | af33 | af41 | af42 | af43 | cs1 | cs2 | cs3 | cs4 | cs5 | cs6 | cs7 | ef | va } } cos <Cos : 0-7> dpl <dpl>
```

```
qos map dscp-egress-translation { <DscpNum : 0~63> | { be | af11 | af12 | af13 | af21 | af22 | af23 | af31 | af32 | af33 | af41 | af42 | af43 | cs1 | cs2 | cs3 | cs4 | cs5 | cs6 | cs7 | ef | va } } <Dpl : 0~1> to { <Dscpnum : 0-63> | { 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 { <DscpNum : 0~63> | { be | af11 | af12 | af13 | af21 | af22 | af23 | af31 | af32 | af33 | af41 | af42 | af43 | cs1 | cs2 | cs3 | cs4 | cs5 | cs6 | cs7 | ef | va } } to { <DscpNum : 0-63> | { be | af11 | af12 | af13 | af21 | af22 | af23 | af31 | af32 | af33 | af41 | af42 | af43 | cs1 | cs2 | cs3 | cs4 | cs5 | cs6 | cs7 | ef | va } }
```

**Parameters**

<b>cos-dscp</b>	Map for cos to dscp
<b>dscp-classify</b>	Map for dscp classify enable
<b>dscp-cos</b>	Map for dscp to cos
<b>dscp-egress-translation</b>	Map for dscp egress translation
<b>dscp-ingress-translation</b>	Map for dscp ingress translation
<b>dpl</b>	Specify drop precedence level
<b>&lt;Dpl : 0~1&gt;</b>	Specific drop precedence level or range
<b>dscp</b>	Specify DSCP
<b>&lt;DscpNum : 0-63&gt;</b>	Specific DSCP
<b>cos</b>	Specify class of QoS

---

<b>&lt;Cos : 0-7&gt;</b>	Specific class of QoS
<b>af11</b>	Assured Forwarding PHB AF11(DSCP 10)
<b>af12</b>	Assured Forwarding PHB AF12(DSCP 12)
<b>af13</b>	Assured Forwarding PHB AF13(DSCP 14)
<b>af21</b>	Assured Forwarding PHB AF21(DSCP 18)
<b>af22</b>	Assured Forwarding PHB AF22(DSCP 20)
<b>af23</b>	Assured Forwarding PHB AF23(DSCP 22)
<b>af31</b>	Assured Forwarding PHB AF31(DSCP 26)
<b>af32</b>	Assured Forwarding PHB AF32(DSCP 28)
<b>af33</b>	Assured Forwarding PHB AF33(DSCP 30)
<b>af41</b>	Assured Forwarding PHB AF41(DSCP 34)
<b>af42</b>	Assured Forwarding PHB AF42(DSCP 36)
<b>af43</b>	Assured Forwarding PHB AF43(DSCP 38)
<b>be</b>	Default PHB(DSCP 0) for best effort traffic
<b>cs1</b>	Class Selector PHB CS1 precedence 1(DSCP 8)
<b>cs2</b>	Class Selector PHB CS2 precedence 2(DSCP 16)
<b>cs3</b>	Class Selector PHB CS3 precedence 3(DSCP 24)
<b>cs4</b>	Class Selector PHB CS4 precedence 4(DSCP 32)
<b>cs5</b>	Class Selector PHB CS5 precedence 5(DSCP 40)
<b>cs6</b>	Class Selector PHB CS6 precedence 6(DSCP 48)
<b>cs7</b>	Class Selector PHB CS7 precedence 7(DSCP 56)
<b>ef</b>	Expedited Forwarding PHB(DSCP 46)
<b>va</b>	Voice Admit PHB(DSCP 44)

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# qos map cos-dscp 5 dp1 1 dscp 20
SISPM1040-384-LRT-C(config)#
```

**qce****Configure QoS Control Entry.****SYNTAX****qos qce refresh**

```

qos qce { [ update ] } <id : 1-256> [ { next <id : 1-256> } | last ] [ ingress interface * | GigabitEthernet <PORT_LIST> ] [ tag { tagged
| untagged | any } ] [ vid { <vlan_list> | any } ] [ pcp { <pcp> | any } ] [ dei { <Dpl : 0-1> | any } ] [ smac { <mac_addr> | <oui> | any } ]
[ dmac-type { unicast | multicast | broadcast | any } ] [ frametype { any | { etype [ { <0x600-0x7ff,0x801-0x86dc,0x86de-0xffff> |
any } ] } | { llc [ dsap { <0-0xff> | any } ] [ ssap { <0-0xff> | any } ] [ control { <0-0xff> | any } ] } | { snap [ { <0-0xffff> | any } ] } | { ipv4
[ proto { <0-255> | tcp | udp | any } ] [ sip { <ipv4_subnet> | any } ] [ dscp { <0~63> | { be | af11 | af12 | af13 | af21 | af22 | af23 |
af31 | af32 | af33 | af41 | af42 | af43 | cs1 | cs2 | cs3 | cs4 | cs5 | cs6 | cs7 | ef | va } | any } ] [ frag { yes | no | any } ] [ sport
{ <0~65535> | any } ] [ dport { <0~65535> | any } ] } | { ipv6 [ proto { <0-255> | tcp | udp | any } ] [ sip { <ipv4_subnet> | any } ]
[ dscp { <0~63> | { be | af11 | af12 | af13 | af21 | af22 | af23 | af31 | af32 | af33 | af41 | af42 | af43 | cs1 | cs2 | cs3 | cs4 | cs5 |
cs6 | cs7 | ef | va } | any } ] [ sport { <0~65535> | any } ] [ dport { <0~65535> | any } ] } } ] [ action { [ cos { <0-7> | default } ] [ dpl
{ <0-1> | default } ] [ dscp { <0-63> | { be | af11 | af12 | af13 | af21 | af22 | af23 | af31 | af32 | af33 | af41 | af42 | af43 | cs1 |
cs2 | cs3 | cs4 | cs5 | cs6 | cs7 | ef | va } | default } ] } } ]

```

**Parameters**

<b>&lt;id : 1-256&gt;</b>	QCE ID
<b>refresh</b>	Refresh QCE tables in hardware
<b>update</b>	Update an existing QCE
<b>action</b>	Specify action
<b>dei</b>	Specify DEI (Drop Eligible Indicator)
<b>dmac-type</b>	Specify DMAC type
<b>frametype</b>	Specify frame type
<b>ingress</b>	Ingress interfaces
<b>last</b>	Place QCE at the end
<b>next</b>	Place QCE before the next QCE ID
<b>pcp</b>	Specify PCP (Priority Code Point)
<b>smac</b>	Specify SMAC. If 'qos qce dmac-dip' is set, this parameter specifies the DMAC
<b>tag</b>	Specify tag options
<b>vid</b>	Specify VLAN ID
<b>cos</b>	Specify class of service
<b>dpl</b>	Specify drop precedence level
<b>dscp</b>	Specify DSCP

---

<b>cos</b>	Specify class of service
<b>&lt;Cos : 0-7&gt;</b>	Specific class of service
<b>default</b>	Keep default class of service
<b>&lt;Dpl : 0-1&gt;</b>	Specific drop precedence level
<b>default</b>	Keep default drop precedence level
<b>&lt;Dscp : 0-63&gt;</b>	Specific DSCP
<b>af11</b>	Assured Forwarding PHB AF11(DSCP 10)
<b>af12</b>	Assured Forwarding PHB AF12(DSCP 12)
<b>af13</b>	Assured Forwarding PHB AF13(DSCP 14)
<b>af21</b>	Assured Forwarding PHB AF21(DSCP 18)
<b>af22</b>	Assured Forwarding PHB AF22(DSCP 20)
<b>af23</b>	Assured Forwarding PHB AF23(DSCP 22)
<b>af31</b>	Assured Forwarding PHB AF31(DSCP 26)
<b>af32</b>	Assured Forwarding PHB AF32(DSCP 28)
<b>af33</b>	Assured Forwarding PHB AF33(DSCP 30)
<b>af41</b>	Assured Forwarding PHB AF41(DSCP 34)
<b>af42</b>	Assured Forwarding PHB AF42(DSCP 36)
<b>af43</b>	Assured Forwarding PHB AF43(DSCP 38)
<b>be</b>	Default PHB(DSCP 0) for best effort traffic
<b>cs1</b>	Class Selector PHB CS1 precedence 1(DSCP 8)
<b>cs2</b>	Class Selector PHB CS2 precedence 2(DSCP 16)
<b>cs3</b>	Class Selector PHB CS3 precedence 3(DSCP 24)
<b>cs4</b>	Class Selector PHB CS4 precedence 4(DSCP 32)
<b>cs5</b>	Class Selector PHB CS5 precedence 5(DSCP 40)
<b>cs6</b>	Class Selector PHB CS6 precedence 6(DSCP 48)
<b>cs7</b>	Class Selector PHB CS7 precedence 7(DSCP 56)
<b>default</b>	Keep default DSCP
<b>ef</b>	Expedited Forwarding PHB(DSCP 46)
<b>va</b>	Voice Admit PHB(DSCP 44)
<b>any</b>	Any
<b>broadcast</b>	Broadcast
<b>multicast</b>	Multicast

<b>unicast</b>	Unicast
<b>etype</b>	Ethernet frames
<b>ipv4</b>	IPv4 frames
<b>ipv6</b>	IPv6 frames
<b>llc</b>	LLC frames
<b>snap</b>	SNAP frames
<b>&lt;Etype : 0x600-0x7ff,0x801-0x86dc,0x86de-0xffff&gt;</b>	Specific EtherType
<b>interface</b>	Interfaces
<b>&lt;Next : 1-256&gt;</b>	The next QCE ID
<b>&lt;Pcp : pcp&gt;</b>	Specific PCP (0-7) or range (0-1, 2-3, 4-5, 6-7, 0-3 or 4-7)
<b>&lt;Smac : mac_addr&gt;</b>	Specific SMAC (XX-XX-XX-XX-XX-XX)
<b>tagged</b>	Tagged frames only
<b>untagged</b>	Untagged frames only
<b>&lt;Vid : vlan_list&gt;</b>	Specific VLAN ID or range
<b>interface</b>	Interfaces
<b>Gigabitethernet</b>	1 Gigabit Ethernet Port
<b>&lt;PORT_LIST&gt;</b>	Port list in 1/1-8 for Gigabitethernet

**EXAMPLE**

```
SISPM1040-362-LRT(config)# qos qce 100 action cos ?
<0-7>      Assign class of service
default    Keep existing class of service
SISPM1040-362-LRT(config)# qos qce 100 action cos 5
SISPM1040-362-LRT(config)#
SISPM1040-384-LRT-C(config)# qos qce 1 action cos 2 frame-type ipv4 tag dei 0
SISPM1040-384-LRT-C(config)# qos qce 100 action cos default dpl 0 pcp-dei 5 0 dscp be
SISPM1040-384-LRT-C(config)#
```

## **storm**

Configure QoS Storm policer.

### **SYNTAX**

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

### **Parameters**

<b>broadcast</b>	Police broadcast frames
<b>multicast</b>	Police multicast frames
<b>unicast</b>	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.
<b>kfps</b>	Rate is kfps

### **EXAMPLE**

```
SISPM1040-384-LRT-C(config)# qos storm broadcast 256 kfps
SISPM1040-384-LRT-C(config)# qos storm broadcast 1
SISPM1040-384-LRT-C(config)# qos storm broadcast 2
SISPM1040-384-LRT-C(config)# qos storm broadcast 4
SISPM1040-384-LRT-C(config)# qos storm broadcast 64000
SISPM1040-384-LRT-C(config)#
```

**snmp-server**

Configure SNMP parameters.

**SYNTAX**

**snmp-server**

**Table : configure –snmp-server Commands**

<u>Command</u>	<u>Function</u>
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

**access**

Configure SNMP access parameters.

**SYNTAX**

```
snmp-server access <GroupName : word32> model { v1 | v2c | v3 | any } level { auth | noauth | priv } [ read <ViewName : word255> ] [ write <WriteName : word255> ]
```

**Parameters**

<b>&lt;GroupName : word32&gt;</b>	group name
<b>model</b>	security model
<b>any</b>	any security model
<b>v1</b>	v1 security model
<b>v2c</b>	v2c security model
<b>v3</b>	v3 security model
<b>level</b>	security level

<b>auth</b>	authNoPriv Security Level
<b>noauth</b>	noAuthNoPriv Security Level
<b>priv</b>	authPriv Security Level
<b>read</b>	specify a read view for the group
<b>write</b>	specify a write view for the group
<b>&lt;ViewName : word255&gt;</b>	read view name
<b>&lt;WriteName : word255&gt;</b>	write view name

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# $ext model v2c level noauth write text
SISPM1040-384-LRT-C(config)#
```

**community**

Set the SNMP community.

**SYNTAX**

```
snmp-server community v2c <Community : word127> [ ro | rw ]
snmp-server community v3 <word127> [ <ipv4_addr> <ipv4_netmask> ]
```

**Parameters**

<b>v2c</b>	SNMPv2c
<b>&lt;Community : word127&gt;</b>	Community word
<b>ro</b>	Read only
<b>rw</b>	Read write
<b>v3</b>	SNMPv3
<b>&lt;Community : word127&gt;</b>	Community word
<b>&lt;ipv4_addr&gt;</b>	IPv4 address
<b>&lt;ipv4_netmask&gt;</b>	IPv4 netmask

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# snmp-server community v2c text
SISPM1040-384-LRT-C(config)#
```

**contact**

Set the SNMP server's contact string.

#### SYNTAX

```
snmp-server contact <line255>
```

#### Parameters

<b>contact</b>	Set the SNMP server's contact string
<b>&lt;line255&gt;</b>	contact string

#### EXAMPLE

```
SISPM1040-384-LRT-C(config)# snmp-server contact text
SISPM1040-384-LRT-C(config)#
```

### *engine-id*

Set SNMP engine ID.

#### SYNTAX

```
snmp-server engine-id local <Engineid : word10-32>
```

#### Parameters

<b>local</b>	Set SNMP local engine ID
<b>&lt;Engineid : word10-32&gt;</b>	local engine ID

#### EXAMPLE

```
SISPM1040-384-LRT-C(config)# snmp-server engine-id local 1234567891
SISPM1040-384-LRT-C(config)#
```

### *host*

Set SNMP host's configurations.

#### SYNTAX

```
snmp-server host <word32>
```

#### Parameters

<b>&lt;word32&gt;</b>	Name of the host configuration
-----------------------	--------------------------------

#### EXAMPLE

```
SISPM1040-384-LRT-C(config)# snmp-server host text
SISPM1040-384-LRT-C(config-snmps-host)#
```

## location

Set the SNMP server location string.

### SYNTAX

```
snmp-server location <line255>
```

### Parameters

<line255> location string

### EXAMPLE

```
SISPM1040-384-LRT-C(config)# snmp-server location Hdqtrs-Eng
SISPM1040-384-LRT-C(config)# exit
SISPM1040-384-LRT-C# show snmp info

SNMP Info:
EngineID: 800007e5017f000001
config.mk oid :1.3.6.1.4.1.5205.2.138, length:9
Using oid :1.3.6.1.4.1.868.2.80.1, length:10
Conf: EnterpriseId:868, SwitchId:2, ProductId:80, snmp-oid:868.2.80.1
SISPM1040-384-LRT-C#
```

## security-to-group

Set SNMP security-to-group configuration.

### SYNTAX

```
snmp-server security-to-group model { v1 | v2c | v3 } name <SecurityName : word32> group <GroupName : word32>
```

### Parameters

<b>model</b>	security model
<b>v1</b>	v1 security model
<b>v2c</b>	v2c security model
<b>v3</b>	v3 security model
<b>name</b>	security user
<b>&lt;SecurityName : word32&gt;</b>	security user name
<b>group</b>	security group
<b>&lt;GroupName : word32&gt;</b>	security group name

### EXAMPLE

```
SISPM1040-384-LRT-C(config)# $-group model v2c name text group text
SISPM1040-384-LRT-C(config)#
```

### trap

Set SNMP trap parameters.

#### SYNTAX

```
snmp-server trap
```

#### EXAMPLE

```
SISPM1040-384-LRT-C(config)# snmp-server trap
SISPM1040-384-LRT-C(config)#
```

### user

Set the SNMPv3 users' parameters.

#### 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

<b>&lt;Username : word32&gt;</b>	Username
<b>engine-id</b>	engine ID
<b>&lt;Engineid : word10-32&gt;</b>	Engine ID octet string
<b>md5</b>	Set MD5 protocol
<b>&lt;Md5Passwd : word8-32&gt;</b>	MD5 password
<b>sha</b>	Set SHA protocol
<b>&lt;ShaPasswd word8-40&gt;</b>	SHA password
<b>priv</b>	Set Privacy
<b>des</b>	Set DES protocol
<b>aes</b>	Set AES protocol
<b>&lt;word8-32&gt;</b>	MD5 unencrypted password
<b>encrypted</b>	Specifies an ENCRYPTED password will follow
<b>&lt;word8-40&gt;</b>	SHA unencrypted password
<b>&lt;word8-84&gt;</b>	SHA password

**EXAMPLE**

```
SISPM1040-384-LRT-C(config)# $567891 md5 12345678 priv aes 12345678  
SISPM1040-384-LRT-C(config)#
```

## version

Set the SNMP server version.

### SYNTAX

```
snmp-server version { v1 | v2c | v3 }
```

### Parameters

<b>v1</b>	SNMPv1
<b>v2c</b>	SNMPv2c
<b>v3</b>	SNMPv3

### EXAMPLE

```
SISPM1040-384-LRT-C(config)# snmp-server version v2c
SISPM1040-384-LRT-C(config)#
```

## view

Set SNMP MIB view configuration.

### SYNTAX

```
snmp-server view <ViewName : word32> <OidSubtree : word255> { include | exclude }
```

### Parameters

<b>&lt;ViewName : word32&gt;</b>	MIB view name
<b>&lt;OidSubtree : word255&gt;</b>	MIB view OID
<b>include</b>	Included type from the view
<b>exclude</b>	Excluded type from the view

### EXAMPLE

```
SISPM1040-384-LRT-C(config)# snmp-server view text .1 include
SISPM1040-384-LRT-C(config)#
```

**spanning-tree**

Configure Spanning Tree Protocol parameters.

Table : configure –spanning-tree Commands

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

**aggregation**

Configure Spanning Tree Aggregation mode.

**SYNTAX**

```
spanning-tree aggregation
```

**EXAMPLE**

```
SISPM1040-362-LRT (config)# spanning-tree aggregation
SISPM1040-362-LRT(config-stp-aggr)# ?
  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
  no         Negate a command or set its defaults
  spanning-tree  Spanning Tree protocol
SISPM1040-362-LRT(config-stp-aggr)#
SISPM1040-384-LRT-C(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
----------------	--

## edge

Configure Spanning Tree Edge ports.

### SYNTAX

```
spanning-tree edge bpdu-filter
```

```
spanning-tree edge bpdu-guard
```

### Parameters

<b>bpdu-filter</b>	Enable BPDU filter (stop BPDU tx/rx)
--------------------	--------------------------------------

<b>bpdu-guard</b>	Enable BPDU guard
-------------------	-------------------

### EXAMPLE

```
SISPM1040-384-LRT-C(config)# spanning-tree edge bpdu-filter
SISPM1040-384-LRT-C(config)#
```

## mode

Configure STP protocol mode.

### SYNTAX

```
spanning-tree mode { stp | rstp | mstp }
```

### Parameters

<b>mstp</b>	Multiple Spanning Tree (802.1s)
-------------	---------------------------------

<b>rstp</b>	Rapid Spanning Tree (802.1w)
-------------	------------------------------

<b>stp</b>	802.1D Spanning Tree
------------	----------------------

### EXAMPLE

```
SISPM1040-384-LRT-C(config)# spanning-tree mode stp
SISPM1040-384-LRT-C(config)#
```

**mst**

Configure STP bridge instance.

**SYNTAX**

```

spanning-tree mst <Instance : 0-7> priority <Prio : 0-61440>

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

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

spanning-tree mst max-age <Maxage : 6-40> [ forward-time <Fwdtime : 4-30> ]

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

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

```

**Parameters**

<b>&lt;Instance : 0-7&gt;</b>	instance 0-7 (CIST=0, MST2=1...)
<b>forward-time</b>	Delay between port states
<b>max-age</b>	Max bridge age before timeout
<b>max-hops</b>	MSTP bridge max hop count
<b>name</b>	Name keyword
<b>priority</b>	Priority of the instance
<b>vlan</b>	VLAN keyword
<b>&lt;Prio : 0-61440&gt;</b>	Range in seconds
<b>&lt;vlan_list&gt;</b>	Range of VLANs
<b>&lt;Fwdtime : 4-30&gt;</b>	Range in seconds
<b>&lt;Maxage : 6-40&gt;</b>	Range in seconds
<b>&lt;Maxhops : 6-40&gt;</b>	Hop count range
<b>&lt;Name : word32&gt;</b>	Name of the bridge
<b>revision</b>	Revision keyword
<b>&lt;0-65535&gt;</b>	Revision number

**EXAMPLE**

```

SISPM1040-384-LRT-C(config)# spanning-tree mst 7 vlan 10
SISPM1040-384-LRT-C(config)#

```

**recovery**

Configure STP error recovery timeouts.

**SYNTAX**

**spanning-tree** recovery interval <Interval : 30-86400>

#### Parameters

<b>interval</b>	The interval
<Interval : 30-86400>	Range in seconds

#### EXAMPLE

```
SISPM1040-384-LRT-C(config)# spanning-tree recovery interval 50  
SISPM1040-384-LRT-C(config)#
```

### **transmit**

Configure STP BPDUs to transmit.

#### SYNTAX

**spanning-tree** transmit hold-count <Holdcount : 1-10>

#### Parameters

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

#### EXAMPLE

```
SISPM1040-384-LRT-C(config)# spanning-tree transmit hold-count 5  
SISPM1040-384-LRT-C(config)#
```

## 7. Interface Config Mode Commands

### Configurable Interfaces

To view the configurable interfaces, type `interface ?` at the config mode prompt.

```
SISPM1040-362-LRT-C(config)# interface ?
*                All switches or All ports
GigabitEthernet  1 Gigabit Ethernet Port
vlan             VLAN interface configurations
SISPM1040-384-LRT-C(config)# interface GigabitEthernet ?
<port_type_list>  Port list in 1/1-12
SISPM1040-384-LRT-C(config)# interface
```

To enter Interface Config mode, type `interface <interface>` at the config mode prompt.

Example:

```
SISPM1040-384-LRT-C(config)# interface GigabitEthernet 1/2
SISPM1040-384-LRT-C(config-if)#
```

### Interface Config Mode Command List

<b>Command</b>	<b>Description</b>
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 size.	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.

**access-list**

Configure Access list.

**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.
mirror	Mirror frame to destination mirror port
policy	Policy
port-state	Re-enable shutdown port that was shutdown by access-list module
rate-limiter	Rate limiter
redirect	Redirect frame to specific port
shutdown	Shutdown incoming port. Packet length must be less than 1518 (without VLAN tags).
deny	Deny action
permit	Permit action
<1-256>	EVC policer ID
<0-255>	Policy ID
<1-16>	Rate limiter 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

<port\_type\_list> Port list in 1/1-12

#### EXAMPLE

```
SISPM1040-384-LRT-C(config-if)# access-list action permit
SISPM1040-384-LRT-C(config-if)# access-list logging
SISPM1040-384-LRT-C(config-if)# access-list evc-policer 1
SISPM1040-384-LRT-C(config-if)# access-list logging
SISPM1040-384-LRT-C(config-if)# access-list mirror
SISPM1040-384-LRT-C(config-if)# access-list policy 0
SISPM1040-384-LRT-C(config-if)#
```

**Messages:** % Port redirect cannot be configured while permitted action on GigabitEthernet 1/11.

### aggregation

Create an aggregation.

#### SYNTAX

**aggregation** group <v\_uint>

#### Parameters

group Create an aggregation group

<uint> The aggregation group id

<cr>

#### EXAMPLE

```
SISPM1040-384-LRT-C(config-if)# aggregation group 1
SISPM1040-384-LRT-C(config-if)#
```

## **description**

Configure port description.

### **SYNTAX**

```
description <description>
```

### **Parameters**

description     Configures port description  
<line128>     Up to 128 characters describing this interface

### **EXAMPLE**

```
SISPM1040-384-LRT-C(config-if)# description port 6  
SISPM1040-384-LRT-C(config-if)#
```

## **do**

Perform an Exec mode command from Interface Config mode .

### **SYNTAX**

```
do <line> Exec Command
```

### **Parameters**

```
do <command>
```

### **EXAMPLE**

```
SISPM1040-384-LRT-C(config)# do show version brief  
Version      : SISPM1040-384-LRT-C (standalone) v7.20.0206  
Build Date   : 2023-05-27T16:26:55+08:00  
SISPM1040-384-LRT-C(config)# do show ip int brief  
Vlan Address          Method  Status  
-----  
  1 192.168.1.77/24    Manual  UP  
SISPM1040-384-LRT-C(config)#
```

**dot1x**

Configure IEEE Standard for port-based Network Access Control.

**SYNTAX**

**dot1x** guest-vlan

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

**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.
<b>auto</b>	<b>Port-based 802.1X Authentication</b>
<b>force-authorized</b>	<b>Port access is allowed</b>
<b>force-unauthorized</b>	<b>Port access is not allowed</b>
<b>mac-based</b>	<b>Switch authenticates on behalf of the client</b>
<b>multi</b>	<b>Multiple Host 802.1X Authentication</b>
<b>single</b>	<b>Single Host 802.1X Authentication</b>
<b>mac-auth-bypass</b>	<b>MAC authentication bypass</b>

**EXAMPLE**

```
SISPM1040-384-LRT-C(config-if)# dot1x guest-vlan
SISPM1040-384-LRT-C(config-if)# dot1x port-control auto
The 802.1X Admin State must be set to Authorized for ports that are enabled for static
aggregation
SISPM1040-384-LRT-C(config-if)#
```

**duplex**

Configure Interface duplex.

**SYNTAX**

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

#### Parameters

auto	Auto negotiation of duplex mode.
full	Forced full duplex.
half	Forced half duplex.

#### EXAMPLE

```
SISPM1040-384-LRT-C(config-if)# duplex auto
SISPM1040-384-LRT-C(config-if)#
```

### *end*

Go back to EXEC mode.

#### SYNTAX

**end** <cr>

#### Parameters

None.

#### EXAMPLE

```
SISPM1040-384-LRT-C(config-if)# end
SISPM1040-384-LRT-C#
```

### *exit*

Exit from current mode.

#### SYNTAX

**exit** <cr>

#### Parameters

None.

#### EXAMPLE

```
SISPM1040-384-LRT-C(config-if)# exit
SISPM1040-384-LRT-C(config)#
```

### *evc*

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
destination	Match DMAC and DIP
source	Match SMAC and SIP
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
inner	Match inner tag
outer	Match outer tag
<cr>	

**EXAMPLE**

```
SISPM1040-384-LRT-C(config-if)# evc <cr>
SISPM1040-384-LRT-C(config-if)# evc dei fixed
SISPM1040-384-LRT-C(config-if)# evc l2cp peer
SISPM1040-384-LRT-C(config-if)# evc l2cp peer 6
SISPM1040-384-LRT-C(config-if)# evc addr source update
SISPM1040-384-LRT-C(config-if)#
```

**event**

Configure port event settings.

#### 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	Sntp
syslog	Syslog
traffic-duration	Traffic duration
trap	Trap
disable	(function) disable
enable	(function) enable

#### EXAMPLE

```
SISPM1040-384-LRT-C(config-if)# event active enable
SISPM1040-384-LRT-C(config-if)# event overload enable
SISPM1040-384-LRT-C(config-if)# event trap enable
SISPM1040-384-LRT-C(config-if)#
```

#### *excessive-restart*

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

#### SYNTAX

```
excessive-restart <cr>
```

#### Parameters

None.

#### EXAMPLE

```
SISPM1040-384-LRT-C(config-if)# excessive-restart
SISPM1040-384-LRT-C(config-if)#
```

### *flowcontrol*

Configure Traffic flow control.

#### SYNTAX

**flowcontrol** { on | off }

#### Parameters

off            Disable flow control.  
on             Enable flow control.

#### EXAMPLE

```
SISPM1040-384-LRT-C(config-if)# flowcontrol on
SISPM1040-384-LRT-C(config-if)#
```

### *frame-length-check*

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

#### SYNTAX

frame-length-check <cr>

#### Parameters

None.

#### EXAMPLE

```
SISPM1040-384-LRT-C(config-if)# frame-length-check
SISPM1040-384-LRT-C(config-if)#
```

### *green-ethernet*

Configure Green ethernet (Power reduction).

#### SYNTAX

**green-ethernet** eee  
**green-ethernet** eee urgent-queues [ <urgent\_queue\_range\_list> ]

**green-ethernet** energy-detect**green-ethernet** short-reach**Parameters**

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

<cr>

**EXAMPLE**

```
SISPM1040-384-LRT-C(config-if)# green-ethernet eee
SISPM1040-384-LRT-C(config-if)# green-ethernet energy-detect
SISPM1040-384-LRT-C(config-if)# green-ethernet short-reach
SISPM1040-384-LRT-C(config-if)#
```

**gvrp**

Enable GVRP on interface or interfaces.

**SYNTAX**

**gvrp** <cr>

**Parameters**

None.

**EXAMPLE**

```
SISPM1040-384-LRT-C(config-if)# gvrp
SISPM1040-384-LRT-C(config-if)#
```

## help

Description of the interactive help system.

### SYNTAX

**help** <cr>

### Parameters

None.

### EXAMPLE

```
SISPM1040-384-LRT-C(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?'.)

```
SISPM1040-384-LRT-C(config-if)#
```

**ip**

Configure Internet Protocol for an interface.

**SYNTAX**

```

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

```

**Parameters**

arp	Address Resolution Protocol
dhcp	Dynamic Host Configuration Protocol
igmp	Internet Group Management Protocol
verify	verify command
inspection	ARP inspection
check-vlan	ARP inspection VLAN mode configuration
logging	ARP inspection logging mode configuration
trust	ARP inspection trust configuration
snooping	DHCP snooping
trust	DHCP Snooping trust configuration
snooping	Snooping IGMP
filter	Access control on IGMP multicast group registration
immediate-leave	Immediate leave configuration
max-groups	IGMP group throttling configuration
mrouter	Multicast router port configuration
<word16>	Profile name in 16 char's
<1-10>	Maximum number of IGMP group registration

**EXAMPLE**

```
SISPM1040-384-LRT-C(config-if)# ip arp inspection trust
SISPM1040-384-LRT-C(config-if)# ip arp inspection check-vlan
SISPM1040-384-LRT-C(config-if)# ip igmp snooping immediate-leave
SISPM1040-384-LRT-C(config-if)# ip igmp snooping max-groups 5
SISPM1040-384-LRT-C(config-if)# ip igmp snooping mrouter
SISPM1040-384-LRT-C(config-if)# ip dhcp snooping trust
SISPM1040-384-LRT-C(config-if)# ip verify source limit 1
SISPM1040-384-LRT-C(config-if)#
```

**ipv6**

IPv6 configuration commands.

**SYNTAX**

```
ipv6 mld snooping filter <profile_name>
ipv6 mld snooping immediate-leave
ipv6 mld snooping max-groups <throttling>
ipv6 mld snooping mrouter
```

**Parameters**

mld	Multicasat 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**

```
SISPM1040-384-LRT-C(config-if)# ipv6 mld snooping max-groups 5
SISPM1040-384-LRT-C(config-if)# ipv6 mld snooping mrouter
SISPM1040-384-LRT-C(config-if)#
```

**lACP**

Enable and configure LACP on this interface.

#### 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
<1-65535>	Priority value, lower means higher priority
active	Transmit LACP BPDUs continuously
passive	Wait for neighbor LACP BPDUs before transmitting
fast	Transmit BPDU each second (fast timeout)
slow	Transmit BPDU each 30th second (slow timeout)
<cr>	

#### EXAMPLE

```
SISPM1040-384-LRT-C(config-if)# lacp key 400
SISPM1040-384-LRT-C(config-if)# lacp key auto
SISPM1040-384-LRT-C(config-if)# lacp port-priority 400
SISPM1040-384-LRT-C(config-if)# lacp role active
SISPM1040-384-LRT-C(config-if)# lacp timeout fast
SISPM1040-384-LRT-C(config-if)#
```

#### Messages:

*Error:Static aggregation is enabled Could not set LACP parameter*

#### link-oam

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

#### SYNTAX

**link-oam**

**link-oam** link-monitor frame { [ window <error\_window> ] [ threshold <error\_threshold> ] }\*1

**link-oam** link-monitor frame-seconds { [ window <error\_window> ] [ threshold <error\_threshold> ] }\*1

**link-oam** link-monitor supported

**link-oam** link-monitor symbol-period { [ window <error\_window> ] [ threshold <error\_threshold> ] }\*1

**link-oam** mib-retrieval supported

**link-oam** mode { active | passive }

**link-oam** remote-loopback supported

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

**Parameters**

link-monitor	Configure link monitoring
mib-retrieval	Set MIB retrieval support
mode	Set Link OAM mode Active or Passive on this interface
remote-loopback	Link OAM remote loopback support
variable-retrieve	Set mib variable retrieve local info or remote info
frame	Configure frame error event thresholds and window for error frames that trigger an error-frame link event
frame-seconds	Configure frame seconds summary
supported	Enable or Disable(when the no keyword is entered) link monitor on the interface
symbol-period	Configure window and thresholds for an error-symbol period that triggers an error-symbol period link event
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

**EXAMPLE**

```
SISPM1040-384-LRT-C(config-if)# link-oam remote-loopback supported
SISPM1040-384-LRT-C(config-if)# link-oam mode active
SISPM1040-384-LRT-C(config-if)# link-oam remote-loopback supported
SISPM1040-384-LRT-C(config-if)# link-oam variable-retrieve local-info
% This feature is not supported yet.
SISPM1040-384-LRT-C(config-if)# link-oam variable-retrieve remote-info
% This feature is not supported yet.
SISPM1040-384-LRT-C(config-if)#
```

**lldp**

Configure LLDP and LLDP-MED parameters.

**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 them is a matter of who is initializing the LLDP-MED TVLs transmission. A "Network Connectivity Device" is not starting LLDP-MED TVLs transmission until it has detected an "Endpoint Device" as link partner. An "Endpoint Device" will start LLDP-MED TVLs transmission at once.
connectivity	Work as connectivity device.
end-point	Work as end-point device.
policy-list	Assignment of policies.
<range_list>	Policies to assign to the interface.
capabilities	Enable transmission of the optional capabilities TLV.

location	Enable transmission of the optional location TLV.
network-policy	Enable transmission of the optional network-policy TLV.
poe	Enable/Disable transmission of the optional PoE TLV.
connectivity	Work as connectivity device.
end-point	Work as end-point device.

**EXAMPLE**

```
SISPM1040-384-LRT-C(config-if)# lldp cdp-aware
SISPM1040-384-LRT-C(config-if)# lldp med media-vlan policy-list 1
Ignoring policy 1 for GigabitEthernet 1/6, because no such policy is defined
SISPM1040-384-LRT-C(config-if)# lldp receive
SISPM1040-384-LRT-C(config-if)# lldp transmit
SISPM1040-384-LRT-C(config-if)# lldp med type connectivity
SISPM1040-384-LRT-C (config-if)# lldp med media-vlan policy-list 1
SISPM1040-384-LRT-C (config-if)# lldp med media-vlan policy-list 2
Ignoring policy 2 for GigabitEthernet 1/1, because no such policy is defined
↓ ↓ ↓ ↓ ↓
Ignoring policy 2 for GigabitEthernet 1/12, because no such policy is defined
SISPM1040-384-LRT-C (config-if)# lldp med transmit-tlv capabilities location network-policy poe
SISPM1040-384-LRT-C (config-if)# lldp med type connectivity
SISPM1040-384-LRT-C (config-if)# lldp med type end-point
SISPM1040-384-LRT-C(config-if)#
```

**loop-protect**

Configure Loop protection parameters on a 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

shutdown          Shutdown port

#### EXAMPLE

```
SISPM1040-384-LRT-C(config-if)# loop-protect
SISPM1040-384-LRT-C(config-if)# loop-protect action log
SISPM1040-384-LRT-C(config-if)# loop-protect tx-mode
SISPM1040-384-LRT-C(config-if)#
```

#### mac

Configure MAC keyword.

#### SYNTAX

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

#### Parameters

address-table	MAC table configuration
learning	Port learning mode
secure	Port Secure mode
<cr>	

#### EXAMPLE

```
SISPM1040-384-LRT-C(config-if)# mac address-table learning secure
SISPM1040-384-LRT-C(config-if)#
```

#### mtu

Configure Maximum Transmission Units on an interface.

#### SYNTAX

**mtu** <max\_length>

#### Parameters

mtu	
mtu <max_length>	
mtu	Maximum transmission unit
1518-9600	Maximum frame size in bytes.

#### EXAMPLE

```
SISPM1040-384-LRT-C(config-if)# mtu 4000
SISPM1040-384-LRT-C(config-if)#
```

**mvr**

Configure Multicast VLAN Registration parameters 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
<cr>	

**EXAMPLE**

```
SISPM1040-384-LRT-C(config-if)# mvr name Mvr1 type receiver
SISPM1040-384-LRT-C(config-if)#
```

**Messages:**     % Invalid MVR VLAN Mvr1.  
                  % Failed to set MVR port role.

**no**

Negate a command or set its defaults for an interface.

**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**

```
SISPM1040-384-LRT-C(config-if)# no sflow
SISPM1040-384-LRT-C(config-if)#
SISPM1040-384-LRT-C(config-if)# no debug ?
    phy    Select phy for debugging (Note only local PHYs, NOT stack-aware)
SISPM1040-384-LRT-C(config-if)# no debug
```

**poe**

Configure Power Over Ethernet for an interface. Note that there are also commands to configure PoE in Exec mode.

**SYNTAX**

```

poe delay-mode
poe delay-time <v_0_to_300>
poe failure-action { nothing | reboot-Remote-PD }
poe hour <v_hour>
poe interval-time <interval>
poe max-reboot-times <<0-10>>
poe mode { enable | disable | force | 2-pair }
poe ping-ip-addr { <address> | <ipv6> }
poe ping-retry-time <retry>
poe port-profile name <entry_name>
poe power limit { <v_word9> }
poe priority { low | high | critical }
poe reboot-time <reboot>
poe schedule-all
poe schedule-mode
poe startup-time <startuptime>
poe weekday { Sun | Mon | Tue | Wed | Thr | Fri | Sat } hour [ <hour_v_0_to_23>]

```

**Parameters**

delay-mode	Configure PoE Power delay mode
delay-time	Setting power delay time from 0 to 300(sec).
failure-action	Configure PoE Auto Power Reset Failure Action.
hour	Configure PoE Power scheduling per hour.
interval-time	Configure PoE Auto Power Reset Interval Time.
max-reboot-times	Configure PoE Auto Power Reset Max Reboot Times <0-10>.
mode	PoE mode.
ping-ip-addr	Configure PoE Ping IP Address.
ping-retry-time	Configure PoE Auto Power Reset Retry Time.

port-profile	poe scheduling profile
power	Setting maximum power for port in allocation mode.
priority	Interface priority.
reboot-time	Configure PoE Auto Power Reset Reboot Time.
schedule-all	Configure PoE Schedule all of hours.
schedule-mode	Configure PoE Schedule mode.
startup-time	Configure PoE Auto Power Reset Start up Time.
weekday	Configure PoE Power scheduling on week day.
disable	Set mode to PoE Disable
enable	Set mode to PoE Enable (Maximum power 30.0 W)
force	Set mode to PoE Force. The switch port will power up the linked PD
without any	

detect/negotiate mechanism (PD limited to 30W). **Note:** Only connect PDs which support a power input of 48~56V to prevent damage to PDs. When the port changes to Force mode, the port's PoE LED will light immediately. Select Force mode for devices that do not do POE negotiation (e.g., for a PoE DSRC RSU). **Caution:** using PoE 'Force' mode to force the switch to send PoE to non-PoE devices can physically damage those devices.

**Caution:** If utilizing the PoE Force mode feature, only connect PDs which support power input in the 48~56V range to prevent damage to PDs. When the port is changed to Force mode, the port's PoE LED lights immediately. See the Web User Guide for details. **Caution:** PoE device components may fail due to transient voltage spikes on the PoE line. It is strongly suggested that a surge suppressor be used on each PoE port, especially in areas with frequent lightning and other types of interference.

<0-300>	PoE delay time
nothing	Failure Action : Nothing.
reboot-Remote-PD	Failure Action : Reboot Remote PD.
<0-23>	Enter hour.
<10-120>	Interval Time : 10 ~ 120(sec).
disable	Set mode to PoE Disable
enable	Set mode to PoE Enable (Maximum power 30.0 W)
<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 40W).
critical	Set priority to critical.
high	Set priority to high.
low	Set priority to low.
<3-120>	Reboot Time : 3 ~ 120 (sec).
<30-600>	Start up Time : 30 ~ 600 (sec).
Fri	Configure PoE Power scheduling on Friday.
Mon	Configure PoE Power scheduling on Monday.
Sat	Configure PoE Power scheduling on Saturday.
Sun	Configure PoE Power scheduling on Sunday.
Thr	Configure PoE Power scheduling on Thursday.
Tue	Configure PoE Power scheduling on Tuesday.
Wed	Configure PoE Power scheduling on Wednesday.

**EXAMPLE**

```
SISPM1040-384-LRT-C(config-if)# poe delay-mode
SISPM1040-384-LRT-C(config-if)# poe delay-time 90
SISPM1040-384-LRT-C(config-if)# poe failure-action reboot-Remote-PD
SISPM1040-384-LRT-C(config-if)# poe mode enable
SISPM1040-384-LRT-C(config-if)# poe mode force
SISPM1040-384-LRT-C(config-if)# poe power limit 30
SISPM1040-384-LRT-C(config-if)# poe max-reboot-times 4
SISPM1040-384-LRT-C(config-if)# poe power limit 40
GigabitEthernet 1/9 does not have PoE support
GigabitEthernet 1/10 does not have PoE support
GigabitEthernet 1/11 does not have PoE support
GigabitEthernet 1/12 does not have PoE support
SISPM1040-384-LRT-C(config-if)#
```

***port-security***

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
vlan	VLAN keyword
<vlan_id>	VLAN ID (VID)
protect	Don't do anything
shutdown	Shutdown the port
trap	Send an SNMP trap
trap-shutdown	Send an SNMP trap and shutdown the port
<cr>	

#### EXAMPLE

```
SISPM1040-384-LRT-C(config-if)# port-security maximum 400
SISPM1040-384-LRT-C(config-if)# port-security sticky
SISPM1040-384-LRT-C(config-if)# port-security sticky 11:22:33:44:55:66 vlan 200
SISPM1040-384-LRT-C(config-if)# port-security violation trap-shutdown
SISPM1040-384-LRT-C(config-if)#
```

#### *ptp*

Configure Precision time Protocol (1588) for an interface.

#### 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>	Clock instance [0-3]
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
<-100000-100000>	Delay asymmetry in ns.
e2e	End to End Delay mechanism
p2p	Peer to Peer Delay mechanism
interval	Define Path-Delay request interval
<-7-5>	Path-Delay request intervalPath-Delay request interval
<-100000-100000>	Egress latency in ns
<-100000-100000>	Ingress latency in ns
<-7-4>	LogSyncInterval

#### EXAMPLE

```

SISPM1040-384-LRT-C(config-if)# ptp 0 announce interval 1 timeout 5
Error setting port data instance 0 port 6
SISPM1040-384-LRT-C(config-if)# ptp 0 delay-asymmetry 6000

```

```
Error setting port data instance 0 port 6
SISPM1040-384-LRT-C(config-if)# ptp 0 egress-latency -9000
Error setting port data instance 0 port 6
SISPM1040-384-LRT-C(config-if)# ptp 0 internal
SISPM1040-384-LRT-C(config-if)# ptp 0 sync-interval 3
SISPM1040-384-LRT-C(config-if)# ptp 0
SISPM1040-384-LRT-C(config-if)# ptp 0 ingress-latency 5000
SISPM1040-384-LRT-C(config-if)# ptp 0 delay-req interval 3
SISPM1040-384-LRT-C(config-if)#
```

#### MESSAGES

*Error getting port data instance 0 port 1*

## ***pvlan***

Configure Private VLAN.

#### SYNTAX

**pvlan** <pvlan\_list>

**pvlan** isolation

#### Parameters

<range\_list> list of PVLANS. Range is from 1 to number of ports.

isolation Port isolation

#### EXAMPLE

```
SISPM1040-384-LRT-C(config-if)# pvlan 6
SISPM1040-384-LRT-C(config-if)# pvlan isolation
SISPM1040-384-LRT-C(config-if)#
```

**qos**

Configure Quality of Service parameters 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
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 global	Rewrite DSCP field using classified DSCP and DPL=0 remapped through dscp-egress-translation map
remap-dp	Rewrite DSCP field using classified DSCP and DPL remapped through global dscp-egress-translation map
rewrite	Rewrite DSCP field with classified DSCP value (no translation)
cos-tag	Map for cos to tag configuration
tag-cos	Map for tag to cos configuration
cos	Specify class of service
<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
destination	Match DMAC and DIP
source	Match SMAC and SIP (default)

queue	Specify queue
<0~7>	Specific queue or range
queue	Specify queue
<0~7>	Specific queue or range
mapped	Used mapped values (cos,dpl -> pcp,dei)
pcp	Specify default PCP
dscp	DSCP value
tag	VLAN tag
<1-100>	Weight for queue 0
<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
<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

**EXAMPLE**

```
SISPM1040-384-LRT-C(config-if)# qos cos 7
SISPM1040-384-LRT-C(config-if)# qos dei 0
SISPM1040-384-LRT-C(config-if)# qos dscp-translate
SISPM1040-384-LRT-C(config-if)# qos map cos-tag cos 6 dpl 1 pcp 3 dei 0
SISPM1040-384-LRT-C(config-if)# qos wrr 20 30 40 50 60 70
SISPM1040-384-LRT-C(config-if)#
```

**rmon**

Configure Remote Monitoring on an interface.

**SYNTAX**

```
rmon collection history <id> [ buckets <buckets> ] [ interval <interval> ]
rmon collection stats <id>
```

**Parameters**

collection	Configure Remote Monitoring Collection on an interface
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**

```
SISPM1040-384-LRT-C(config-if)# rmon collection history 5 buckets 90 interval 600
SISPM1040-384-LRT-C(config-if)#
```

***sflow***

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 in the monitored flows. There are no restrictions on the value, but the switch will adjust it to the closest possible sampling rate.
<1-3600>	seconds
<14-200>	bytes
all	Both Tx and Rx sampler types
rx	Rx sampler type
tx	Tx sampler type
<1-4294967295>	Sampling rate
<cr>	

**EXAMPLE**

```
ISPM1040-384-LRT-C(config-if)# sflow
SISPM1040-384-LRT-C(config-if)# sflow counter-poll-interval 400
SISPM1040-384-LRT-C(config-if)# sflow max-sampling-size 20
SISPM1040-384-LRT-C(config-if)# sflow sampler-type all
SISPM1040-384-LRT-C(config-if)# sflow sampling-rate 45000
SISPM1040-384-LRT-C(config-if)#
```

***shutdown***

Shutdown of the interface.

**SYNTAX**

shutdown ,cr>

**Parameters**

None.

**EXAMPLE**

```
SISGM1040-284-LRT(config-if)# shutdown  
SISGM1040-284-LRT(config-if)#  
  
SISPM1040-384-LRT-C(config-if)# shutdown
```

**spanning-tree**

Configure Spanning Tree protocol.

**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
<0-240>	Range (lower higher priority)
<cr>	

**EXAMPLE**

```
SISPM1040-384-LRT-C(config-if)# spanning-tree
SISPM1040-384-LRT-C(config-if)# spanning-tree auto-edge
SISPM1040-384-LRT-C(config-if)# spanning-tree bpdu-guard
SISPM1040-384-LRT-C(config-if)# spanning-tree edge
SISPM1040-384-LRT-C(config-if)# spanning-tree link-type auto
SISPM1040-384-LRT-C(config-if)# spanning-tree restricted-role
SISPM1040-384-LRT-C(config-if)# spanning-tree restricted-tcn
SISPM1040-384-LRT-C(config-if)# spanning-tree mst 0 cost 50000
SISPM1040-384-LRT-C(config-if)# spanning-tree mst 0 port-priority 100
Could not set MSTP port conf
SISPM1040-384-LRT-C(config-if)#
```

## **speed**

Configure 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 | auto { [ 10 ] [ 100 ] [ 1000 ] } }
```

### **Parameters**

10	10Mbps
100	100Mbps
1000	1Gbps
auto	Auto negotiation

### **EXAMPLE**

```
SISPM1040-384-LRT-C(config-if)# speed 10
SISPM1040-384-LRT-C(config-if)# speed 100
SISPM1040-384-LRT-C(config-if)# speed 1000
SISPM1040-384-LRT-C(config-if)# speed auto
SISPM1040-384-LRT-C(config-if)# speed auto 100
SISPM1040-384-LRT-C(config-if)# speed 1000x-ams
      ^
% Invalid word detected at '^' marker.

SISPM1040-384-LRT-C(config-if)#
```

**switchport**

Configure Switching mode characteristics for an interface.

**SYNTAX**

```

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

```

**Parameters**

access	Set access mode characteristics of the interface
forbidden	Adds or removes forbidden VLANs from the current list of forbidden VLANs
hybrid	Change PVID for hybrid port
mode	Set mode of the interface
trunk	Change PVID for trunk port
vlan	VLAN commands
voice	Voice appliance attributes

---

vlan	Set VLAN when interface is in access mode
<vlan_id>	VLAN ID of the VLAN when this port is in access mode
vlan	Add or modify VLAN entry in forbidden table.
add	Add to existing list.
remove	Remove from existing list.
<vlan_list>	VLAN IDs
acceptable-frame-type	Set acceptable frame type on a port
allowed	Set allowed VLAN characteristics when interface is in hybrid mode
egress-tag	Egress VLAN tagging configuration
ingress-filtering	VLAN Ingress filter configuration
native	Set native VLAN
port-type	Set port type
all	Allow all frames
tagged	Allow only tagged frames
untagged	Allow only untagged frames
<vlan_list>	VLAN IDs of the allowed VLANs when this port is in hybrid 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
all	Tag all frames
none	No egress tagging
access	Set mode to ACCESS unconditionally
hybrid	Set mode to HYBRID unconditionally
trunk	Set mode to TRUNK unconditionally
allowed	Set allowed VLAN characteristics when interface is in trunk mode
native	Set native VLAN
vlan	VLAN commands
ip-subnet	VCL IP Subnet-based VLAN configuration.
mac	MAC-based VLAN commands
mapping	Maps an interface to a VLAN translation group..

protocol	Protocol-based VLAN commands
group	Protocol-based VLAN group commands
<word16>	Group Name (Range: 1 - 16 characters)
<1-12>	Group id
<mac_ucast>	48 bit unicast MAC address: xx:xx:xx:xx:xx:xx
<ipv4_subnet>	Source IP address and mask (Format: xx.xx.xx.xx/mm.mm.mm.mm).
id	Specify an index for the IP subnet entry (deprecated)
vlan	VLAN for voice traffic
discovery-protocol	Set Voice VLAN port discovery protocol
mode	Set Voice VLAN port mode
security	Enable Voice VLAN port security mode
<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)
<1-128>	The index of the IP subnet entry (deprecated)
<ipv4_subnet>	Source IP address and mask (Format: xx.xx.xx.xx/mm.mm.mm.mm).
<vlan_list>	VLAN IDs of the allowed VLANs when this port is in trunk 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
<cr>	

**EXAMPLE**

```
SISPM1040-384-LRT-C(config-if)# switchport access vlan 10
SISPM1040-384-LRT-C(config-if)# switchport forbidden vlan add 100
SISPM1040-384-LRT-C(config-if)# switchport hybrid ingress-filtering
SISPM1040-384-LRT-C(config-if)# switchport mode access
SISPM1040-384-LRT-C(config-if)# switchport mode hybrid
SISPM1040-384-LRT-C(config-if)# switchport mode trunk
```

```
SISPM1040-362-LRT(config-if)# switchport voice vlan discovery-protocol oui
SISPM1040-362-LRT(config-if)# switchport trunk allowed vlan except 100
SISPM1040-384-LRT-C (config-if)# switchport voice vlan mode force
Interface 1/1 must disable Spanning Tree feature before enable Voice Vlan
:::
Interface 1/12 must disable Spanning Tree feature before enable Voice Vlan
SISPM1040-384-LRT-C (config-if)# switchport voice vlan security
SISPM1040-362-LRT(config-if)#
```

**udld**

Configure Uni Directional Link Detection parameters for an interface.

**SYNTAX**

```
udld port [ aggressive ] [ message time-interval <v_interval> ]
```

**Parameters**

port	UDLD configuration on the interface
aggressive	Enable UDLD in the aggressive mode on an interface
message 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 seconds is supported).
<7-90>	Configures the period of time between UDLD probe messages on ports that are in the advertisement phase and are determined to be bidirectional. The range is 7 - 90 seconds (currently default message time interval 7 seconds is supported).
<cr>	

**EXAMPLE**

```
SISPM1040-384-LRT-C(config-if)# udld port aggressive message time 8
SISPM1040-384-LRT-C(config-if)# udld port message time-interval 7
SISPM1040-384-LRT-C(config-if)#
```

## 8. Copy Commands

### *copy*

Copy from source to destination (before FW v7.20.0034). For the copy via SFTP commands added at v7.20.0034 see [Appendix B Secure File Transfer \(SFTP\) Set-Up](#) on page 362.

#### SYNTAX

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

#### Parameters

<code>&lt;url_file&gt;</code>	File in FLASH or on TFTP server. Sytax: <flash:filename   tftp://server/path-and-filename>.  A valid file name is a text string drawn from alphabet (A-Za-z), digits (0-9), dot (.), hyphen (-), under score (_). The maximum length is 63 and hyphen must not be first character.  The filename content that only contains '.' is not allowed.
<b>running-config</b>	Currently running configuration
<b>startup-config</b>	Startup configuration
	Output modifiers
<b>merge</b>	merge source file with running-config
<b>replace</b>	replace running-config with source file, default action
<b>syntax-check</b>	Perform syntax check on source configuration
save-host-key	Enable saving the host key.
ftp-active	Keep FTP active
<code>&lt;cr&gt;</code>	

#### EXAMPLE

```
SISPM1040-384-LRT-C# $config running-config syntax-check | include xxxx
SISPM1040-384-LRT-C# copy running-config startup-config
Building configuration...
% Saving 3561 bytes to flash:startup-config
SISPM1040-384-LRT-C#
```

## 9. Delete Commands

### *delete*

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

#### EXAMPLE

```
SISPM1040-384-LRT-C# delete text
```

```
SISPM1040-384-LRT-C#
```

## 10. Dir Commands

### *dir*

Directory of all files in flash: file system.

#### SYNTAX

```
Dir [ | begin | exclude | include <LINE>]
```

#### Parameters

	Output modifiers
<b>begin</b>	Begin with the line that matches
<b>exclude</b>	Exclude lines that match
<b>include</b>	Include lines that match
<b>&lt;LINE&gt;</b>	String to match output lines

#### EXAMPLE

```
SISPM1040-384-LRT-C# dir
Directory of flash:
  r- 2010-12-31 23:59:59      716 default-config
1 file, 716 bytes total.
SISPM1040-384-LRT-C# dir
Directory of flash:
  r- 2010-12-31 23:59:59      716 default-config
  rw 2020-03-02 14:43:01     3561 startup-config
2 files, 4277 bytes total.
SISPM1040-384-LRT-C#
```

# 11. Disable Commands

## *disable*

Turn off privileged commands.

### SYNTAX

```
disable [ <new_priv> ]
```

### Parameters

<0-15>

<cr>

### EXAMPLE

```
SISPM1040-362-LRT# disable?
  disable   Turn off privileged commands
  <cr>
SISPM1040-362-LRT# disable?
disable [ <new_priv> ]
SISPM1040-362-LRT# disable
<0-15> <cr>
SISPM1040-362-LRT# disable ?
  <0-15>
  <cr>
SISPM1040-362-LRT#
```

## 12. Do Commands

### *do*

Run Exec mode commands in any mode.

#### SYNTAX

**do** <line>    Exec Command

#### Parameters

<line>    Exec Command

#### EXAMPLE

```
SISPM1040-384-LRT-C# do show clock
System Time      : 2019-09-11T11:13:23+00:00

SISPM1040-362-LRT# do show ip int brief
Vlan Address          Method  Status
-----
 1 192.168.1.77/24     Manual  UP
SISPM1040-362-LRT#
```

## 13. DOT1x Commands

### *dot1x*

IEEE Standard for port-based Network Access Control.

#### SYNTAX

```
dot1x initialize [ interface ( <port_type> [ <plist> ] ) ]
```

#### Parameters

<b>initialize</b>	Force re-authentication immediately
<b>interface</b>	Interface
<b>*</b>	All switches or All ports
<b>Gigabitethernet</b>	1 GigabitEthernet port
<b>&lt;port_type_list&gt;</b>	Port list in 1/1-8 for Gigabitethernet

#### EXAMPLE

```
SISPM1040-384-LRT-C# dot1x initialize interface GigabitEthernet 1/1-12  
SISPM1040-384-LRT-C#
```

## 14. Enable Commands

### *enable*

Turn on privileged commands.

#### Syntax

```
enable [ <new_priv> ]
```

#### Parameters

<0-15> Choose privileged level

<cr>

#### EXAMPLE

```
SISPM1040-384-LRT-C# enable 10
```

```
SISPM1040-384-LRT-C#
```

## 15. Firmware Commands

### *firmware*

Firmware upgrade and firmware swap commands. **Note:** Do not power off device while a Firmware upgrade or firmware swap is in process.

#### Syntax

**firmware** swap

**firmware** upgrade <url\_file> [ save-host-key ]

#### Parameters

**swap** Swap between Active and Alternate firmware image. A Reset may be required.

**upgrade** Firmware upgrade. **Note:** For SISPM1040-362-LRT FW v7.10.2710: upgrade to FW v7.10.2706 first, then to v7.10.2710.

<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.

#### EXAMPLE 1

```
SISPM1040-384-LRT-C# firmware upgrade tftp://192.168.1.77/jeffs/downloads/SISPM1040-384-LRT-
C_v7.10.2121_201902019.imgs
SISPM1040-384-LRT-C# firmware upgrade tftp://192.168.1.77/jeffs/downloads/SISPM1040-384-LRT-
C_v7.10.2121_201902019.imgs
Download of /jeffsherman/downloads/SISPM1040-384-LRT-C_v7.10.2121_201902019.imgs from
192.168.1.77 failed: Operation timed out.
SISPM1040-384-LRT-C#
```

**Message:** *Warning: conf\_sec\_open failed, creating defaults*

**Meaning:** Message displays on the CLI after firmware swap.

**Recovery:** None; this occurs on all switches and does not appear to cause any problems.

#### EXAMPLE 2

```
SISPM1040-384-LRT-C# firmware swap
Alternate image activated, now rebooting.
SISPM1040-384-LRT-C#
```

## 16. No Commands

### **no**

Negate a command or set its defaults in Exec mode, Interface mode, or Interface Config mode.

#### **Syntax**

```

no debug interrupt-monitor source <source>

no debug ipv6 nd

no debug misc busydeadlock

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 (Exec mode)**

<b>debug</b>	Debugging functions.
<b>port-security</b>	Port security (psec limit).
<b>ptp</b>	Misc non persistent 1588 settings.
<b>terminal</b>	Set terminal line parameters.
interrupt-monitor	Print out of reception of the selected interrupt source.
ipv6	IPv6 configuration commands
trace	line trace
shutdown	Reopen one or more ports whose limit is exceeded and shut down.
Interface	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 1/1-12
size	Set history buffer size
source	The selected interrupt source.
<uint>	The possible values are enum vtss_interrupt_source_t values found in file board/interrupt_api.h
hunt	
<cr>	

**EXAMPLE 1: no commands in Exec mode:**

```
SISPM1040-384-LRT-C# no ptp 3 wireless mode interface GigabitEthernet 1/5
Wireless mode not available for ptp instance 3, port 5
SISPM1040-384-LRT-C# no debug trace hunt
SISPM1040-384-LRT-C#
```

**Parameters (Config mode)**

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

**EXAMPLE 2: no commands in Config mode:**

```
SISPM1040-384-LRT-C(config)# no banner motd
SISPM1040-384-LRT-C(config)# no debug mep ?
<uint> The MEP instance number.
SISPM1040-384-LRT-C(config)# no debug mep 2 ?
dm Delay Measurement.
test Test Generation.
volatile The MEP instance is change to volatile.
SISPM1040-384-LRT-C(config)# no debug mep 2 volatile ?
```

```

<cr>
SISPM1040-384-LRT-C(config)# no debug mep 2 volatile
Error: VTSS_RC_OK
SISPM1040-384-LRT-C(config)#

```

#### Parameters (Interface Config mode)

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 3: no commands in Interface Config mode:

```

SISPM1040-384-LRT-C(config-if)# no shutdown
SISPM1040-384-LRT-C(config-if)# no excessive-restart
SISPM1040-384-LRT-C(config-if)#

```

## 17. Ping Commands

### *ping*

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
<word1-255>	ICMP destination address
repeat	Specify repeat count
<Count : 1-60>	1-60; Default is 5
size	Specify datagram size
<Size : 2-1452>	2-1452; Default is 56 (excluding MAC, IP and ICMP headers)
interval	Specify repeat interval
<Seconds : 0-30>	0-30; Default is 0
ipv6	IPv6 (ICMPv6) echo
<ipv6_addr>	ICMPv6 destination address
<1-60>	1-60; Default is 5
<2-1452>	2-1452; Default is 56 (excluding MAC, IP and ICMP headers)
<0-30>	0-30; Default is 0
interface	Select an interface to configure
vlan	VLAN Interface
<vlan_id>	VLAN identifier(s): VID

#### EXAMPLE

```
SISPM1040-384-LRT-C# ping ip 192.168.1.77 interval 2 repeat 2 size 2
PING server 192.168.1.77, 2 bytes of data.
10 bytes from 192.168.1.77: icmp_seq=0, time<10ms
10 bytes from 192.168.1.77: icmp_seq=1, time=20ms
Sent 2 packets, received 2 OK, 0 bad
SISPM1040-384-LRT-C#
```

**Ping Messages:**

\*\*\* Name lookup failure: Timeout for 33

\*\*\* Failed to resolve ip address for: 33

## 18. PTP Commands

### *ptp*

Configure non-persistent IEEE 1588 settings in Exec mode. You can also configure PTP in Config mode.

#### Syntax

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

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

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

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

#### 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 eCos 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 picco seconds)
<0-1000000>	Incremental wireless transmission delay pr. byte (in picco seconds)
interface	Interface parameter
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port

#### EXAMPLE

```
SISPM1040-384-LRT-C# ptp 0 wireless mode interface GigabitEthernet 1/2-6
Wireless mode not available for ptp instance 0, port 2
;;;;;;;;;;
Wireless mode not available for ptp instance 0, port 6
SISPM1040-384-LRT-C# ptp 0 local-clock ratio 500000
SISPM1040-384-LRT-C# ptp 0 local-clock update
SISPM1040-384-LRT-C#
```

## 19. Reload Commands

### *reload*

Reload system.

#### Syntax

```
reload {{{ warm } [ sid <usid> ] } | { defaults [ keep-ip ] } }
```

#### Parameters

<b>defaults</b>	Reload defaults without rebooting.
<b>warm</b>	Reload warm (CPU restart only).
<b>keep-ip</b>	Attempt to keep existing VLAN1 IP setup.
<b>&lt;cr&gt;</b>	

#### EXAMPLE

```
SISPM1040-384-LRT-C# reload?  
reload    Reload system.  
SISPM1040-384-LRT-C# reload defaults ?  
keep-ip   Attempt to keep VLAN1 IP setup.  
<cr>  
SISPM1040-384-LRT-C# reload defaults keep-ip  
% Reloading defaults, attempting to keep IP address. Please stand by.  
SISPM1040-384-LRT-C#
```

## 20. Send Commands

### *send*

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
0	Send a message to a specific line
vty	Virtual terminal
<0~15>	Send a message to multiple lines
<LINE>	Message to be sent to lines, in 128 char's

#### EXAMPLE

```
SISPM1040-384-LRT-C# send * okthen
Enter TEXT message. End with the character 'o'.
okthen
-----
*** Message from line 1:
kthen
-----
SISPM1040-384-LRT-C#
```

## 21. Show Commands

### *show*

Display running system information.

**Table : Show Commands**

<b>Command</b>	<b>Function</b>
<b>aaa</b>	Authentication, Authorization and Accounting methods
<b>access</b>	Access management
<b>access-list</b>	Access list
<b>aggregation</b>	Aggregation port configuration
<b>always-on-poe</b>	Show Always On PoE Status
<b>clock</b>	Configure time-of-day clock
<b>command-history-log</b>	Command History List
<b>dms</b>	Display DMS configuration
<b>dot1x</b>	IEEE Standard for port-based Network Access Control
<b>eps</b>	Ethernet Protection Switching
<b>erps</b>	Ethernet Ring Protection Switching
<b>evc</b>	Ethernet Virtual Connections
<b>event</b>	Show trap event configuration
<b>format</b>	Display format of Date, Time, and PortDesc
<b>green-ethernet</b>	Green ethernet (Power reduction)
<b>history</b>	Display the session command history
<b>interface</b>	Interface status and configuration
<b>ip</b>	Internet Protocol
<b>ipmc</b>	IPv4/IPv6 multicast configuration
<b>ipv6</b>	IPv6 configuration commands
<b>lACP</b>	LACP configuration/status
<b>line</b>	TTY line information
<b>link-oam</b>	Link OAM configuration
<b>lldp</b>	Display LLDP neighbors information.
<b>logging</b>	System logging message

---

<b>loop-protect</b>	Loop protection configuration
<b>mac</b>	Mac Address Table information
<b>map-api-key</b>	show Google Maps API key configuration
<b>mep</b>	Maintenance Entity Point
<b>monitor</b>	Monitoring different system events
<b>mrp</b>	Show MRP Status
<b>mvr</b>	Multicast VLAN Registration configuration
<b>ntp</b>	Configure NTP
<b>platform</b>	Platform configuration
<b>poe</b>	Power Over Ethernet.
<b>port-security</b>	Port Security status - Port Security is a module with no direct configuration.
<b>privilege</b>	Display command privilege
<b>process</b>	process
<b>ptp</b>	Precision time Protocol (1588)
<b>pvlan</b>	PVLAN configuration
<b>qos</b>	Quality of Service
<b>radius-server</b>	RADIUS configuration
<b>rapid-ring</b>	Display Rapid Ring configurations
<b>rmon</b>	RMON statistics
<b>running-config</b>	Show running system information
<b>sflow</b>	Statistics flow.
<b>smtp</b>	Show email information
<b>snmp</b>	Display SNMP configurations
<b>spanning-tree</b>	STP Bridge
<b>switchport</b>	Display switching mode characteristics
<b>system</b>	system
<b>tacacs-server</b>	TACACS+ configuration
<b>terminal</b>	Display terminal configuration parameters
<b>udld</b>	Uni Directional Link Detection (UDLD) configuration, statistics and status
<b>upnp</b>	Display UPnP configurations
<b>user-privilege</b>	Users privilege configuration
<b>users</b>	Display information about terminal lines

<b>version</b>	System hardware and software status
<b>vlan</b>	VLAN status
<b>voice</b>	Voice appliance attributes
<b>web</b>	Web

**aaa**

Display Login methods.

**SYNTAX**

```
show aaa [ | {begin | exclude | include } <LINE>]
```

**Parameters**

	Output modifiers
<b>begin</b>	Begin with the line that matches
<b>exclude</b>	Exclude lines that match
<b>include</b>	Include lines that match
<b>&lt;LINE&gt;</b>	String to match output lines

**EXAMPLE**

```
SISPM1040-384-LRT-C# 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 : tacacs, commands 15 enabled, config-commands enabled, fallback disabled
  telnet  : no, commands disabled, fallback disabled
  ssh     : no, commands disabled, fallback disabled
  http    : no, commands disabled, fallback disabled
  https   : no, commands disabled, fallback disabled
Accounting :
  console : tacacs, commands 15 enabled, exec enabled
  telnet  : no, commands disabled, exec disabled
  ssh     : no, commands disabled, exec disabled
  http    : no, commands disabled, exec disabled
  https   : no, commands disabled, exec disabled
SISPM1040-384-LRT-C#
```

**access**

Display Access management.

**SYNTAX**

**show** access management [ statistics | <access\_id\_list> ]

**Parameters**

**management**                    Access management configuration

**statistics**                    Statistics data

<AccessidList : 1~16> ID of access management entry

**EXAMPLE**

```
SISPM1040-384-LRT-C# 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
-----
SISPM1040-384-LRT-C# 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
SISPM1040-384-LRT-C#
```

**access-list**

Display Access list configurations.

**SYNTAX**

```
show access-list [ interface [ * | Gigabitethernet <PORT_LIST> ] ] [ rate-limiter [ <RateLimiterList : 1~16> ] ] [ ace statistics
[ <AceId : 1~256> ] ]
```

```
show access-list ace-status [ static ] [ loop-protect ] [ dhcp ] [ upnp ] [ arp-inspection ] [ mep ] [ ipmc ] [ ip-source-guard ]
[ ip-mgmt ] [ conflicts ]
```

**Parameters**

interface	Select an interface to configure
*	All Switches or All Ports
Gigabitethernet	1 Gigabit Ethernet Port
<port_type_list>	Port list in 1/1-8
rate-limiter	Rate limiter
< RateLimiterList : 1~16>	Rate limiter ID
ace	Access list entry
statistics	Traffic statistics
<AceId : 1~256>	ACE ID
ace-status	The local ACEs status
static	The ACEs that are configured by users manually
loop-protect	The ACEs that are configured by Loop Protect module
dhcp	The ACEs that are configured by DHCP module
upnp	The ACEs that are configured by UPnP module
arp-inspection	The ACEs that are configured by ARP Inspection module
mep	The ACEs that are configured by MEP module
ipmc	The ACEs that are configured by IPMC module
ip-source-guard	The ACEs that are configured by IP Source Guard module
ip-mgmt	The ACEs that are configured by IP Management module
conflicts	The conflicts ACEs that does not applied to the hardware due to hardware limitations
	Output modifiers
begin	Begin with the line that matches
exclude	Exclude lines that match

---

include	Include lines that match
<LINE>	String to match output lines

**EXAMPLE**

```
SISPM1040-384-LRT-C# show access-list ace statistics rate-limiter
```

```
Switch access-list ace number: 0
```

```
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
SISPM1040-384-LRT-C#
```

## **aggregation**

Display Aggregation port configuration.

### **SYNTAX**

```
show aggregation [ mode ] [ | {begin | exclude | include } <LINE>]
```

### **Parameters**

<b>mode</b>	Traffic distribution mode
<b> </b>	Output modifiers
<b>begin</b>	Begin with the line that matches
<b>exclude</b>	Exclude lines that match
<b>include</b>	Include lines that match
<b>&lt;LINE&gt;</b>	String to match output lines

### **EXAMPLE**

```
SISPM1040-384-LRT-C# show aggregation Mode
Aggregation Mode:

SMAC : Enabled
DMAC : Disabled
IP   : Enabled
Port : Enabled
SISPM1040-384-LRT-C#
```

## **always-on-poe**

Show Always On PoE Status.

### **SYNTAX**

```
show { non-stop-poe | always-on-poe }
```

### **Parameters**

<b> </b>	Output modifiers
<b>&lt;cr&gt;</b>	

### **EXAMPLE**

```
SISPM1040-384-LRT-C# show always-on-poe
Always On PoE Status : Enable
SISPM1040-384-LRT-C#
```

**clock**

Display time-of-day clock configuration.

**SYNTAX**

**show** clock [detail]

**Parameters**

**detail**                    Display detailed information

**EXAMPLE**

```
SISPM1040-384-LRT-C# show clock
System Time      : 2011-01-01T00:56:20+00:00

SISPM1040-384-LRT-C# show clock detail
System Time      : 2011-01-01T00:56:26+00:00

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

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

## **command-history-log**

Display Command History List Status. Use the show history command to display the actual command history.

### **SYNTAX**

```
show command-history-log <cr>
```

### **EXAMPLE**

```
SISPM1040-384-LRT-C# show command-history-log ?
  status      Enable/Disable to Save Command Histry to Flash
SISPM1040-384-LRT-C# show command-history-log status ?
  |           Output modifiers
  <cr>
SISPM1040-384-LRT-C# show command-history-log status
The status of termal for Command History Feature : Enable
SISPM1040-384-LRT-C# show history
con t
do show version b
do show version
end
show poe status
show poe status interface GigabitEthernet 1/4
show poe status interface GigabitEthernet 1/1
con t
command-history-log
do show c
exit
show command-history-log status
show command-history-log
show command-history-log status
show history
SISPM1040-384-LRT-C#
```

**dms**

Display DMS configuration. Device Management System (DMS) provides advanced tools necessary for complete management of all connected network elements.

**SYNTAX**

```
show dms <cr>
```

**EXAMPLE**

```
SISPM1040-384-LRT-C# show dms
DMS Controller Capability : On
Discovery : Arp->On, UPNP->On, NBNS->On, LLDP->On, Onvif->On, Bonjour->On
DMS total device: 2

===== DMS Entry Information Start =====
(001),MAC(00-c0-f2-49-45-81),PA_MAC(00-00-00-00-00-00),port(0),p_port(0),C_IP(19
2.168.90.52),C_sub(255.255.255.0),C_gw(192.168.90.1),http_port(80),IP1(192.168.9
0.52),IP2(169.254.103.50),IP1_U(3),UM(0),vid(1),prio(99),manufacturers( SISPM104
0-384-LRT-C),d_name(SISPM1040-384-LRT-C),type(1001)(12),status(1),PoE(0),group(0
)(0),app_fw(0)(0)(0)(0),time(156303)

(002),MAC(00-08-e3-ff-fc-28),PA_MAC(00-c0-f2-4c-43-a2),port(32),p_port(0),up_lin
k_MAC(00-00-00-00-00-00),up_link_port(0),C_IP(192.168.90.1),C_sub(0.0.0.0),C_gw(
0.0.0.0),http_port(80),IP1(192.168.90.1),IP2(169.254.212.71),IP1_U(2),UM(0),vid(
1),prio(99),manufacturers( ),d_name(),auth(/),type(2012)(0),status(1)(0)(0),PoE(
NoN),account(),pwd(),media(),profile(),strim(),info/auth(0/0),group(0)(0)(1),app
_fw(0)(0)(0)(0),ver(),time(156299)

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

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

===== DMS Grouping Information end =====
SISPM1040-384-LRT-C#
```

**dot1x**

Display status / statistics for IEEE Standard for port-based Network Access Control.

**SYNTAX**

```
show dot1x statistics { eapol | radius | all } [ interface <port_type> <port_type_list> ] [ {begin | exclude | include } <LINE>]
```

```
show dot1x status [ interface ( <port_type> [ <port_type_list> ] ) ] [ brief ] [ {begin | exclude | include } <LINE>]
```

**Parameters**

statistics	Shows statistics for either eapol or radius.
all	Show all dot1x statistics
eapol	Show EAPOL statistics
radius	Show Backend Server statistics
<port_type >	GigabitEthernet
<port_type_list>	Port list in 1/1-8 for GigabitEthernet
Status	Shows dot1x status, such as admin state, port state and last source.
brief	Show status in a brief format
interface	Interface
*	All Switches or All Ports
Gigabitethernet	1 Gigabit Ethernet Port
<port_type_list>	Port list in 1/1-8 for Gigabitethernet

**EXAMPLE 1**

```
SISPM1040-384-LRT-C# show dot1x statistics eapol
```

Interface	Rx Total	Tx Total	Rx RespId	Tx ReqId	Rx Resp	Tx Req	Rx Start	Rx Logoff	Rx Error
GigabitEthernet 1/1	0	0	0	0	0	0	0	0	0
GigabitEthernet 1/2	0	0	0	0	0	0	0	0	0
GigabitEthernet 1/3	0	0	0	0	0	0	0	0	0
GigabitEthernet 1/4	0	0	0	0	0	0	0	0	0
GigabitEthernet 1/5	0	0	0	0	0	0	0	0	0
GigabitEthernet 1/6	0	0	0	0	0	0	0	0	0
GigabitEthernet 1/7	0	0	0	0	0	0	0	0	0
GigabitEthernet 1/8	0	0	0	0	0	0	0	0	0

**EXAMPLE 2**

```
SISPM1040-384-LRT-C# show dot1x status brief
```

Inf	Admin	Port	State	Last Src	Last ID	QOS	VLAN	Guest
Gi 1/1	Auth	Disabled	-	-	-	-	-	-
Gi 1/2	Auth	Disabled	-	-	-	-	-	-
Gi 1/3	Auth	Disabled	-	-	-	-	-	-
Gi 1/4	Auth	Disabled	-	-	-	-	-	-
Gi 1/5	Auth	Disabled	-	-	-	-	-	-
Gi 1/6	Auth	Disabled	-	-	-	-	-	-
Gi 1/7	Auth	Disabled	-	-	-	-	-	-
Gi 1/8	Auth	Disabled	-	-	-	-	-	-
Gi 1/9	Auth	Disabled	-	-	-	-	-	-

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

## eps

Show Ethernet Protection Switching.

### SYNTAX

```
show eps <range_list> detail | <cr>
```

### Parameters

| Output modifiers

<range\_list> The range of EPS instances.

detail Show detailed state including configuration information.

<cr>

### EXAMPLE 1

```
SISPM1040-384-LRT-C# show eps
```

```
EPS state is:
```

Inst	State	Wstate	Pstate	TxAps r b	RxAps r b	FopPm	FopCm
1	Disable	Ok	Ok	NR 0 0	NR 0 0	False	False
2	Disable	Ok	Ok	NR 0 0	NR 0 0	False	False

SISPM1040-384-LRT-C#

## erps

## Show Ethernet Ring Protection Switching.

### SYNTAX

```
show erps <1~64> <detail> <statistics> <cr>
```

### Parameters

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

### EXAMPLE 1

```
SISPM1040-384-LRT-C# show erps <tab>
1~64      detail      statistics |          <cr>
SISPM1040-384-LRT-C# show erps
% No ERPS groups configured.
SISPM1040-384-LRT-C#
```

### EXAMPLE 2

```
SISPM1040-384-LRT-C# 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 Maj 2 Rev Gi 1/1      U B Gi 1/2      U U - - - -    PEND Y N
2 S-I 2 Rev Gi 1/2      U B -           U U 1 - - -    PEND Y N
3 S-I 2 Rev Gi 1/7      U B -           U U 1 - - -    PEND Y N
SISPM1040-384-LRT-C#
```

**evc****Show Ethernet Virtual Connections.****SYNTAX**

```
show evc <1-256> <all> <ece> <statistics> < |> <cr>
```

**Parameters**

	Output modifiers
<1-256>	EVC identifier
all	Process all EVCs
ece	EVC Control Entry
statistics	Statistic counters
<cr>	

**EXAMPLE**

```
SISPM1040-384-LRT-C# show evc
```

```
EVC ID  Status
-----  -
1       Active
2       Active
3       Active
```

```
ECE ID  Status
-----  -
1       Active
```

```
SISPM1040-384-LRT-C# show evc ece
```

```
ECE ID  Status
-----  -
1       Active
2       Active
3       Active
```

```
SISPM1040-384-LRT-C#
```

```
SISPM1040-384-LRT-C# show evc statistics
```

```
Interface GigabitEthernet 1/1, Class 0 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 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
```

**event**

Display trap event configuration at the device level or at the port level.

**SYNTAX**

```
show event
```

**Parameters**

```
port <cr>
```

**EXAMPLE 1**

```
SISPM1040-384-LRT-C# 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
```

**EXAMPLE 2**

```
SISPM1040-384-LRT-C# 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
-- more --, next page: Space, continue: g, quit: ^C

```

### **format**

Display the current format of Date, Time, and PortDesc.

#### **SYNTAX**

**show** format

#### **Parameters**

**show** format <cr>

#### **EXAMPLE**

```

SISPM1040-362-LRT# show format
formatDateTime : disable
dateTime       : yyyy-mm-dd
timeFormat     : 24 hour
formatPortDesc : disable
SISPM1040-362-LRT#

```

**green-ethernet**

Display Green ethernet (Power reduction) configuration.

**SYNTAX**

```
show green-ethernet [ interface <port_type> <port_type_list> ]
show green-ethernet eee [ interface <port_type> <port_type_list> ]
show green-ethernet energy-detect [ interface <port_type> <port_type_list> ]
show green-ethernet short-reach [ interface <port_type> <port_type_list> ]
```

**Parameters**

**eee** Shows green ethernet EEE status for a specific port or ports.

**energy-detect** Shows green ethernet energy-detect status for a specific port or ports.

**interface** Shows green ethernet status for a specific port or ports.

**short-reach** Shows green ethernet short-reach status for a specific

**interface**

**\*** All Switches or All ports

**<port\_type >** GigabitEthernet or

**<port\_type\_list>** Port list in 1/1-8 for Gigabitethernet

**EXAMPLE 1**

```
SISPM1040-384-LRT-C# show green-ethernet eee
Interface          Lnk  EEE Capable  EEE Enabled  LP EEE Capable  EEE In Power Save
-----
GigabitEthernet 1/1  No   Yes         No           No           No
GigabitEthernet 1/2  Yes  Yes         No           No           No
GigabitEthernet 1/3  No   Yes         No           No           No
GigabitEthernet 1/4  No   Yes         No           No           No
GigabitEthernet 1/5  No   Yes         No           No           No
GigabitEthernet 1/6  No   Yes         No           No           No
GigabitEthernet 1/7  No   Yes         No           No           No
GigabitEthernet 1/8  No   Yes         No           No           No
GigabitEthernet 1/9  No   No          N/A          N/A          N/A
SISPM1040-384-LRT-C# show green short-reach
Interface          Lnk  Short-Reach
-----
GigabitEthernet 1/1  No   No
```

```

GigabitEthernet 1/2    Yes No
GigabitEthernet 1/3    No  No
GigabitEthernet 1/4    No  No
GigabitEthernet 1/5    No  No
GigabitEthernet 1/6    No  No
GigabitEthernet 1/7    No  No
GigabitEthernet 1/8    No  No
GigabitEthernet 1/9    No  N/A
GigabitEthernet 1/10   No  N/A
GigabitEthernet 1/11   No  N/A
GigabitEthernet 1/12   No  N/A
SISPM1040-384-LRT-C#

```

**EXAMPLE 2**

```

SISPM1040-384-LRT-C# show green-ethernet
Interface          Lnk Energy-detect Short-Reach  EEE Capable  EEE Enabled  LP EEE Capable
EEE In Power Save
-----
-----
GigabitEthernet 1/1    No No          No          Yes          No No          No
GigabitEthernet 1/2    Yes No          Yes         Yes          Yes No          No
GigabitEthernet 1/3    No Yes         No          Yes          Yes No          No
GigabitEthernet 1/4    No No          No          Yes          Yes No          No
GigabitEthernet 1/5    No No          No          Yes          No No          No
GigabitEthernet 1/6    No No          No          Yes          No No          No
-- more --, next page: Space, continue: g, quit: ^C

```

## history

Display the session command history.

### SYNTAX

```
show history [ | {begin | exclude | include } <LINE>]
```

### Parameters

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

### EXAMPLE

```
SISPM1040-384-LRT-C# show history
no ptp 1 wireless mode interface *
ping ip 33 interval 22 repeat 33 size 444
ping ip bob
reload defaults keep-ip
send vty OK then
send * okthen
show aaa
show access management
show access management statistics
show access-list ace statistics rate-limiter
show aggregation Mode
show aggregation
show clock
show clock detail
show dot1x statistics radius
show dot1x statistics
show dot1x statistics eapol
show dot1x status brief
show green-ethernet eee
show green short-reach
show history
SISPM1040-384-LRT-C#
```

## interface

Display Interface status and configuration.

### SYNTAX

```

show interface <port_type> <port_type_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

*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
vlan	VLAN status
<v_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
veriphy	Run cable diagnostics and show result.
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

```

vlan          VLAN status
<vlan_list>  VLAN list

```

**EXAMPLE 1**

```

SISPM1040-384-LRT-C# show interface GigabitEthernet 1/1-3 capabilities
GigabitEthernet 1/1 Capabilities:
  Tx Central          Mon1      Mon2      Mon3
Port Wavelength  Bit Rate  Temperature  Vcc  (Bias)  (Tx PWR)  (Rx PWR)
-----
Model:           SISPM1040-384-LRT-C
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
-- more --, next page: Space, continue: g, quit: ^C

```

**EXAMPLE 2:** Note: the `show interface vlan` command displays VLAN 4096 and 4097, which are reserved for specific features such as DMS. The Web UI does not display these VLANs.

```

SISPM1040-384-LRT-C# show interface vlan
VLAN1
  LINK: 00-40-c7-12-12-d8 Mtu:1500 <UP BROADCAST RUNNING MULTICAST>
  IPv4: 169.254.198.14/16 169.254.255.255
  IPv4: 192.168.1.77/24 192.168.1.255
  IPv6: fe80::240:c7ff:fe12:12d8/64 <UP RUNNING>
VLAN4096
  LINK: 00-40-c7-12-12-d8 Mtu:1500 <BROADCAST MULTICAST>
VLAN4097

```

```
LINK: 00-40-c7-12-12-d8 Mtu:1500 <BROADCAST MULTICAST>  
SISPM1040-384-LRT-C#
```

## ip

Display Internet Protocol parameters.

### 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

<b>arp</b>	Address Resolution Protocol
<b>dhcp</b>	Dynamic Host Configuration Protocol
<b>domain</b>	Default domain name
<b>gateway</b>	Gateway address binding interface
<b>http</b>	Hypertext Transfer Protocol
<b>igmp</b>	Internet Group Management Protocol
<b>interface</b>	IP interface status and configuration
<b>link-local</b>	Link-Local address binding interface
<b>name-server</b>	Domain Name System
<b>route</b>	Display the current IP routing table
<b>source</b>	source command
<b>ssh</b>	Secure Shell
<b>statistics</b>	Traffic statistics
<b>telnet</b>	TELNET
<b>verify</b>	verify command
<b>inspection</b>	ARP inspection
<b>interface</b>	arp inspection entry interface config
<b>&lt;port_type&gt;</b>	Gigabitethernet
<b>&lt;port_type_list&gt;</b>	Port list in 1/1-8 for Gigabitethernet
<b>vlan</b>	VLAN configuration
<b>&lt;vlan_list&gt;</b>	Select a VLAN id to configure
<b>entry</b>	arp inspection entries
<b>dhcp-snooping</b>	learn from dhcp snooping
<b>static</b>	setting from static entries
<b>relay</b>	DHCP relay agent configuration

<b>snooping</b>	DHCP snooping
<b>pool</b>	DHCP pools information
<b>server</b>	HTTP web server
<b>secure</b>	Secure
<b>status</b>	Status
<b>igmp</b>	Internet Group Management Protocol
<b>snooping</b>	Snooping IGMP
<b>vlan</b>	Search by VLAN
<b>&lt;vlan_list&gt;</b>	VLAN identifier(s): VID
<b>group-database</b>	Multicast group database from IGMP
<b>sfm-information</b>	Including source filter multicast information from IGMP
<b>detail</b>	Detail running information/statistics of IGMP snooping
<b>mrouter</b>	Multicast router port status in IGMP
<b>detail</b>	Detail running information/statistics of IGMP snooping
<b>brief</b>	Brief IP interface status
<b>binding</b>	ip source binding
<b>dhcp-snooping</b>	learn from dhcp snooping
<b>system</b>	IPv4 system traffic
<b>icmp</b>	IPv4 ICMP traffic
<b>icmp-msg</b>	IPv4 ICMP traffic for designated message type
<b>&lt;0~255&gt;</b>	ICMP message type ranges from 0 to 255
<b>source</b>	verify source

**EXAMPLE 1**

```
SISPM1040-384-LRT-C# show ip statistics system
IPv4 statistics:
  Rcvd: 38948 total in 4181660 bytes
        20170 local destination, 0 forwarding
        0 header error, 66 address error, 0 unknown protocol
        0 no route, 0 truncated, 66 discarded
  Sent: 30420 total in 3806070 bytes
        19666 generated, 0 forwarded
        4 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: 8024 received in 391956 bytes
      7960 sent in 385928 bytes
Bcast: 8024 received, 7960 sent
SISPM1040-384-LRT-C# show ip domain
Current domain name is not configured.
SISPM1040-384-LRT-C#

SISPM1040-362-LRT# show ip telnet
Switch TELNET server port is 23
```

**EXAMPLE 2**

```

SISPM1040-362-LRT# show ip interface brief
Vlan Address          Method  Status
-----
  1 192.168.1.77/24    Manual  UP
SISPM1040-362-LRT# show ip route
0.0.0.0/0 via 192.168.1.254 <UP GATEWAY HW_RT>
127.0.0.0/8 via 127.0.0.1 <UP>
127.0.0.1/32 via 127.0.0.1 <UP HOST>
169.254.0.0/16 via VLAN1 <UP HW_RT>
192.168.1.0/24 via VLAN1 <UP HW_RT>
224.0.0.0/4 via 127.0.0.1 <UP>
SISPM1040-362-LRT# show ip arp
192.168.1.77 via VLAN1:00-40-c7-12-12-63 Permanent
192.168.1.99 via VLAN1:00-1b-11-b2-6d-4b
192.168.1.254 (Incomplete)
SISPM1040-384-LRT-C# show ip ssh
Switch SSH is enabled
Switch SSH port is 22
Switch scp is disabled
SISPM1040-384-LRT-C#
SISPM1040-362-LRT# show ip http
Switch HTTP web server port is 80
SISPM1040-362-LRT#

```

**EXAMPLE 3**

```

SISPM1040-384-LRT-C# show ip ssh key
ECDSA:
Public key portion is:
 521 ecdsa-sha2-nistp521 AAAAE2VjZHNhLXNoYTItbmlzdHA1MjEAAAABImlzdHA1MjEAAACFBAC
u5gfgqCVLlz3IsQVTsnb75Bgmyw6vDmdznurjiaWhLtpXfyJhSGlkn59IkYPTzDoSkBsV+g2LmJsxiMeE
50zGb2wGoswGFaEfRURlXuiI+T7Bj8N7fjhaAUQ57WvaCiEW4jDUEwLKykU1Eb9Lw2wnwte1WYWGw1aJ
VFqnQHHj2v4gB8Q==
ECDSA: md5 78:cb:e7:59:41:f1:30:19:40:07:5f:1d:af:62:27:ab
SISPM1040-384-LRT-C#

```

**EXAMPLE 5**

```
SISPM1040-362-LRT# show ip dhcp server
DHCP server is globally enabled.
  Enabled VLANs are 1-2, 4.
  DHCP server per port is enabled.

SISPM1040-362-LRT# show ip dhcp pool

Pool Name: DHCP_Per_Port
-----

Type is network
IP is 192.168.1.0
Subnet mask is 255.255.255.0
Subnet broadcast address is -
Lease time is 1 days 0 hours 0 minutes
Default router is 192.168.1.254
Domain name is -
DNS server is 8.8.8.8
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 identifier is -
Hardware address is -
-- more --, next page: Space, continue: g, quit: ^C
SISPM1040-362-LRT# show ip dhcp excluded-address

      Low Address      High Address
      -----
01  192.168.1.7      192.168.1.254

SISPM1040-362-LRT#
```

**EXAMPLE 6** show ip http server:

```
SISPM1040-384-LRT-C# show ip http
Switch HTTP web server is enabled
Switch HTTP web server port is 80

SISPM1040-384-LRT-C# 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
SISPM1040-384-LRT-C#
```

**EXAMPLE 7** show ip gateway interface and show ip link-local interface:

```
SISPM1040-362-LRT# show ip gateway interface
Gateway Address binding interface: 1
SISPM1040-362-LRT# show ip link-local interface
Link-Local Address binding interface: 1
SISPM1040-362-LRT#
```

**EXAMPLE 8** show ip dhcp relay config:

```
SISPM1040-362-LRT# show ip dhcp relay
Switch DHCP relay mode is enabled
Switch DHCP relay server address is 0.0.0.0
Switch DHCP relay information option is enabled
Switch DHCP relay information policy is keep
SISPM1040-362-LRT#
```

**ipmc**

Display IPv4/IPv6 multicast configuration.

**SYNTAX**

```
show ipmc profile [ <profile_name> ] [ detail ]
```

```
show ipmc range [ <entry_name> ]
```

**Parameters**

<b>profile</b>	IPMC profile configuration
<b>range</b>	A range of IPv4/IPv6 multicast addresses for the profile
<b>&lt;ProfileName : word16&gt;</b>	Profile name in 16 characters
<b>detail</b>	Detail information of a profile
<b>&lt;EntryName : word16&gt;</b>	Range entry name in 16 characters
<b> </b>	Output modifiers
<b>begin</b>	Begin with the line that matches
<b>exclude</b>	Exclude lines that match
<b>include</b>	Include lines that match
<b>&lt;LINE&gt;</b>	String to match output lines

**EXAMPLE**

```
SISPM1040-384-LRT-C# show ipmc profile
IPMC Profile is currently disabled, please enable profile to start filtering.
Profile: ipro-1 (In VER-INI Mode)
Description:
SISPM1040-384-LRT-C# show ipmc range ?
|          Output modifiers
<word16>  Range entry name in 16 char's
<cr>
SISPM1040-384-LRT-C#
```

**ipv6**

Display IPv6 configuration parameters.

**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**

<b>dhcp-client</b>	Manage DHCPv6 client service
<b>interface</b>	Select an interface to configure
<b>vlan</b>	VLAN of IPv6 interface
<b>&lt;vlan_list&gt;</b>	IPv6 interface VLAN list
<b>brief</b>	Brief summary of IPv6 status and configuration
<b>statistics</b>	Traffic statistics
<b>mld</b>	Multicast Listener Discovery
<b>snooping</b>	Snooping MLD
<b>vlan</b>	Search by VLAN
<b>&lt;vlan_list&gt;</b>	VLAN identifier(s): VID
<b>group-database</b>	Multicast group database from MLD
<b>interface</b>	Search by port
<b>&lt;port_type&gt;</b>	Gigabitethernet
<b>*</b>	All Switches or All ports
<b>Gigabitethernet</b>	1 Gigabit Ethernet Port
<b>&lt;port_type_list&gt;</b>	Port list in 1/1-8 for Gigabitethernet
<b>sfm-information</b>	Including source filter multicast information from MLD
<b>detail</b>	Detail running information/statistics of MLD snooping
<b>mrouter</b>	Multicast router port status in MLD
<b>neighbor</b>	IPv6 neighbors

<b>route</b>	IPv6 routes
<b>statistics</b>	Traffic statistics
<b>system</b>	IPv6 system traffic
<b>icmp</b>	IPv6 ICMP traffic
<b>icmp-msg</b>	IPv6 ICMP traffic for designated message type

<Type : 0~255> ICMP message type ranges from 0 to 255

**EXAMPLE 1**

```
SISPM1040-384-LRT-C# 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
SISPM1040-384-LRT-C#
```

**EXAMPLE 2**

```
SISPM1040-362-LRT# show ipv6 dhcp-client
% No DHCPv6 client interface
SISPM1040-362-LRT# show ipv6 neighbor
fe80::2c0:f2ff:fe49:3d4f via VLAN1: 00-c0-f2-49-3d-4f Permanent/REACHABLE
SISPM1040-362-LRT# show ipv6 route
::1/128 via ::1 <UP HOST>
SISPM1040-362-LRT# show ipv6 mld snooping
MLD Snooping is disabled to stop snooping MLD control plane.
SISPM1040-362-LRT#
```

***lACP***

Display LACP configuration and status.

### SYNTAX

```
show lacp on-air
```

```
show lacp { internal | statistics | system-id | neighbor }
```

### Parameters

**internal** Internal LACP configuration

**neighbour** Neighbour LACP status

**on-air** LACP On Air configuration

**statistics** Internal LACP statistics

**system-id** LACP system id

### EXAMPLE

```
SISPM1040-384-LRT-C# 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
Gi 1/11             disabled  Auto Active Fast      32768
Gi 1/12             disabled  Auto Active Fast      32768
SISPM1040-362-LRT# show lacp system-id
System Priority: 32768
SISPM1040-362-LRT#
```

### line

Display TTY line information.

### SYNTAX

```
show line [ alive ] [ [ {begin | exclude | include } <LINE> ] ]
```

**Parameters**

<b>alive</b>	Display information about alive lines
<b>begin</b>	Begin with the line that matches
<b>exclude</b>	Exclude lines that match
<b>include</b>	Include lines that match
<b>&lt;LINE&gt;</b>	String to match output lines

**EXAMPLE**

```
SISPM1040-384-LRT-C# 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 19 min 12 sec.
Idle time is 0 day 0 hour 0 min 0 sec.

SISPM1040-384-LRT-C#
```

***link-oam***

Display Link OAM configuration.

**SYNTAX**

**show link-oam** Link OAM configuration

**Parameters**

	Output modifiers
<b>interface</b>	Interface status and configuration
<b>link-monitor</b>	Display link-monitor status parameters
<b>statistics</b>	Display statistics parameters
<b>status</b>	Display local and remote node status parameters
<cr>	

**EXAMPLE**

```
SISPM1040-362-LRT# show link-oam
```

Interface		Control	Mode	Status
GigabitEthernet	1/1	enabled	passive	non operational
GigabitEthernet	1/2	enabled	active	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

```
SISPM1040-362-LRT# show link-oam link-monitor
```

```
GigabitEthernet 1/1
```

```
-----
Sequence number :                               0
Symbol period error event Timestamp:           0
Symbol period error event window:              0
Symbol period error event threshold:           0
Symbol period errors:                          0
Total symbol period errors:                    0
Total symbol period error events:              0

Frame error event Timestamp:                   0
Frame error event window:                     0
Frame error event threshold:                   0
Frame errors:                                  0
Total frame errors:                            0
Total frame error events:                     0
```

```

Frame period error event Timestamp:          0
Frame period error event window:            0
Frame period error event threshold:         0
Frame period errors:                         0
SISPM1040-362-LRT# show link-oam status

GigabitEthernet 1/1
-----
Admin state:                               Enabled
PDU permission:                            Receive only
Discovery state:                           Passive 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:                                       00-40-c7       -----
PDU revision:                             0              -----
-- more --, next page: Space, continue: g, quit: ^C

```

```
SISPM1040-362-LRT# show link-oam statistics

GigabitEthernet 1/1
-----
PDU stats
-----
Information PDU TX:           0
Information PDU RX:           0
Variable request PDU RX:     0
Variable request PDU TX:     0
Variable response PDU RX:    0
Variable response PDU TX:    0
Loopback PDU RX:             0
Loopback PDU TX:             0
Link Unique event notification PDU TX:  0
Link Unique event notification PDU RX:  0
Link Duplicate event notification PDU TX: 0
Link Duplicate event notification PDU RX: 0
Org Specific PDU RX:         0
Org Specific PDU TX:         0
Unsupported PDU RX:         0
Unsupported PDU TX:         0
Link Fault PDU TX:          0
-- more --, next page: Space, continue: g, quit: ^C
```

**lldp**

Display LLDP and LLDP-MED 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 [ <0~31> ] [ | {begin | exclude | include } <LINE> ]
show lldp med remote-device [ interface <port_type> <port_type_list> ] [ | {begin | exclude | include } <LINE> ]
show lldp neighbors [ interface <port_type> <port_type_list> ] [ | {begin | exclude | include } <LINE> ]
show lldp statistics [ interface <port_type> <port_type_list> ] [ | {begin | exclude | include } <LINE> ]
```

**Parameters**

<b>eee</b>	Display LLDP local and neighbor EEE information.
<b>interface</b>	Interface to display.
<b>med</b>	Display LLDP-MED neighbors information.
<b>neighbors</b>	Display LLDP neighbors information.
<b>statistics</b>	Display LLDP statistics information.
<b>media-vlan-policy</b>	Display media vlan policies.
<b>remote-device</b>	Display remote device LLDP-MED neighbors information.
<b>&lt;0~31&gt;</b>	List of policies.
<b>Interface</b>	
<b>&lt;port_type &gt;</b>	GigabitEthernet
<b>*</b>	All Switches or All ports
<b>Gigabitethernet</b>	1 Gigabit Ethernet Port
<b>&lt;port_type_list&gt;</b>	Port list in 1/1-8 for Gigabitethernet
<b> </b>	Output modifiers
<b>begin</b>	Begin with the line that matches
<b>exclude</b>	Exclude lines that match
<b>include</b>	Include lines that match
<b>&lt;LINE&gt;</b>	String to match output lines

**EXAMPLE**

```
SISPM1040-384-LRT-C# show lldp neighbors
Local Interface      : GigabitEthernet 1/6
```

```

Chassis ID       : AC-CC-8E-AD-F8-2A
Port ID         : AC-CC-8E-AD-F8-2A
Port Description  : eth0
System Name      : axis-acc8eadf82a
System Description : AXIS M3106-LVE Mk II Network Camera 8.30.1.1
System Capabilities : Bridge(-), WLAN Access Point(-), Router(-), Station Only(+)
Management Address : 192.168.0.90 (IPv4)
PoE Type        :
PoE Source      :
PoE Power       :
PoE Priority     :

Local Interface  : GigabitEthernet 1/7
Chassis ID      : 00-C0-F2-49-20-1C
Port ID         : 10
Port Description : GigabitEthernet 1/10
System Name     : SISPM1040-384-LRT-C
System Description : Managed Hardened PoE+ Switch, (8) 10/100/1000Base-T PoE+ Ports + (4)
100/1000Base-X SFP
System Capabilities : Bridge(+)
-- more --, next page: Space, continue: g, quit: ^C
SISPM1040-384-LRT-C # show lldp med media-vlan-policy
Policy Id  Application Type      Tag      Vlan ID  L2 Priority  DSCP
0          Voice                Tagged   1        0           0
1          Video Conferencing   Tagged   1        0           0
SISPM1040-384-LRT-C # show lldp med remote-device
Local Interface  : GigabitEthernet 1/1
Device Type      : Endpoint Class I
Capabilities     : LLDP-MED Capabilities
SISPM1040-384-LRT-C#
SISPM1040-362-LRT# show lldp eee
No LLDP entries found
SISPM1040-384-LRT-C # show lldp interface *
LLDP Configuration
-----
TX Interval : 20

```

TX Hold : 2

TX Delay : 1

TX Reinit : 1

LLDP Port Configuration, Ena : Enabled, Dis : Disabled

-----

Port Addr	TX/RX Mode	CDP Aware	Port Descr	Sys Name	Sys Descr	Sys Capa	Mgmt
--------------	------------	-----------	------------	----------	-----------	----------	------

-----

1	TX/RX	Dis	Ena	Ena	Ena	Ena	Ena
2	TX/RX	Dis	Ena	Ena	Ena	Ena	Ena

SISPM1040-384-LRT-C #

SISPM1040-362-LRT# show lldp statistics

LLDP global counters

Neighbor entries was last changed at 2010-12-31T23:59:59+00:00 (62730 secs. ago ).

Total Neighbors Entries Added 0.  
 Total Neighbors Entries Deleted 0.  
 Total Neighbors Entries Dropped 0.  
 Total Neighbors Entries Aged Out 0.

LLDP local counters

Interface	Rx Frames	Tx Frames	Rx Errors	Rx Discards	Rx TLV Errors	Rx TLV Unknown	Rx TLV Organiz.	Aged
GigabitEthernet 1/1	0	0	0	0	0	0	0	0
GigabitEthernet 1/2	0	2093	0	0	0	0	0	0
GigabitEthernet 1/3	0	0	0	0	0	0	0	0

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

## logging

Display Syslog information.

### 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
	Output modifiers
alert	Severity 1: Action must be taken immediately
crit	Severity 2: Critical conditions
debug	Severity 7: Debug-level messages
emerg	Severity 0: System is unusable
error	Severity 3: Error conditions
flash	Logging message on Flash
info	Severity 6: Informational messages
notice	Severity 5: Normal but significant condition
warning	Severity 4: Warning conditions
category	Category of logging message
level	Severity level
application	Application category
debug	Debug category
system	System category
	Output modifiers
level	Severity level
<cr>	

### EXAMPLE

```
SISPM1040-384-LRT-C# show logging info
```

```
Switch logging host mode is enabled
Switch logging host address is 192.168.1.77
Switch logging host port is 514
```

```
Number of entries on Switch 1:
```

```
Emerg      : 0
Alert      : 0
Crit       : 0
Error      : 0
Warning    : 20
Notice     : 0
Info       : 72
Debug      : 0
All        : 92
```

ID	Level	Time	Message	iPush	Status
1	Info	2020-03-02T15:26:43+04:06	SYS-FIRMWARE: New firmware active: SISPM		
2	Info	2020-03-02T15:26:52+04:06	MRP: Domain 1, 'Ring Open' appear		
7	Info	2020-03-02T15:26:53+04:06	topologyChange		
8	Info	2020-03-02T15:26:53+04:06	topologyChange		
9	Info	2020-03-02T15:26:53+04:06	topologyChange		
10	Info	2020-03-02T15:26:53+04:06	topologyChange		
11	Info	2020-03-02T15:26:53+04:06	Password of user 'admin' was changed		
13	Info	2020-03-02T15:26:53+04:06	topologyChange		
16	Info	2020-03-02T15:27:10+04:06	Login passed for user 'admin'		
17	Info	2020-03-02T15:27:12+04:06	topologyChange		
19	Info	2020-03-02T15:27:15+04:06	topologyChange		
21	Info	2020-03-02T15:27:18+04:06	topologyChange		
23	Info	2020-03-02T15:27:23+04:06	topologyChange		

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

#### EXAMPLE

```
SISPM1040-362-LRT# show logging 1
Switch : 1
ID      : 1
Level   : Notice
Time    : 2011-01-01T00:00:07+00:00
Message:
LINK-UPDOWN: Interface Vlan 1, changed state to down.
SISPM1040-362-LRT#
```

```

SISPM1040-384-LRT-C# show logging 1
Switch : 1
ID      : 1
Level   : Info
Time    : 2020-03-02T15:26:43+04:06
Message:
SYS-FIRMWARE: New firmware active: SISPM1040-384-LRT-C (standalone) v7.10.2465
SISPM1040-384-LRT-C#
SISPM1040-384-LRT-C# show logging flash category application level error
No entries found
SISPM1040-384-LRT-C# show logging flash category application level notice
No entries found
SISPM1040-384-LRT-C#

```

## **loop-protect**

Display Loop protection configuration.

### **SYNTAX**

```
show loop-protect [ interface <port_type> <port_type_list> ]
```

### **Parameters**

<b>interface</b>	Interface status and configuration
<b>&lt;port_type &gt;</b>	GigabitEthernet
<b>*</b>	All Switches or All ports
<b>Gigabitethernet 1</b>	Gigabit Ethernet Port
<b>&lt;port_type_list&gt;</b>	Port list in 1/1-8 for Gigabitethernet

### **EXAMPLE**

```

SISPM1040-362-LRT# show loop-protect
Loop Protection Configuration
=====
Loop Protection   : Disable
Transmission Time : 5 sec
Shutdown Time    : 180 sec
GigabitEthernet 1/1
-----
Loop protect mode is enabled.

```

```

Action is shutdown.
Transmit mode is enabled.
No loop.
The number of loops is 0.
Status is down.
GigabitEthernet 1/2
-----
Loop protect mode is enabled.
Action is shutdown.
Transmit mode is enabled.
No loop.
-- more --, next page: Space, continue: g, quit: ^C

```

## mac

Display 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

<b>address-table</b>	Mac Address Table
<b>conf</b>	User added static mac addresses
<b>static</b>	All static mac addresses
<b>aging-time</b>	Aging time
<b>learning</b>	Learn/disable/secure state
<b>count</b>	Total number of mac addresses
<b>interface</b>	Select an interface to configure
<b>&lt;port_type&gt;</b>	Gigabitethernet
<b>*</b>	All switches or All ports
<b>Gigabitethernet</b>	1 Gigabit Ethernet Port
<b>&lt;port_type_list&gt;</b>	Port list in 1/1-8
<b>address</b>	MAC address lookup
<b>&lt;mac_addr&gt;</b>	48 bit MAC address: xx:xx:xx:xx:xx:xx
<b>vlan</b>	VLAN lookup

<b>&lt;vlan_id&gt;</b>	VLAN IDs 1-4095
<b>vlan</b>	Addresses in this VLAN
<b>&lt;vlan_id&gt;</b>	VLAN IDs 1-4095
<b>interface</b>	Select an interface to configure
<b>&lt;port_type&gt;</b>	GigabitEthernet
<b>*</b>	All Switches or All ports
<b>Gigabitethernet</b>	1 Gigabit Ethernet Port
<b>&lt;port_type_list&gt;</b>	Port list in 1/1-8 for Gigabitethernet
<b> </b>	Output modifiers
<b>begin</b>	Begin with the line that matches
<b>exclude</b>	Exclude lines that match
<b>include</b>	Include lines that match
<b>&lt;LINE&gt;</b>	String to match output lines

**EXAMPLE 1**

```
SISPM1040-384-LRT-C# show mac address-table static
Type  VID  MAC Address      Ports
Static 1   00:40:c7:12:12:d8  CPU
Static 1   33:33:00:00:00:01 GigabitEthernet 1/1-12 CPU
Static 1   33:33:00:00:00:02 GigabitEthernet 1/1-12 CPU
Static 1   33:33:ff:12:12:d8 GigabitEthernet 1/1-12 CPU
SISPM1040-384-LRT-C#
```

**EXAMPLE 2**

```
SISPM1040-362-LRT# show mac address-table aging-time
MAC Age Time: 300
SISPM1040-362-LRT# show mac address-table conf
Non-volatile static:
Type  VID  MAC Address      Ports
Static 11  00:00:00:00:00:00 GigabitEthernet 1/1-8
SISPM1040-362-LRT# show mac address-table count
Port Dynamic addresses
GigabitEthernet 1/1          0
GigabitEthernet 1/2          1
GigabitEthernet 1/3          0
```

```
GigabitEthernet 1/4          0
GigabitEthernet 1/5          0
GigabitEthernet 1/6          0
GigabitEthernet 1/7          0
GigabitEthernet 1/8          0
Total learned dynamic addresses for the switch: 1
Total static addresses in table: 4
SISPM1040-362-LRT# show mac address-table learning
Port           Learning
GigabitEthernet 1/1 Auto
GigabitEthernet 1/2 Disabled
GigabitEthernet 1/3 Secure
GigabitEthernet 1/4 Secure
GigabitEthernet 1/5 Auto
GigabitEthernet 1/6 Auto
;;;;;;;;;;;;
SISPM1040-362-LRT#
```

### map-api-key

Show Google Maps API key configuration. You need a valid API key and a Google Cloud Platform billing account to access Google core product. If not, DMS Map View will not be able to load Google Maps correctly.

To get the Google Map API Key, navigate to the Google Maps directions [webpage](#) and follow the on-screen instructions.

#### SYNTAX

```
show map-api-key
```

#### Parameters

None.

#### EXAMPLE

```
SISPM1040-384-LRT-C(config)# map-api-key semaforte
SISPM1040-384-LRT-C(config)# do show map
Key   : semaforte
SISPM1040-384-LRT-C(config)#
```

**mep**

Display MEP (Maintenance Entity endPoint) information.

**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**

	Output modifiers
<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
<cr>	

**EXAMPLE 1**

```
SISPM1040-362-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 True False False True
  2  False False False False False False False False True False False True
  3  False False False False False False False False True False False True
SISPM1040-362-LRT#
```

**EXAMPLE 2**

```
SISPM1040-362-LRT# show mep 1-5

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 True False False True
  2  False False False False False False False False True False False True
  3  False False False False False False False False True False False True

SISPM1040-362-LRT# show mep ais
SISPM1040-362-LRT# show mep detail
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 True False False True
  2  False False False False False False False False True False False True
  3  False False False False False False False False True False False True

MEP Basic Configuration is:
Inst Mode Voe Vola Direct Port Dom Level Format Name
Meg id Mep id Vid Flow Eps
MAC
  1 Mep Down GigabitEthernet 1/1 Port 0 ITU ICC
ICC000MEG0000 1 0 - 0 00-40-C7-1
2-12-64
  2 Mep Down GigabitEthernet 1/1 Port 0 ITU ICC
ICC000MEG0000 1 0 - 0 00-40-C7-1
```

2-12-64

## monitor

Display monitor information on various system events.

### SYNTAX

```
show monitor session <cr>
```

### Parameters

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

### EXAMPLE

```
SISPM1040-384-LRT-C# show monitor session 1

Session 1
-----
Mode           : Disabled
Type           : Mirror
Source VLAN(s) :
CPU Port       :
SISPM1040-384-LRT-C#
SISPM1040-384-LRT-C# show monitor session remote

Session 1
-----
Mode           : Disabled
Type           : Mirror
Source VLAN(s) :
Source Ports   :
  Both         : Gi 1/2-3
Destination Ports : Gi 1/1
CPU Port       :
SISPM1040-384-LRT-C#
```

**mrp**

Show Media Redundancy Protocol Status. See section [23 MRP Pre-Requisites and Application Examples](#) on page [331](#) for more MRP information.

**SYNTAX**

```
show mrp <domainId>
show mrp <domainId> diag
show mrp <domainId> ringport [ { primary | secondary } ]
```

**Parameters**

<1-2>	Domain ID 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

**EXAMPLE**

```
SISPM1040-362-LRT# 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: 3
  VLAN ID:             100
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
```

```
SISPM1040-362-LRT# show mrp 2
```

```
Operational:
```

```
Role:          Client
Status:        Enabled
Primary Ring Port State: Forwarding
Secondary Ring Port State: Not connected
```

```
Domain:
```

```
Admin Role:    Client
Name:          Domain2
UUID:          Default
Primary Ring Port ID: 4
Secondary Ring Port ID: 5
VLAN ID:       10
```

```
Client:
```

```
Link Down Interval, ms:  20
Link Up Interval, ms:    20
Link Change Count:       4
BLOCKED state supported: Enabled
```

```
SISPM1040-362-LRT#
```

```
SISPM1040-384-LRT-C# show mrp 1 diag
```

```
Status          : 0x01(Disabled)
Error           : 0x00()
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
```

SISPM1040-384-LRT-C# show mrp 2 diag

```
Status                          : 0x01(Disabled)
Error                            : 0x00()
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
```

SISPM1040-384-LRT-C# show mrp 2 ringport

```
Primary Ring Port ID:      4
```

```
Status:                Unknown
Secondary Ring Port ID: 5
Status:                Unknown
SISPM1040-384-LRT-C# show mrp 1 ringport
Primary Ring Port ID:  2
Status:                Unknown
Secondary Ring Port ID: 3
Status:                Unknown
SISPM1040-384-LRT-C#
```

**Messages:**

*W mrp 145/mrp\_ikli\_show\_ringport#166: Warning: Show MRP Ringport: no valid configuration found for domain Id 1*

*W mrp 145/mrp\_ikli\_show\_ringport#166: Warning: Show MRP Ringport: no valid configuration found for domain Id 1*

**mvr**

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**

<b>vlan</b>	Search by VLAN
<b>&lt;vlan_list&gt;</b>	MVR multicast VLAN list
<b>name</b>	Search by MVR name
<b>&lt;word16&gt;</b>	MVR multicast VLAN name
<b>group-database</b>	Multicast group database from MVR
<b>interface</b>	Search by port
<b>&lt;port_type&gt;</b>	* or Gigabitethernet
<b>*</b>	All Switches or All ports
<b>Gigabitethernet</b>	1 Gigabit Ethernet Port
<b>&lt;port_type_list&gt;</b>	Port list in 1/1-8 for Gigabitethernet
<b>sfm-information</b>	Including Source Filter Multicast information from MVR
<b>detail</b>	Detail information/statistics of MVR group database

**EXAMPLE 1**

```
SISPM1040-384-LRT-C# show mvr
MVR is now enabled to start group registration.
Switch-1 MVR-IGMP Interface Status
IGMP MVR VLAN 100 (Name is huntski) interface is enabled.
Querier status is IDLE
RX IGMP Query:0 V1Join:0 V2Join:0 V3Join:0 V2Leave:0
TX IGMP Query:0 / (Source) Specific Query:0
Interface Channel Profile: <No Associated Profile>
Switch-1 MVR-MLD Interface Status
MLD MVR VLAN 100 (Name is huntski) interface is enabled.
Querier status is IDLE
RX MLD Query:0 V1Report:0 V2Report:0 V1Done:0
TX MLD Query:0 / (Source) Specific Query:0
Interface Channel Profile: <No Associated Profile>
SISPM1040-384-LRT-C#SISPM1040-384-LRT-C# show mvr
```

MVR is currently disabled, please enable MVR to start group registration.

SISPM1040-384-LRT-C#

## EXAMPLE 2

```
SISPM1040-362-LRT# show mvr
```

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

```
Switch-1 MVR-IGMP Interface Status
```

```
IGMP MVR VLAN 10 (Name is mcMVR1) 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 mcMVR2) 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 mcMVR1) interface is enabled.
```

```
Querier status is IDLE
```

```
RX MLD Query:0 V1Report:0 V2Report:0 V1Done:0
```

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

**Message:** SISPM1040-362-LRT# W mvr 04:37:12 63/\_mvr\_vlan\_warning\_handler#4034: Warning: Please adjust the management VLAN ports overlapped with MVR source ports!

**Meaning:** You configured MVR source ports that overlapped with Management VLAN ports.

**Recovery:** Change the MVR source ports so they do not overlap with Management VLAN ports.

**Message:** MVR is currently disabled, please enable MVR to start group registration.

**ntp**

---

**Show Network Time Protocol config.****SYNTAX**

```
show ntp status
```

**Parameters**

```
status          status
```

**EXAMPLE**

```
SISPM1040-362-LRT# show ntp status
NTP Mode : disabled
Idx  Server IP host address (a.b.c.d) or a host name string
---  -----
1    192.168.1.30
2
3
4
5
SISPM1040-362-LRT#
```

**platform**

Show platform specific information.

**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.

| Output modifiers

**id**

**instance** PHY Instance Information

**interface**

<cr>

**EXAMPLE 1**

```
SISPM1040-362-LRT# show platform debug
Platform debug command function is denied.
SISPM1040-362-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      -      -      ,No
5     Default  1G      PD      -      -      ,No
6     Default  1G      PD      -      -      ,No
7     Default  1G      PD      -      -      ,No
8     Default  1G      PD      -      -      ,No
SISPM1040-362-LRT#
```

**EXAMPLE 2**

```

SISPM1040-362-LRT# show platform phy id
Port   Channel   API Base   Phy Id     Phy Rev.
-----
1      6           0 (1g)    7420      3
2      7           0 (1g)    7420      3
2      7           0 (1g)    7420      3
4      5           0 (1g)    7420      3
5      2           0 (1g)    7420      3
6      3           0 (1g)    7420      3
7      0           0 (1g)    0         0
8      0           0 (1g)    0         0

SISPM1040-362-LRT# show platform phy instance
Next Restart    : Cool
Previous Restart: Cool
Current API Version : 1
Previous API Version: 1
Phy Instance Restart Source:1G
Phy Instance Restart Port:0
Current Phy Start Instance:none

SISPM1040-362-LRT# show platform phy interface GigabitEthernet 1/2
Port  API Inst  WAN/LAN/1G Mode   Duplex  Speed  Link
-----
2     Default  1G             PD      -      -      ,Yes

SISPM1040-362-LRT#

```

**poe**

Show PoE configuration parameters.

**SYNTAX**

```
show poe { auto-check | auto-power-reset } [ interface ( <port_type> [ <v_port_type_list> ] ) ]
```

```
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> ] ) ]
```

**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	Display PoE scheduling profile
reboot	Display 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

**EXAMPLE 1**

```
SISPM1040-384-LRT-C# show poe status interface GigabitEthernet 1/1
Interface          PD Class  Port Status          Pwr
Req Pwr Alloc Power  Current  Priority
                                Used
[W] Used[W]  Used[W] Used[mA]
-----
-----
GigabitEthernet 1/1  3        PoE turned ON      40
  40      3.0   65      Low
Total Power Request :  40.0 [W]
Total Power Alloctaed : 40.0 [W]
```



```

2      Enabled  Disable                Low      30.0
3      Enabled  Disable                Low      30.0
4      Enabled  Disable                Low      30.0

```

GigabitEthernet 1/5 does not have PoE support

GigabitEthernet 1/6 does not have PoE support

GigabitEthernet 1/7 does not have PoE support

GigabitEthernet 1/8 does not have PoE support

SISPM1040-362-LRT#

#### EXAMPLE 4

SISPM1040-384-LRT-C# show poe config

Primary Power Supply [W] : 240

Port	Mode	Schedule	Priority	Max. Power [W]
1	Enabled	Disable	Critical	40.0
2	Enabled	Profile 1	High	40.0
3	Enabled	Disable	High	40.0
4	Enabled	Disable	Low	40.0
5	Enabled	Disable	Low	40.0
6	Enabled	Disable	Low	40.0
7	Enabled	Disable	Low	40.0
8	Enabled	Disable	Low	40.0

GigabitEthernet 1/9 does not have PoE support

GigabitEthernet 1/10 does not have PoE support

GigabitEthernet 1/11 does not have PoE support

GigabitEthernet 1/12 does not have PoE support

SISPM1040-384-LRT-C#

#### EXAMPLE 5

SISPM1040-362-LRT# show poe reboot

PoE Reset Mode: Disable

PoE Reset Entry:

Week Day	Reset Time
-----	-----
HH : MM	
Monday	- -

```

Tuesday      - -
Wednesday   - -
Thursday     - -
Friday       - -
Saturday     - -
Sunday       - -

```

**EXAMPLE 6**

```

SISPM1040-362-LRT# show poe status
Interface          PD Class  Port Status          Pwr
Req Pwr Alloc Power  Current  Priority
[W] Used[W]  Used[W] Used[mA]
-----
-----
GigabitEthernet 1/1  -          No PD detected          0
  0      0.0    0      Low
GigabitEthernet 1/2  -          No PD detected          0
  0      0.0    0      High
GigabitEthernet 1/3  -          No PD detected          0
  0      0.0    0      Low
GigabitEthernet 1/4  -          No PD detected          0
  0      0.0    0      Low
GigabitEthernet 1/5 does not have PoE support
GigabitEthernet 1/6 does not have PoE support
GigabitEthernet 1/7 does not have PoE support
GigabitEthernet 1/8 does not have PoE support
Total Power Request :  0.0 [W]
Total Power Alloctaed : 0.0 [W]
Total Power Used :    0.0 [W]
Total Current Used :  0 [mA]
SISPM1040-362-LRT#

```

**Messages:**

```

SISPM1040-384-LRT-C# E link_oam 20:07:36 85/eth_link_oam_mgmt_port_mib_retrieval_oper_set#635: Error: Unable to retrieve
the mode of the port(1/98)

```

**port-security**

Show port security config. 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.

**Interface**

**<port\_type >** GigabitEthernet

**\*** All Switches or All ports

**Gigabitethernet 1** Gigabit Ethernet Port

**<port\_type\_list>** Port list in 1/1-8 for Gigabitethernet

**EXAMPLE 1**

```
SISPM1040-384-LRT-C# show port-security port interface GigabitEthernet 1/3
GigabitEthernet 1/3
-----
MAC Address      VID  State      Added                               Age/Hold Time
-----
00-09-18-4e-20-e9  1  Forwarding  2011-01-05T21:03:41+00:00          N/A

SISPM1040-384-LRT-C#
```

**EXAMPLE 2**

```
SISPM1040-384-LRT-C# show port-security port
GigabitEthernet 1/1
-----
MAC Address      VID  State      Added                               Age/Hold Time
-----
5c-ff-35-dc-0a-c1  1  Forwarding  2011-01-05T21:03:37+00:00          N/A

GigabitEthernet 1/2
-----
MAC Address      VID  State      Added                               Age/Hold Time
-----
```

```
<none>
```

```
GigabitEthernet 1/3
```

```
-----
```

MAC Address	VID	State	Added	Age/Hold Time
00-09-18-4e-20-e9	1	Forwarding	2011-01-05T21:03:39+00:00	N/A

```
GigabitEthernet 1/4
```

```
-----
```

MAC Address	VID	State	Added	Age/Hold Time
-------------	-----	-------	-------	---------------

```
SISPM1040-384-LRT-C#
```

### EXAMPLE 3

```
SISPM1040-384-LRT-C# show port-security switch
```

```
Users:
```

```
L = Limit Control
```

```
8 = 802.1X
```

```
V = Voice VLAN
```

Interface	Users	State	MAC Cnt
GigabitEthernet 1/1	L--	Ready	1
GigabitEthernet 1/2	L--	Ready	0
GigabitEthernet 1/3	L--	Ready	1
GigabitEthernet 1/4	L--	Ready	0
GigabitEthernet 1/5	L--	Ready	0
GigabitEthernet 1/6	L--	Ready	1
GigabitEthernet 1/7	L--	Ready	0
GigabitEthernet 1/8	L--	Ready	0
GigabitEthernet 1/9	L--	Ready	0
GigabitEthernet 1/10	L--	Ready	0
GigabitEthernet 1/11	L--	Ready	0
GigabitEthernet 1/12	L--	Ready	0

```
SISPM1040-384-LRT-C#
```

## ***privilege***

Display command privilege level.

### **SYNTAX**

```
show privilege [ | {begin | exclude | include } <LINE>
```

### **Parameters**

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

### **EXAMPLE**

```
SISPM1040-384-LRT-C# show privilege

-----
| The order is as the input sequence and |
| the last one has the highest priority. |
-----

privilege percepxion level 10 line

SISPM1040-384-LRT-C#
```

**process**

Show process list, detail, and load.

**SYNTAX**

**show** process list [ detail ]

**show** process list <output modifiers> <detail> <cr>

**show** process load

**Parameters**

list	list
load	load
	Output modifiers
detail	optionally show thread call stack
<cr>	

**EXAMPLE**

```
SISPM1040-384-LRT-C# show process list detail
Version      : SISPM1040-384-LRT-C (standalone) v7.20.0206
Build Date   : 2024-04-27T16:26:55+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  0x850b7b90 4096 1744
#0  0x807d7a34
#1  0x807d9468
#2  0x807ed050
#3  0x807d54bc
#4  0x807d5490
  4 Sleep      7        7 Network support            N/A      N/A  0x850b58d0 8192 2440
#0  0x807d7a34
#1  0x807d9160
#2  0x807eb160
-- more --, next page: Space, continue: g, quit: ^C
SISPM1040-384-LRT-C# show process load
Load average(100ms, 1s, 10s):  6%,  9%,  7%
SISPM1040-384-LRT-C#
```

**ptp**

Display PTP status.

**SYNTAX**

```
show ptp <clk> <current> <default> <filter> <foreign-master-record> <ho> <local-clock> <master-table-unicast>
<parent> <port-ds> <port-state> <servo> <servo-extended> <slave> <slave-cfg> <slave-table-unicast> <time-property>
<uni> <wireless>
```

**Parameters**

<0-3>	Show various PTP data for a PTP instance.
ext	Show the 1PPS and External clock output configuration 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**

```
SISPM1040-362-LRT# show Ptp ext
PTP External One PPS mode: Disable, Clock output enabled: False, frequency : 1,
Preferred adj method: LTC frequency
SISPM1040-362-LRT# show Ptp system-time
System clock synch mode (No System clock to PTP Sync)
SISPM1040-362-LRT# show ptp 0 clk
Option threshold 'P'constant
-----
free      1000      2
SISPM1040-362-LRT# show ptp 0 local-clock
PTP Time (0)      : 2011-01-03T02:14:57+00:00 846,633,740
Clock Adjustment method: VCX0/(VC)OCXO option
SISPM1040-362-LRT# show ptp ext
PTP External One PPS mode: Out/Input, Clock output enabled: False, frequency : 1
, Preferred adj method: Oscillator
SISPM1040-362-LRT# show ptp system-time
System clock synch mode (No System clock to PTP Sync)
SISPM1040-362-LRT#
```

***pvlan***

Display PVLAN status. In a private VLAN, PVLANs provide layer 2 isolation between ports within the same broadcast domain. Isolated ports configured as part of a PVLAN cannot communicate with each other. Member ports of a PVLAN can communicate with each other.

**SYNTAX**

```
show pvlan<range_list>
```

```
show pvlan isolation [ interface ( <port_type> [ <plist> ] ) ]
```

**Parameters**

**<range\_list>** PVLAN id to show configuration for

**isolation** show isolation configuration

**<port\_type >** GigabitEthernet

**\*** All Switches or All ports

**Gigabitethernet 1** Gigabit Ethernet Port

**<port\_type\_list>** Port list in 1/1-8 for Gigabitethernet

**EXAMPLE**

```
SISPM1040-384-LRT-C# show pvlan isolation interface GigabitEthernet 1/1-2
Port                               Isolation
-----
GigabitEthernet 1/1                Disabled
GigabitEthernet 1/2                Disabled
SISPM1040-384-LRT-C#

SISPM1040-362-LRT# show pvlan 1-4
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
2         GigabitEthernet 1/2, GigabitEthernet 1/3, GigabitEthernet 1/4, GigabitEthernet 1/5
3         GigabitEthernet 1/5
4         GigabitEthernet 1/2, GigabitEthernet 1/7, GigabitEthernet 1/8
SISPM1040-362-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>
```

```
SISPM1040-362-LRT#
```

```
SISPM1040-362-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      Enabled
GigabitEthernet 1/7      Enabled
GigabitEthernet 1/8      Disabled
SISPM1040-362-LRT#
```

**qos**

Display Quality of Service parameters.

**SYNTAX**

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

**Parameters**

<b>interface</b>	Interface
<b>&lt;port_type &gt;</b>	GigabitEthernet
<b>*</b>	All switches or All ports
<b>Gigabitethernet</b>	1 Gigabit Ethernet Port
<b>&lt;port_type_list&gt;</b>	Port list in 1/1-8 for Gigabitethernet
<b>maps</b>	Global QoS Maps/Tables
<b>qce</b>	QoS Control Entry
<b>storm</b>	Storm policer
<b>wred</b>	Weighted Random Early Discard
<b>cos-dscp</b>	Map for cos to dscp
<b>dscp-classify</b>	Map for dscp classify enable
<b>dscp-cos</b>	Map for dscp to cos
<b>dscp-egress-translation</b>	Map for dscp egress translation
<b>dscp-ingress-translation</b>	Map for dscp ingress translation
<b>&lt;Qce : 1-256&gt;</b>	QCE ID
<b> </b>	Output modifiers
<b>begin</b>	Begin with the line that matches
<b>exclude</b>	Exclude lines that match
<b>include</b>	Include lines that match
<b>&lt;LINE&gt;</b>	String to match output lines

**EXAMPLE 1**

```
SISPM1040-384-LRT-C# show qos storm
qos storm:
=====
Unicast : disabled      1 fps
Multicast: disabled    1 fps
```

```
Broadcast: disabled      1 fps
SISPM1040-384-LRT-C#
```

**EXAMPLE 2**

```
SISPM1040-384-LRT-C# show qos interface GigabitEthernet 1/3-6
```

```
interface GigabitEthernet 1/3
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
```

```
SISPM1040-384-LRT-C# show qos maps
```

```
qos map dscp-cos:
```

```
=====
```

DSCP	Trust	Cos	Dpl
0 (BE)	disabled	0	0
1	disabled	0	0
2	disabled	0	0
3	disabled	0	0

```
4      disabled 0 0
5      disabled 0 0
6      disabled 0 0
7      disabled 0 0
8 (CS1) disabled 0 0
9      disabled 0 0
10 (AF11) disabled 0 0
11     disabled 0 0
12 (AF12) disabled 0 0
12 (AF12) disabled 0 0
14 (AF13) disabled 0 0
15     disabled 0 0
16 (CS2) disabled 0 0
17     disabled 0 0
```

```
SISPM1040-384-LRT-C# show qos qce
```

```
No qce entries found!
```

```
SISPM1040-384-LRT-C# show qos storm
```

```
qos storm:
```

```
=====
```

```
Unicast : disabled      1 fps
```

```
Multicast: disabled     1 fps
```

```
Broadcast: disabled     1 fps
```

```
SISPM1040-384-LRT-C#
```

## *radius-server*

Display RADIUS server parameters. The statistics map closely to those specified in IETF [RFC4668](#) - RADIUS Authentication Client MIB.

### SYNTAX

```
show radius-server [ statistics ]
```

### Parameters

**statistics**                    RADIUS statistics

### EXAMPLE 1

```
SISPM1040-362-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          : 4a751b402ab922f5740cf6c2d3812fbf7a191300e701
c81405568a1fe5faad3e7928992991f233e30799a600bc1e30c0ee233d2f351086e134ecc66e7651
148cec5c955b4f036d2768285f0db0416c37bcdff11865770ba65e3d3d73dbc1873cb4f19f0591737
adf497934a6d496e3ca8
Global RADIUS Server Attribute 4  : 192.168.1.30
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        : b638808f17d1ffa17bde99bad65d4cc556187056a3d9294203b9963eedae463f9
d0bfaf8b75e0d52287b93533a78cff5d14c070ea7a732e366a992e83e6c4c92
RADIUS Server #2:
  Host name   : Radrvr2
  Auth port   : 1812
  Acct port   : 1813
  Timeout     : 45 seconds
  Retransmit  : 222 times
  Key        : 83c2e917580b1a173ed21c5d656777e5e9855d20452512b52071b872d3eafc7d6
3adb7f2f537297b4de9c492f4fb9c5faaf0a921fabbb8bb863a8897ca86d8d4a0a1d9c6b239b15c
```

```
1963ec9fd266383
RADIUS Server #3:
  Host name   : radius3
  Auth port   : 1812
  Acct port   : 1813
  Timeout     : 1 seconds
  Retransmit  : 99 times
  Key         : bdabff5dbc1be5c4056ddbe190d3eaefeea52929d7c67eedc210bf334447bf5e
3d2ad5ffc086570f7b02e70e2999af7e0a0ade5e6d51c465bc3f05f3ef18efd
RADIUS Server #4:
  Host name   : radius4
  Auth port   : 1812
  Acct port   : 1813
  Timeout     : 1 seconds
  Retransmit  : 9 times
  Key         : 3c64886cdb86d395c8a9bda63bea4a7715f22ddcd97cfeb81cd7ad6187d7f6943
d2920fd96e0aab9395048a099bc5e455820ead44faa6e14cae179a974e1233
RADIUS Server #5:
  Host name   : radius5
-- more --, next page: Space, continue: g, quit: ^C
```

## EXAMPLE 2

```
SISPM1040-362-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           : 4a751b402ab922f5740cf6c2d3812fbf7a191300e701
c81405568a1fe5faad3e7928992991f233e30799a600bc1e30c0ee233d2f351086e134ecc66e7651
148cec5c955b4f036d2768285f0db0416c37bcdf11865770ba65e3d3d73dbc1873cb4f19f0591737
adf497934a6d496e3ca8
Global RADIUS Server Attribute 4   : 192.168.1.30
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       : b638808f17d1ffa17bde99bad65d4cc556187056a3d9294203b9963eedae463f9
d0bfaf8b75e0d52287b93533a78cff5d14c070ea7a732e366a992e83e6c4c92
RADIUS Server #2:
Host name  : Radrvr2
Auth port  : 1812
Acct port  : 1813
-- more --, next page: Space, continue: g, quit: ^C
```

**rapid-ring**

Display Rapid-Ring parameters.

**SYNTAX**

```
show rapid-ring <cr>
```

**Parameters**

**rapid-ring**      Display Rapid Ring configuration parameters.

**EXAMPLE**

```
SISPM1040-384-LRT-C# show rapid-ring ?
|      Output modifiers
<cr>
SISPM1040-384-LRT-C# show rapid-ring
Entry Index          : 1
Rapid Ring Role      : Failover
Rapid Ring Port 1    : 1
Rapid Ring Port 2    : 2
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 : Forwarding
Rapid Ring Port 2 State : Forwarding

Ring-to-Ring Role    : Active
Ring-to-Ring Port    : 1
Ring-to-Ring Port State : Discarding
SISPM1040-384-LRT-C#
```

**rmon**

Display RMON statistics.

**SYNTAX**

```
show rmon alarm [ <id_list> ]
show rmon event [ <id_list> ]
show rmon history [ <id_list> ]
show rmon statistics [ <id_list> ]
```

**Parameters**

<b>alarm</b>	Display the RMON alarm table
<b>event</b>	Display the RMON event table
<b>history</b>	Display the RMON history table
<b>statistics</b>	Display the RMON statistics table
<b>&lt;1~65535&gt;</b>	Alarm/Event/History/Statistics entry list

**EXAMPLE**

```
SISPM1040-362-LRT# show rmon event

Event ID :    1
-----
Description   : one
Type          : none
Community     : public
LastSent      : Never

Event ID :    2
-----
Description   : two
Type          : none
Community     : public
LastSent      : Never

SISPM1040-362-LRT#
SISPM1040-362-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
```

```
EtherHistorySampleIndex : 1
```

```
  etherHistoryIntervalStart : 1d 00:52:10(89530)
  etherHistoryDropEvents    : 0
  etherHistoryOctets        : 221880
  etherHistoryPkts          : 735
  etherHistoryBroadcastPkts : 219
  etherHistoryMulticastPkts : 420
  etherHistoryCRCAlignErrors : 0
  etherHistoryUndersizePkts : 0
  etherHistoryOversizePkts  : 0
  etherHistoryFragments     : 0
  etherHistoryJabbers       : 0
  etherHistoryCollisions    : 0
  etherHistoryUtilization   : 0
```

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

```
SISPM1040-362-LRT# show rmon statistics 1
```

```
Statistics ID : 1
```

```
-----
```

```
Data Source : .1.3.6.1.2.1.2.2.1.1.1
etherStatsDropEvents      : 0
etherStatsOctets          : 13635679
etherStatsPkts            : 58211
etherStatsBroadcastPkts   : 30145
etherStatsMulticastPkts   : 21491
etherStatsCRCAlignErrors  : 0
etherStatsUndersizePkts   : 0
etherStatsOversizePkts    : 0
etherStatsFragments       : 0
etherStatsJabbers         : 0
etherStatsCollisions      : 0
etherStatsPkts64Octets    : 35577
```

```

etherStatsPkts65to1270ctets   : 16
etherStatsPkts128to2550ctets  : 2
etherStatsPkts256to5110ctets  : 22021
etherStatsPkts512to10230ctets : 20
etherStatsPkts1024to15180ctets: 575

```

SISPM1040-362-LRT#

## running-config

Display 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

<b>all-defaults</b>	Include most/all default values
<b>feature</b>	Show configuration for specific feature
<b>interface</b>	Show specific interface(s)
<b>line</b>	Show line settings
<b>vlan</b>	VLAN

**CWORD** 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' 'web-privilege-group-level'

**<port\_type >** GigabitEthernet

**\*** All switches or All ports

**Gigabitethernet 1** Gigabit Ethernet Port

---

<b>&lt;port_type_list&gt;</b>	Port list in 1/1-8 for Gigabitethernet
<b>&lt;vlan_list&gt;</b>	List of VLAN numbers
<b>console</b>	Console
<b>vty</b>	VTY
<b>&lt;range_list&gt;</b>	List of console/VTYs

**EXAMPLE**

```
SISPM1040-362-LRT# show running-config
Building configuration...
hostname SISPM1040-362-LRT
username admin privilege 15 password encrypted e3d645728a1558750f842fff73ce5c213
8bd102f62ecaa2528bc13ae8bddace49c3fbcfa299137f28aaae540c022b4aec25aa01f3a53c248ddaf53e1acbe27c0
!
vlan 1
!
!
!
!
snmp-server host trap1
trapmode udp
 host 192.168.1.30 162 informs
 version v3 probe None
!
snmp-server host trap2
trapmode tcp
 host 192.168.1.40 162 informs
 version v3 probe None
!
snmp-server host trap3
trapmode udp
 host 192.168.1.50 162 informs
!
ip route 0.0.0.0 0.0.0.0 192.168.1.254
tzidx 0
exec-timeout autologout 0
snmp-server version v3
snmp-server contact Bob or Lee in the lab @ 7750 Washington Avenue, Minneapolis,
```

```

MN 5545 - push the # sign. , . , .
snmp-server location Eng - SVT Lab at
snmp-server community v3 1234 1.2.3.4 255.255.255.0
snmp-server user 1 engine-id 800007e5017f0000 md5 encrypted YWRtaW4xIU9L priv des encrypted
MTExMTExMTExMTExMTEx
snmp-server security-to-group model v3 name BobB group secure-3
snmp-server trap
radius-server key encrypted f246a451ded58903b3758cb9b504237cfaf4642c1abb43e44c21
3ccc1694f3dd9059b16d382eec798d37793fe706aa543c7927f8c63c71efa1cc1f0818cd381b
radius-server host RadSvr1
radius-server host RadSvr1 auth-port 50000 acct-port 4000 timeout 350 retransmit
 200 key encrypted 4acafb049c466cce2d9a20d2c94d0a7ce9266423c2f8f96a4264b76d7ce44
90892530f4afb7d5bf6bde54f1fe0f48479433ae3afb56d95323a8d9c82d397bf0a
system contact Bob or Lee in the lab @ 7750 Washington Avenue, Minneapolis, MN 5545 - push the #
sign. , . , .
system name SISPM1040-362-LRT
system location Eng - SVT Lab at
system description Managed Hardened PoE+ Switch, (4) 10/100/1000Base-T PoE+ Port
s + (2) 10/100/1000Base-T Ports + (2) 100/1000Base-X SFP Ports
!
interface GigabitEthernet 1/1
  description port1 - auto
!
interface GigabitEthernet 1/2
  description port2- -1Gfdx
!
interface GigabitEthernet 1/3
  description port3 - 100fdx - FC Off
!
interface GigabitEthernet 1/4
  description port4 - 100Mb - MaxFrSz=1518
!
interface GigabitEthernet 1/5
  description port5- 100Mb
!
interface GigabitEthernet 1/6
  description 1234567890 !@#%^&*( -<, >. ?/abcdefghijklmnopqrstuvwxyz

```

```

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

```

**sflow**

Display Statistics flow.

**SYNTAX**

```

show sflow

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

```

**Parameters**

- statistics**                    sFlow statistics.
- receiver**                    Show statistics for receiver.
- samplers**                    Show statistics for samplers.
- <range\_list>**                 runtime, see sflow\_icli\_functions.c
- <port\_type >**                 GigabitEthernet
- \***                             All switches or All ports
- Gigabitethernet**            1 Gigabit Ethernet Port
- <port\_type\_list>**            Port list in 1/1-8 for Gigabitethernet
- |**                             Output modifiers
- begin**                        Begin with the line that matches
- exclude**                     Exclude lines that match
- include**                     Include lines that match
- <LINE>**                      String to match output lines

**EXAMPLE**

```

SISPM1040-384-LRT-C# 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.
SISPM1040-384-LRT-C#
```

### **smtp**

Display SMTP (Email) configuration.

#### **SYNTAX**

```
show smtp <cr>
```

#### **Parameters**

#### **EXAMPLE**

```
SISPM1040-362-LRT# show smtp
Mail Server      : 192.168.1.30
User Name        : jeffs
Password         : *****
Sender           : sysAdmin
Return Path      : na
Email Adress 1   : jeffs@transition.com
Email Adress 2   : support@csd.com
Email Adress 3   :
Email Adress 4   :
Email Adress 5   :
Email Adress 6   :
SISPM1040-362-LRT#
```

**snmp**

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
<GroupName : word32>	Group name
v1	v1 security model
v2c	v2c security model
v3	v3 security model
any	any security model
auth	authNoPriv Security Level
noauth	noAuthNoPriv Security Level
priv	authPriv Security Level
community	Community
v3	SNMPv3
<Community : word127>	Specify community name
host	Set SNMP host's configurations
<ConfName : word32>	Name of the host configuration
system	System event group
switch	Switch event group

<b>interface</b>	Interface event group
<b>aaa</b>	AAA event group
<b>security-to-group</b>	security-to-group configuration
<b>&lt;SecurityName : word32&gt;</b>	security group name
<b>user</b>	User
<b>&lt;UserName : word32&gt;</b>	Security user name
<b>&lt;EngineId : word10-32&gt;</b>	Security Engine ID
<b>view</b>	MIB view configuration
<b>&lt;ViewName : word32&gt;</b>	MIB view name
<b>&lt;OidSubtree : word255&gt;</b>	MIB view OID
<b> </b>	Output modifiers
<b>begin</b>	Begin with the line that matches
<b>exclude</b>	Exclude lines that match
<b>include</b>	Include lines that match
<b>&lt;LINE&gt;</b>	String to match output lines

**EXAMPLE**

```
SISPM1040-384-LRT-C# show snmp info
SNMP Info:
Conf VendorName:TN, VENDOR_TN, PRODUCT:SISPM1040-384-LRT-C
EngineID: 800007e5017f000001
Using oid :1.3.6.1.4.1.868.2.80.1, length:10
SISPM1040-384-LRT-C#
SISPM1040-362-LRT# show snmp mib context
BRIDGE-MIB :
- dot1dBase (.1.3.6.1.2.1.17)
- dot1dTp (.1.3.6.1.2.1.17.4)
Dot3-OAM-MIB :
- dot3OamMIB (.1.3.6.1.2.1.158)
ENTITY-MIB :
- entityMIBObjects (.1.3.6.1.2.1.47.1)
EtherLike-MIB :
- transmission (.1.3.6.1.2.1.10)
IEEE8021-BRIDGE-MIB :
- ieee8021BridgeBasePortTable (.1.3.111.2.802.1.1.2.1.1.4)
```

```
IEEE8021-MSTP-MIB :
```

```
- ieee8021MstpMib (.1.3.111.2.802.1.1.6)
```

```
IEEE8021-PAE-MIB :
```

```
- ieee8021paeMIB (.1.0.8802.1.1.1.1)
```

```
IEEE8021-Q-BRIDGE-MIB :
```

```
- ieee8021QBridgeMib (.1.3.111.2.802.1.1.4)
```

```
IEEE8023-LAG-MIB :
```

```
- lagMIBObjects (.1.2.840.10006.300.43.1)
```

```
IF-MIB :
```

```
- ifMIB (.1.3.6.1.2.1.31)
```

```
IP-FORWARD-MIB :
```

```
SISPM1040-362-LRT# show snmp mib ifmib ifIndex
```

ifIndex	ifDescr	Interface
1	Switch 1 - Port 1	GigabitEthernet 1/1
2	Switch 1 - Port 2	GigabitEthernet 1/2
3	Switch 1 - Port 3	GigabitEthernet 1/3
4	Switch 1 - Port 4	GigabitEthernet 1/4
5	Switch 1 - Port 5	GigabitEthernet 1/5
6	Switch 1 - Port 6	GigabitEthernet 1/6
7	Switch 1 - Port 7	GigabitEthernet 1/7
8	Switch 1 - Port 8	GigabitEthernet 1/8
50001	VLAN 1	vlan 1
60001	VLAN 1	

```
SISPM1040-362-LRT#
```

**spanning-tree**

Display STP Bridge configurations.

**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**

<b>summary</b>	STP summary
<b>active</b>	STP active interfaces
<b>interface</b>	Choose port
<b>&lt;port_type&gt;</b>	Gigabitethernet
<b>*</b>	All switches or All ports
<b>Gigabitethernet</b>	1 Gigabit Ethernet Port
<b>&lt;port_type_list&gt;</b>	Port list in 1/1-8 for Gigabitethernet
<b>detailed</b>	STP statistics
<b>interface</b>	List of port type and port ID, ex, 1/1-8
<b>mst</b>	Configuration
<b>configuration</b>	STP bridge instance no (0-7, CIST=0, MST2=1...)
<b>&lt;0-7&gt;</b>	Choose port
<b>&lt;port_type &gt;</b>	GigabitEthernet
<b>*</b>	All Switches or All ports

**EXAMPLE**

```
SISPM1040-384-LRT-C# show spanning-tree
CIST Bridge STP Status
Bridge ID   : 32768.00-40-C7-12-12-D8
Root ID    : 32768.00-40-C7-12-12-D8
Root Port  : -
Root PathCost: 0
Regional Root: 32768.00-40-C7-12-12-D8
Int. PathCost: 0
Max Hops   : 20
TC Flag    : Steady
TC Count   : 0
```

```
TC Last      : -
Port         Port Role      State      Pri PathCost Edge P2P Uptime
-----
Gi 1/2      DesignatedPort Forwarding 128    20000 Yes  Yes  0d 02:09:51
```

SISPM1040-384-LRT-C#

SISPM1040-362-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

SISPM1040-362-LRT#

## switchport

Display switching mode characteristics.

### SYNTAX

```
show switchport forbidden [ { vlan <vlan_list> } | { name <name> } ]
```

### Parameters

<b>forbidden</b>	Lookup VLAN Forbidden port entry.
<b>name</b>	name - Show forbidden access for specific VLAN name.
<b>vlan</b>	vid - Show forbidden access for specific VLAN id.
<b>&lt;vlan_id&gt;</b>	VLAN id
<b>&lt;word&gt;</b>	VLAN name

### EXAMPLE

```
SISPM1040-384-LRT-C# show switchport forbidden
% No forbidden VLANs found
SISPM1040-384-LRT-C#
SISPM1040-362-LRT# show switchport forbidden
VLAN  Name                               Interfaces
-----
20    VLAN0020                               Gi 1/4
200   VLAN0200                               Gi 1/2
SISPM1040-362-LRT#
```

**system**

Display system information.

**SYNTAX**

**show system**

**Syntax**

**show system**

**show system cpu status**

**show system di-do**

**show system reboot**

**Parameters**

**cpu** CPU

**di-do** Switch DI and DO default configuration

**reboot** Switch reboot scheduling

**status** Average load

**EXAMPLE 1**

```
SISPM1040-384-LRT-C# show system
Model Name           : SISPM1040-384-LRT-C
System Description   : Managed Hardened PoE+ Switch, (8) 10/100/1000Base-T PoE+ Ports +
(4) 100/1000Base-X SFP
Location            :
Contact             :
System Name          : SISPM1040-384-LRT-C
System Date          : 2011-01-01T18:31:07+00:00
System Uptime        : 18:04:46
Bootloader Version   : v1.20
Firmware Version     : v7.20.0206 2024-04-14
PoE Firmware Version : 104-001
Hardware Version     : v1.02
Mechanical Version   : v1.01
Serial Number        : A074122BR1200130
MAC Address          : 00-c0-f2-85-54-54
Memory               : Total=44716 KBytes, Free=24408 KBytes, Max=23838 KBytes
FLASH                : 0x40000000-0x41ffffff, 512 x 0x10000 blocks
Powers status        : Normal
```

```

Powers                : PWR_1.0V:0.98V; PWR_3.3V:3.29V; PWR_2.5V:2.60V; PWR_1.8V:1.93V
Temperature status    : Normal
Temperature 1         : 45(C) ; 113(F)
Temperature 2         : 49(C) ; 120(F)
SISPM1040-384-LRT-C#

```

**EXAMPLE 2**

```
SISPM1040-384-LRT-C# show system cpu status
```

```
  Average load in 100 ms : 10%
```

```
  Average load in  1 sec : 7%
```

```
  Average load in 10 sec : 7%
```

```
SISPM1040-384-LRT-C# show system di-do
```

```
Switch DI Mode: High
```

```
Switch DO Mode: open
```

```
SISPM1040-384-LRT-C# show system reboot
```

```
Switch Reboot Mode: Disable
```

```
Switch Reboot Entry:
```

```
      Reboot Time
```

```
Week Day   HH : MM
```

```
-----
```

```
Monday     - -
```

```
Tuesday    - -
```

```
Wednesday  - -
```

```
Thursday   - -
```

```
Friday     - -
```

```
Saturday   - -
```

```
Sunday     - -
```

```
SISPM1040-384-LRT-C#
```

## ***tacacs-server***

Display current TACACS+ configuration.

### **SYNTAX**

```
show tacacs-server [ | {begin | exclude | include } <LINE>
```

#### **Parameters**

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

### **EXAMPLE**

```
SISPM1040-362-LRT# show tacacs-server
Global TACACS+ Server Timeout      : 90 seconds
Global TACACS+ Server Deadtime     : 10 minutes
Global TACACS+ Server Key          : admin
TACACS+ Server #1:
  Host name   : TacSrvr1
  Port        : 49
  Timeout     : 90 seconds
  Key         : admin
SISPM1040-362-LRT#
```

**Messages:** *No servers configured!*

## terminal

Display terminal configuration parameters.

### SYNTAX

```
show terminal [ | {begin | exclude | include } <LINE>
```

### Parameters

	Output modifiers
<b>begin</b>	Begin with the line that matches
<b>exclude</b>	Exclude lines that match
<b>include</b>	Include lines that match
<b>&lt;LINE&gt;</b>	String to match output lines

### EXAMPLE

```
SISPM1040-384-LRT-C# 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 0 hour 45 min 31 sec.
Idle time is 0 day 0 hour 0 min 0 sec.

SISPM1040-384-LRT-C#
```

## udld

Display UDLD (Uni Directional Link Detection) configurations, statistics, and status.

### SYNTAX

```
show udld <interface> < | > <cr>
```

### Parameters

	Output modifiers
interface	Choose port
<cr>	

### EXAMPLE

```
SISPM1040-362-LRT# show udld
GigabitEthernet 1/1
-----
UDLD Mode           : Normal
Admin State         : Enable
Message Time Interval(Sec): 7
Device ID(local)    : 00-40-C7-12-12-63
Device Name(local)  : SISPM1040-362-LRT
Bidirectional state : Indeterminant
No neighbor cache information stored
-----
GigabitEthernet 1/2
-----
UDLD Mode           : Aggressive
Admin State         : Enable
Message Time Interval(Sec): 7
Device ID(local)    : 00-40-C7-12-12-63
Device Name(local)  : SISPM1040-362-LRT
Bidirectional state : Indeterminant
No neighbor cache information stored
-----
GigabitEthernet 1/3
-----
UDLD Mode           : Normal
Admin State         : Enable
```

```

Message Time Interval(Sec): 7
Device ID(local)           : 00-40-C7-12-12-63
Device Name(local)        : SISPM1040-362-LRT
Bidirectional state       : Indeterminant
No neighbor cache information stored
-----
GigabitEthernet 1/4
-----
UDLD Mode                  : Normal
Admin State                : Enable
Message Time Interval(Sec): 7
Device ID(local)           : 00-40-C7-12-12-63
Device Name(local)        : SISPM1040-362-LRT
Bidirectional state       : Indeterminant
-- more --, next page: Space, continue: g, quit: ^C

```

## **upnp**

Display Universal Plug and Play configuration.

### **SYNTAX**

```
show upnp [ | {begin | exclude | include } <LINE>
```

### **Parameters**

	Output modifiers
<b>begin</b>	Begin with the line that matches
<b>exclude</b>	Exclude lines that match
<b>include</b>	Include lines that match
<b>&lt;LINE&gt;</b>	String to match output lines

### **EXAMPLE**

```

SISPM1040-362-LRT# show upnp
UPnP Mode                : enabled
UPnP TTL                  : 6
UPnP Advertising Duration : 85
SISPM1040-362-LRT#

```

**user-privilege**

Display current user's privilege level.

**SYNTAX**

**show** show user-privilege

**EXAMPLE**

```
SISPM1040-384-LRT-C# show user-privilege
username admin privilege 15 password encrypted YWRtaW4=
SISPM1040-384-LRT-C# show user-privilege
username admin privilege 15 password encrypted 5d0c30be49e17cc737291c484997bdb69
86ff38aba6e6ad4f8f9ce05a7aa5561f9225d326fa406b23948b3f59c0fc8d43fdeb29306731bd99
55ff1be93d1ad33
SISPM1040-384-LRT-C#
```

**users**

Display information about terminal lines.

**SYNTAX**

**show** users [ myself ]

**show** users myself [ | {begin | exclude | include } <LINE>

**Parameters**

	Output modifiers
myself	Display information about mine
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<LINE>	String to match output lines
<cr>	

**EXAMPLE**

```
SISPM1040-384-LRT-C# show users
Line is vty 0.
* You are at this line now.
Connection is from 192.168.1.99:65529 by Telnet.
User name is admin.
Privilege is 15.
```

```
Elapsed time is 0 day 4 hour 37 min 11 sec.
```

```
Idle time is 0 day 0 hour 0 min 0 sec.
```

## version

Display current system hardware and software status.

### SYNTAX

```
show version [ brief ]
```

### Parameters

brief

### EXAMPLE

```
SISPM1040-384-LRT-C# show version brief
Version      : SISPM1040-384-LRT-C (standalone) v7.20.0206
Build Date   : 2023-09-14T18:05:02+08:00
SISPM1040-384-LRT-C# show version

MEMORY       : Total=44716 KBytes, Free=24408 KBytes, Max=23838 KBytes
FLASH        : 0x40000000-0x41ffffff, 512 x 0x10000 blocks
MAC Address   : 00-c0-f2-85-54-54
Previous Restart : Warm

System Contact :
System Name    : SISPM1040-384-LRT-C
System Location :
System Time    : 2011-01-01T18:28:26+00:00
System Uptime  : 18:02:10

Active Image
-----
Image         : managed
Version       : SISPM1040-384-LRT-C (standalone) v7.20.0206
Date         : 2023-09-14T18:05:02+08:00

Alternate Image
-----
Image         : managed.bk
Version       : SISPM1040-384-LRT-C (standalone) v7.20.0190
Date         : 2023-08-25T10:04:36+08:00
```

## SISPM1040-384-LRT-C#

**vlan**

Display VLAN information.

**SYNTAX**

```
show vlan [ id <vlan_list> | name <name> | brief ] [ all ]
```

```
show vlan ip-subnet [ <ipv4> ]
```

```
show vlan mac [ address <mac_addr> ]
```

```
show vlan membership [ id <vlan_list> | name <name> ] [ admin | combined | erps | evc | gvrp | mep | mstp | mvr | nas  
| rmirror | vcl | voice-vlan | forbidden ]
```

```
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**

<b>id</b>	VLAN status by VLAN id
<b>&lt;vlan_list&gt;</b>	VLAN IDs 1-4095
<b>name</b>	VLAN status by VLAN name
<b>&lt;vword32&gt;</b>	A VLAN name
<b>brief</b>	VLAN summary information
<b>protocol</b>	Protocol-based VLAN status
<b>eth2</b>	Ethernet protocol based VLAN status
<b>&lt;0x600-0xffff&gt;</b>	Ether Type(Range: 0x600 - 0xFFFF)
<b>arp</b>	Ether Type is ARP
<b>ip</b>	Ether Type is IP
<b>ipx</b>	Ether Type is IPX
<b>at</b>	Ether Type is AppleTalk
<b>snap</b>	SNAP-based VLAN status
<b>&lt;0x0-0xfffff&gt;</b>	SNAP OUI (Range 0x000000 - 0FFFFFFF)
<b>rfc_1042</b>	SNAP OUI is rfc_1042
<b>snap_8021h</b>	SNAP OUI is 8021h
<b>&lt;0x0-0xffff&gt;</b>	PID (Range: 0x0 - 0xFFFF)

<b>llc</b>	LLC-based VLAN status
<b>&lt;0x0-0xff&gt;</b>	DSAP (Range: 0x00 - 0xFF)
<b>&lt;0x0-0xff&gt;</b>	SSAP (Range: 0x00 - 0xFF)
<b>admin</b>	Show the VLANs configured by administrator.
<b>all</b>	Show all VLANs configured.
<b>combined</b>	Show the VLANs configured by a combination.
<b>conflicts</b>	Show VLANs configurations that has conflicts.
<b>erps</b>	Show the VLANs configured by ERPS.
<b>gvrp</b>	Show the VLANs configured by GVRP.
<b>interface</b>	Show the VLANs configured for a specific interface(s).
<b>mep</b>	Show the VLANs configured by MEP.
<b>mstp</b>	Show the VLANs configured by MSTP.
<b>mvr</b>	Show the VLANs configured by MVR.
<b>nas</b>	Show the VLANs configured by NAS.
<b>rmirror</b>	Show the VLANs configured by Remote mirroring.
<b>vcl</b>	Show the VLANs configured by VCL.
<b>voice-vlan</b>	Show the VLANs configured by Voice VLAN.
<b>interface</b>	Show the VLANs configured for a specific interface(s).
<b>&lt;port_type &gt;</b>	GigabitEthernet
<b>Gigabitethernet</b>	1 Gigabit Ethernet Port
<b>&lt;port_type_list&gt;</b>	Port list in 1/1-8 for Gigabitethernet

**EXAMPLE**

```
SISPM1040-384-LRT-C# show vlan
```

VLAN	Name	Interfaces
1	default	Gi 1/1-12
2	VLAN0002	Gi 1/2-3
3	VLAN0003	Gi 1/2-3
4	VLAN0004	Gi 1/2-3
5	VLAN0005	Gi 1/2-3
6	VLAN0006	Gi 1/2-3
7	VLAN0007	Gi 1/2-3
8	VLAN0008	Gi 1/2-3

```

9    VLAN0009          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
14   VLAN0014          Gi 1/2-3
15   VLAN0015          Gi 1/2-3
16   VLAN0016          Gi 1/2-3
17   VLAN0017          Gi 1/2-3
18   VLAN0018          Gi 1/2-3
19   VLAN0019          Gi 1/2-3
20   VLAN0020          Gi 1/2-3

```

SISPM1040-362-LRT# show vlan brief

```

VLAN  Name                      Interfaces
-----
1    default                      Gi 1/1-8

```

SISPM1040-362-LRT# show vlan status

GigabitEthernet 1/1 :

```

-----
VLAN User  PortType      PVID  Frame Type  Ing Filter  Tx Tag      UVID  Conflicts
-----
Combined  C-Port        1     All         Enabled     None        1     No
Admin     C-Port        1     All         Enabled     None        1
NAS                                              No
GVRP                                           No
MVR                                           No
Voice VLAN                                     No
MSTP                                           No
ERPS                                           No
-- more --, next page: Space, continue: g, quit: ^C

```

## voice

Display Voice appliance attributes.

### SYNTAX

```
show voice vlan [ oui <oui> | interface ( <port_type> [ <port_list> ] ) ]
```

**Parameters**

vlan	Vlan for voice traffic
oui	OUI configuration
<oui>	OUI value
interface	Select an interface to configure
<port_type>	* or Gigabitethernet
*	All Switches or All ports
Gigabitethernet	1 Gigabit Ethernet Port
<port_type_list>	Port list in 1/1-8 for Gigabitethernet
	Output modifiers
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<LINE>	String to match output lines

**EXAMPLE**

```
SISPM1040-384-LRT-C# show voice vlan
Switch voice vlan is enabled
Switch voice vlan ID is 20
Switch voice vlan aging-time is 86400 seconds
Switch voice vlan traffic class is 7

Telephony OUI Description
-----
11-22-33      mvvlan

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 auto  
GigabitEthernet 1/2 switchport voice security is enabled  
GigabitEthernet 1/2 switchport voice discovery protocol is oui  
-- more --, next page: Space, continue: g, quit: ^C
```

**web**

Display web privilege info.

**SYNTAX**

```
show web privilege group [ <group_name> ] level
```

**Parameters**

<b>privilege</b>	Web privilege				
<b>group</b>	Web privilege group				
<b>&lt;keyword&gt;</b>	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	<b>perception</b>	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	
<b>level</b>	Web privilege group level				
<b> </b>	Output modifiers				
<b>begin</b>	Begin with the line that matches				
<b>exclude</b>	Exclude lines that match				
<b>include</b>	Include lines that match				
<b>&lt;LINE&gt;</b>	String to match output lines				

**EXAMPLE 1**

```
SISPM1040-384-LRT-C# 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
-- more --, next page: Space, continue: g, quit: ^C
SISPM1040-384-LRT-C# show web privilege group mrp level
Group Name          Privilege Level
                   CRO CRW SRO SRW
-----
MRP                  5 10  5 10
SISPM1040-384-LRT-C#
SISPM1040-384-LRT-C# show web privilege group percepxion level
Group Name          Privilege Level
                   CRO CRW SRO SRW
-----
percepxion          5 10  5 10
SISPM1040-384-LRT-C#

```

**EXAMPLE 2**

```
SISPM1040-384-LRT-C# show web privilege group percepion level
Group Name                Privilege Level
                          CRO CRW SRO SRW
-----
percepion                 5  10  5  10
SISPM1040-384-LRT-C#
```

CRO = Configuration Read Only; CRO = Configuration Read + Write

SRO = Status Read Only; SRO = Status Read + Write

## 22. Terminal Commands

### *terminal*

Set terminal line parameters. 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?'.)

### Syntax

**terminal** editing

**terminal** exec-timeout <min> [ <sec> ]

**terminal** help

**terminal** history size <history\_size>

**terminal** length <lines>

**terminal** width <width>

### Parameters

<b>editing</b>	Enable command line editing
<b>exec-timeout</b>	Set the EXEC timeout
<b>help</b>	Description of the interactive help system
<b>history</b>	Control the command history function
<b>length</b>	Set number of lines on a screen
<b>width</b>	Set width of the display terminal
<b>&lt;0-1440&gt;</b>	Timeout in minutes
<b>&lt;0-3600&gt;</b>	Timeout in seconds
<b>size</b>	Set history buffer size
<b>&lt;0-32&gt;</b>	Number of history commands, 0 means disable
<b>&lt;0 or 3-512&gt;</b>	Number of lines on screen (0 for no pausing)
<b>&lt;0 or 40-512&gt;</b>	Number of characters on a screen line (0 for unlimited width)

**EXAMPLE**

```
SISPM1040-384-LRT-C# terminal editing
SISPM1040-384-LRT-C# terminal exec-timeout 1440
SISPM1040-384-LRT-C#
```

## 23. IP Commands

### *ip*

IPv4 and IPv6 commands.

#### Syntax

```
ip dhcp retry interface vlan <vlan_id>
```

```
ipv6 dhcp-client restart [ interface vlan <v_vlan_list> ]
```

#### Parameters

<b>dhcp</b>	Dhcp commands
<b>retry</b>	Restart the DHCP query process
<b>interface</b>	Interface
<b>vlan</b>	Vlan interface
<b>&lt;vlan_id&gt;</b>	Vlan ID
<b>dhcp-client</b>	Manage DHCPv6 client service
<b>restart</b>	Restart DHCPv6 client service
<b>interface</b>	Select an interface to configure
<b>vlan</b>	VLAN of IPv6 interface
<b>&lt;vlan_list&gt;</b>	IPv6 interface VLAN list
<b>&lt;cr&gt;</b>	

#### EXAMPLE 1

```
SISPM1040-384-LRT-C# ip dhcp retry interface vlan 1
% Failed to restart DHCP client on VLAN = 1.
SISPM1040-384-LRT-C# ipv6?
  ipv6    IPv6 configuration commands
SISPM1040-384-LRT-C# ipv6 ?
  dhcp-client  Manage DHCPv6 client service
SISPM1040-384-LRT-C# ipv6 dhcp-client ?
  restart    Retart DHCPv6 client service
SISPM1040-384-LRT-C# ipv6 dhcp-client restart ?
  interface  Select an interface to configure
<cr>
SISPM1040-384-LRT-C# ipv6 dhcp-client restart
SISPM1040-384-LRT-C#
```

## 24. Traceroute Commands

### **traceroute**

Run traceroute program.

#### **SYNTAX**

```
traceroute ip <v_ip_addr> [ protocol { icmp | udp | tcp } ] [ wait <v_wait_time> ] [ ttl <v_max_ttl> ] [ nqueries <v_nqueries> ]
```

#### **Parameters**

<b>ip</b>	IP
<b>&lt;word1-255&gt;</b>	destination address
<b>nqueries</b>	Specify number of probe packets
<b>&lt;1-10&gt;</b>	1-10; Default is 3
<b>protocol</b>	Specify protocol including icmp, udp and tcp
<b>icmp</b>	icmp/udp/tcp; Default is icmp
<b>tcp</b>	Use TCP protocol
<b>udp</b>	Use UDP protocol
<b>ttl</b>	Specify max TTL
<b>wait</b>	Specify wait time
<b>&lt;1-255&gt;</b>	1-255; Default is 30
<b>&lt;1-60&gt;</b>	1-60 sec; Default is 5 sec

#### **EXAMPLE**

```
SISPM1040-384-LRT-C# traceroute ip 192.168.1.77 nqueries 2 protocol tcp ttl 10 wait 20
traceroute to 192.168.1.77 (192.168.1.77), 10 hops max, 40 byte packets
 1 192.168.90.1 (192.168.90.1) 3 ms 1 ms
 2 172.16.44.254 (172.16.44.254) 1 ms 0 ms
 3 192.168.1.77 (192.168.1.77) 1 ms 1 ms
SISPM1040-384-LRT-C#
SISPM1040-384-LRT-C# $ceroute ip 22 nqueries 4 protocol tcp ttl 15 wait 20
traceroute: unknown host 22
SISPM1040-384-LRT-C#
```

## Appendix A. DHCP Per Port

You can configure DHCP Per Port via the CLI and Web UI. The DHCP Per Port factory default mode is Disabled. See the *Web User Guide* for web UI mode operation.

The switch's DHCP server assigns IP addresses. Clients get IP addresses in sequence and the switch assigns IP addresses to on a per-port basis starting from the configured IP range. For example, if the IP address range is configured as 192.168.10.20 - 192.168.10.37 with one DHCP device connected to port 1, the client will always get IP address 192.168.10.20, then port 3 is always distributed IP address 192.168.10.22, even if port 2 is an empty port (because port 2 is always distributed IP address 192.168.10.21).

The switch does not allow a DHCP per Port pool to include the switch's address. The IP address assigned range and VLAN 1 should stay in the same subnet mask.

The configurable IP address range is allowed to configure over 18 IP addresses, but the switch always assigns one IP address per port connecting device.

When the DHCP Per Port function is enabled, the switch software will automatically create the related DHCP pool named "DHCP\_Per\_Port".

Once the DHCP Per Port function is enabled on one switch, IPv4 DHCP client at VLAN1 mode (DMS DHCP mode), DHCP server mode are all limited to be enabled at the same time (an error message displays if attempted).

If the DHCP server pool has been configured, once you enable the DHCP Per port function that DHCP server pool configuration will be overwritten.

Only for VLAN 1, clients issued DHCP packets will not be broadcast/forwarded to other ports. DHCP packets in others VLANs will be broadcast/forwarded to 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:

```
# show ip dhcp server
SISPM1040-362-LRT(config)# ip dhcp server per-port
SISPM1040-362-LRT(config)# ip dhcp server per-port vlan
(config)# no ip dhcp server per-port
```

The CLI commands to configure and show DHCP Per Port are described below.

**Command:** Show the current DHCP Server and DHCP Per Port configuration

**Syntax:** **show ip dhcp server** <cr>

**Description:** Show if DHCP server is globally enabled or disabled, if all VLANs are disabled or enabled, and if the DHCP server Per Port function is disabled or enabled.

**Example:** Display 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 { <perPortVLAN> } ]**

**Description:** Toggle the DHCP Per Port function from Disabled (default) to Enabled.

**Example:** Toggle the DHCP Per Port function and show the resulting config:

```
SISPM1040-384-LRT-C# show ip dhcp server
DHCP server is globally enabled.
  All VLANs are disabled.
  DHCP server per port is enabled.
SISPM1040-384-LRT-C# con ter
SISPM1040-384-LRT-C#(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
SISPM1040-384-LRT-C#(config)# ip dhcp server ?
  per-port          Enable DHCP server per port
SISPM1040-384-LRT-C#(config)# ip dhcp server
SISPM1040-384-LRT-C#(config)# end
SISPM1040-384-LRT-C(config)# ip dhcp server per-port
SISPM1040-384-LRT-C(config)# do show ip dhcp server
DHCP server is globally enabled.
  All VLANs are disabled.
  DHCP server per port is enabled.
SISPM1040-384-LRT-C(config)#
```

## DHCP per Port VLAN

**Command:** Configure IP DHCP Server per-port VLAN

**Syntax:** **ip dhcp server per-port vlan** <vlan id>

**Description:** The switch supports DHCP per Port VLAN (the VLAN associated with the IP interface). Only ports

in this VLAN will be able to access the IP interface. This parameter is only available for input when creating a new interface. This 'DHCP IP per Port' function lets you assign a static IP address from a DHCP pool to a switch port such that 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 typical binding method used on this and most other switches.

**Example:**

```
SISPM1040-362-LRT(config)# ip dhcp server per-port vlan 100
SISPM1040-362-LRT(config)# do show ip dhcp server
DHCP server is globally disabled.
  All VLANs are disabled.
  DHCP server per port is disabled.

SISPM1040-362-LRT(config)#
```

## Appendix B. MRP Pre-Requisites and Application Examples

You can configure Media Redundancy Protocol (MRP) parameters via the Web UI at Configuration > MRP and monitor them at Monitor > MRP, and via the CLI. See the *Web User Guide* for Web UI operation.

According to ANSI, [IEC 62439-2 Ed. 1.0 b:2010](#) is applicable to high-availability automation networks based on [ISO/IEC 8802-3](#) / [IEEE 802.3 Ethernet technology](#). It specifies a recovery protocol based on a ring topology, designed to react deterministically on a single failure of an inter-switch link or switch in the network, under the control of a dedicated Media Redundancy Manager (MRM) node.

Media Redundancy Protocol per IEC 62439-2 is an interoperable ring technology designed to allow a switch to connect onto a universal redundant high speed ring. MRP is self-healing and self-adjusting, requiring no operator interaction. MRP is based on the concept of standby connections for seamless redundancy.

### MRP Description

1. MRP operates at the MAC Layer of the Ethernet Switch.
2. The Ring Manager is called the Media Redundancy Manager (MRM).
3. Ring Clients are called Media Redundancy Clients (MRCs).
4. MRM and MRC ports support three Status Types:
  - a. *Disabled* ring ports drop all the received frames.
  - b. *Blocked* ring ports drop all the received frames except the MRP control frames.
  - c. *Forwarding* ring ports forward all the received frames.
5. Ring Reconfiguration speed is 200 ms for 50 switches on average.
6. The MRM continuously sends Watchdog Packets into the ring network to verify communication between ring points.
7. During normal operation, no packets are transmitted over the redundant link.
8. When the MRM no longer receives the Watchdog Packets it sent out, the redundant path is immediately activated, and it becomes the primary layer 2 packet path.
9. When the failed link is restored:
  - a. The MRM switches back to normal operation and the first Path becomes the primary path again.
  - b. You can configure a period of time before the MRM switches back to the primary path (to prevent the circuit from flapping if it is not stable).

## MRP Operation

**Normal operation:** the network works in the *Ring-Closed* status. In this status, one of the MRM ring ports is blocked, while the other is forwarding. Conversely, both ring ports of all MRCs are forwarding. Loops are avoided because the physical ring topology is reduced to a logical stub topology.

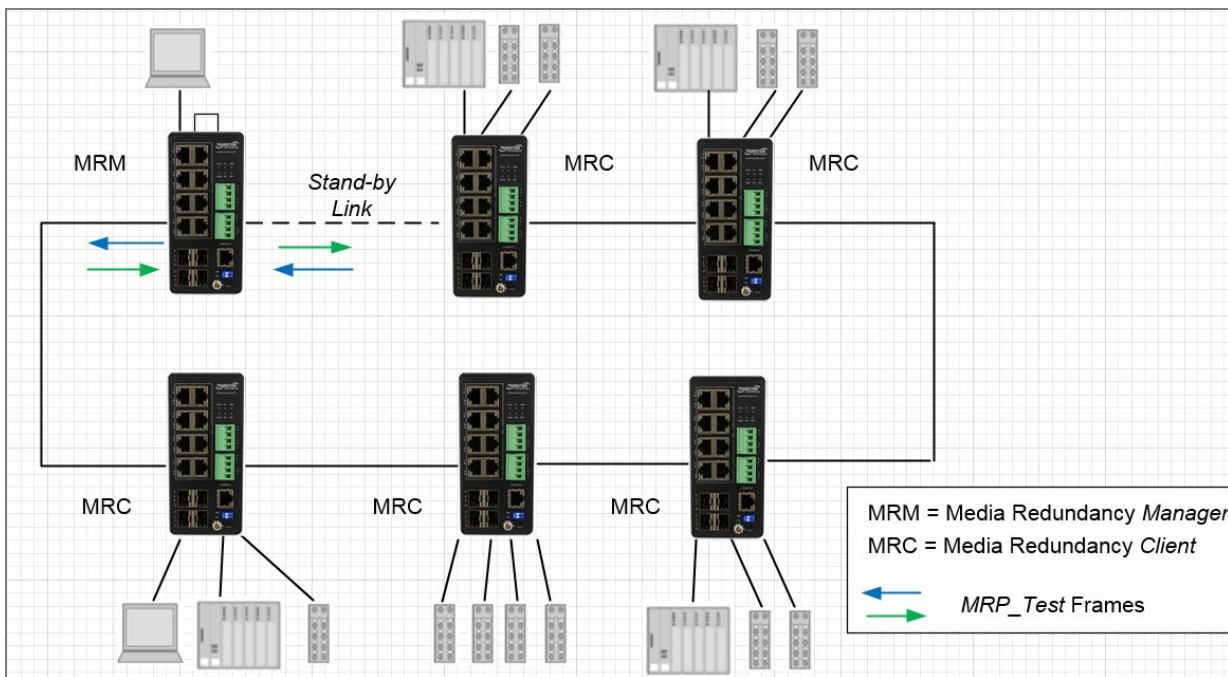
**Failure mode:** the network works in the *Ring-Open* status. For instance, in case of failure of a link connecting two MRCs, both ring ports of the MRM are forwarding. The MRCs adjacent to the failure have a blocked and a forwarding ring port; the other MRCs have both ring ports forwarding. The physical ring topology is also a logical stub topology in the Ring-Open status.

## Related Devices

MRP is implemented for SISPM1040-384-LRT-C, SISPM1040-362-LRT, and SISPM1040-582-LRT.

## MRP Sample Setup

The example below shows SISPM1040-384-LRT-C switches (one MRM and five MRCs).



**Figure: MRP Sample Setup**

## MRP Pre-Requisites (General)

The following are required to perform MRP setups.

1. Spanning Tree must be disabled with the `no spanning-tree mode` command.
2. Other Ring technologies must be disabled (G.8031 EPS, G.8032 ERPS, Rapid-Ring, Ring-To-Ring, etc.).
3. Other pre-requisites may apply to the specific examples below.

## MRP Setup (CLI Commands)

**Example 1:** Create two new MRP domains on an SISPM1040-384-LRT-C:

```
SISPM1040-384-LRT-C(config)# mrp domain new 1
SISPM1040-384-LRT-C(config)# mrp domain new 2
SISPM1040-384-LRT-C(config)#
```

**Example 2:** Show default config for newly-created MRP domains 1 and 2:

```
SISPM1040-384-LRT-C(config)# do show mrp 1
Domain:
  Admin Role:          Undefined
  Name:                Domain1
  UUID:                Default
  Primary Ring Port ID: Undefined
  Secondary Ring Port ID: Undefined
  VLAN ID:             0
SISPM1040-384-LRT-C(config)# do show mrp 2
Domain:
  Admin Role:          Undefined
  Name:                Domain2
  UUID:                Default
  Primary Ring Port ID: Undefined
  Secondary Ring Port ID: Undefined
  VLAN ID:             0
SISPM1040-384-LRT-C(config)#
```

**Example 3:** Configure MRP 1 (Manager) and MRP 2 (Client) parameters:

```

SISPM1040-384-LRT-C(config)# mrp 1 role manager
SISPM1040-384-LRT-C(config)# mrp 1 manager media-redundancy enable
SISPM1040-384-LRT-C(config)# mrp 1 manager priority 3
SISPM1040-384-LRT-C(config)# mrp 1 manager test-interval 25
SISPM1040-384-LRT-C(config)# mrp 1 manager test-monitoring 4 2
SISPM1040-384-LRT-C(config)# mrp 1 vlan 100
SISPM1040-384-LRT-C(config)# mrp 2 client blocked-state enable
SISPM1040-384-LRT-C(config)# mrp 2 client link-interval 15 30 2
SISPM1040-384-LRT-C(config)# mrp 2 ringport secondary GigabitEthernet 1/5
SISPM1040-384-LRT-C(config)# mrp 2 vlan 200
SISPM1040-384-LRT-C(config)#

```

**Example 4:** Show newly-configured MRP 1 parameters:

```

SISPM1040-384-LRT-C(config)# do show mrp 1

```

## Operational:

```

Role:                Undefined
Status:              Disabled
Ring State:          Undefined
Primary Ring Port State: Unknown
Secondary Ring Port State: Unknown

```

## Domain:

```

Admin Role:          Manager
Name:                Domain1
UUID:                Default
Primary Ring Port ID: 2
Secondary Ring Port ID: 3
VLAN ID:             100

```

## Manager:

```

Priority:             3
Topology Change Interval, ms: 10
Topology Change Repeat Count: 3
Short Test Interval, ms: 10
Default Test Interval, ms: 25
Test Monitoring Count: 4
Test Monitoring Extended Count: 2
Non-blocking MRC supported: Enabled

```

```
React On Link Change:      Enabled
Check Media Redundancy Event:  Enabled
SISPM1040-384-LRT-C(config)#
```

**Example 5:** Show newly-configured MRP 2 parameters:

```
SISPM1040-384-LRT-C(config)# do show mrp 2
Operational:
  Role:                Undefined
  Status:              Disabled
  Primary Ring Port State:  Unknown
  Secondary Ring Port State: Unknown
Domain:
  Admin Role:         Client
  Name:              Domain2
  UUID:              Default
  Primary Ring Port ID:  4
  Secondary Ring Port ID: 5
  VLAN ID:           200
Client:
  Link Down Interval, ms:  15
  Link Up Interval, ms:   30
  Link Change Count:      2
  BLOCKED state supported: Enabled
SISPM1040-384-LRT-C(config)#
```

**Messages:** *W mrp 247/mrp\_ikli\_domain\_uuid#219: Warning: MRP Domain UUID: The UUID incorrect*  
*W mrp 247/mrp\_ikli\_domain\_vlan#321: Warning: MRP Domain Vlan ID: unable to modify domain with Id 2, VLAN ID is used in other ring domain*

## Appendix C. G.8032 Major and Sub Rings Configuration

### Introduction

Ethernet Ring Protection Switching (ERPS) protocol is defined by the International Telecommunication Union - Telecommunication Standardization Sector (ITU-T) to prevent loops at Layer 2. The standard number is ITU-T G.8032 (ERPS is also called G.8032). Generally, redundant links are used on a network to provide link backup and enhance network reliability. The use of redundant links, however, may produce loops, causing broadcast storms and rendering the MAC address table unstable. These can affect the network, where the communication quality is not good enough, and communication services might be interrupted.

ERPS provides advantages over traditional ring network technologies such as STP/RSTP/MSTP and optimizes detection mechanism to provide faster convergence. For example, the ERPS-enabled switch provides 50-ms convergence for broadcast packets. See the [ERPS command](#) descriptions on pages [10](#), [44](#), and [208](#) for more G.8032 ERPS command information.

### Basic Concepts

There are some basic ERPS Ring concepts:

- **Ring Protection Link (RPL)** – Link designated by mechanism that is blocked during Idle state to prevent loop on Bridged ring.
- **RPL Owner node** – Node connected to RPL that blocks traffic on RPL during Idle state and unblocks during Protection state.
- **RPL Neighbor node** – Node connected to RPL that blocks traffic on RPL during Idle state and unblocks during Protection state (v2).
- **Link Monitoring** – Links of ring are monitored using standard ETH CC OAM messages (CFM) • **Signal Fail (SF)** – Signal Fail is declared when signal fail condition is detected.
- **No Request (NR)** – No Request is declared when there are no outstanding conditions (e.g., SF, etc.) on the node.
- **Ring APS (R-APS) Messages** – Protocol messages defined in Y.1731 and G.8032.
- **Automatic Protection Switching (APS) Channel** - Ring-wide VLAN used exclusively for transmission of OAM messages including R-APS messages.

## IP Addresses

The sample configurations below use these IP addresses:

SISPM1040-582-LRT : 192.168.1.85

SISPM1040-384-LRT-C : 192.168.1.95

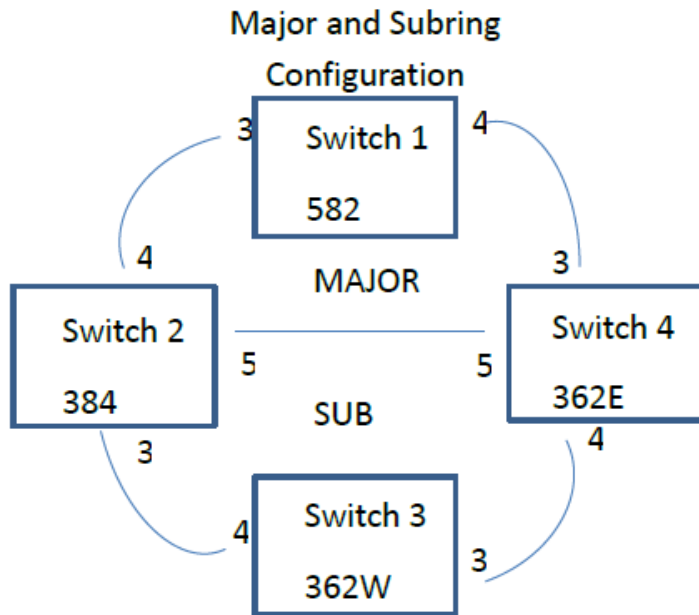
362W : 192.168.1.125

362E : 192.168.1.135

## Sample Configuration

**Major Ring and Sub Ring** : 4 Switches

**Major** : SW#1, SW#2, SW#4; **Sub** : SW#2, SW#3, SW#4



<u>VLANs</u>	<u>APS Data</u>					
10,20	5					
<u>RPL Mode</u>	<u>Major</u>	<u>Sub</u>	<u>Major</u>	<u>Sub</u>	<u>Major</u>	<u>Sub</u>
	Owner	Owner	Neighbor	Neighbor	None	None
	Switch	Switch	Switch	Switch	Switch	Switch
	#1	#3	#2	#2	#4	#4

### Switch 1 Configuration (SISPM1040-582-LRT)

VLANs	Port	Mode	Tag	VLANs
	Port 3	Trunk	Tag All	5,10
	Port 4	Trunk	Tag All	5,10

STP	Port	Mode
	Port 3	Disable
	Port 4	Disable

MEPs ID	Instance	Port	VLAN	MAC	MEP ID	Peer MAC	Peer MEP
	1	3	10	00-C0-F2-49-39-5F	1	00-40-C7-1C-C7-30	4
	2	4	10	00-C0-F2-49-39-60	5	00-C0-F2-53-EF-FC	5

**Note:** All MEPs are programmed the same under the Functional Configuration.

#### Continuity Check

Check Enable – Priority: 7 – Frame rate: 1f/sec

#### APS Protocol

Check Enable – Priority: 7 – Cast: Multi – Type: R-APS

Functional Configuration

Continuity Check				APS Protocol				
Enable	Priority	Frame rate	TLV	Enable	Priority	Cast	Type	Last Octet
<input checked="" type="checkbox"/>	7	1 f/sec	<input type="checkbox"/>	<input checked="" type="checkbox"/>	7	Multi	R-APS	1

Fault Management
Performance Monitoring

ERPS ID	Port 0 RPL	Port 1 Port	Port 0 SF	Port 1 SF	Port 0 APS	Port 1 APS	Ring
1	1	2	1	2	1	2	Major Owner 0
5							

### Switch 2 Configuration (SISPM1040-384-LRT-C)

<b>VLANs</b>	Port 3	Trunk	Tag All	5,20
	Port 4	Trunk	Tag All	5,10
	Port 5	Trunk	Tag All	5,10,20

<b>STP</b>	Port 3	Disable
	Port 4	Disable
	Port 5	Disable

<b>MEPs</b>	Instance	Port	VLAN	MAC	MEP ID	Peer MAC	Peer
MEP ID	1	3	20	00-40-C7-1C-C7-2F	3	00-C0-F2-53-F0-BA	8
	2	4	10	00-C0-F2-49-39-60	4	00-C0-F2-49-39-5F	1
	3	5	10	00-40-C7-1C-C7-31	9	00-C0-F2-53-EF-FE	10

**Note:** All MEPs are programed the same under the Functional Configuration.

#### Continuity Check

Check Enable – Priority: 7 – Frame rate: 1f/sec

#### APS Protocol

Check Enable – Priority: 7 – Cast: Multi – Type: R-APS

Functional Configuration									
Continuity Check				APS Protocol					
Enable	Priority	Frame rate	TLV	Enable	Priority	Cast	Type	Last Octet	
<input checked="" type="checkbox"/>	7	1f/sec	<input type="checkbox"/>	<input checked="" type="checkbox"/>	7	Multi	R-APS	1	

#### ERPS

ERPS ID	Port 0	Port 1	Port 0 SF	Port 1 SF	Port 0 APS	Port 1 APS	Ring
RPL	Port	VLAN					
1	3 2	3	2	3	2	Major Neighbor	1 5
2	1 0	1	0	1	0	Sub Neighbor	0 5

Interconnect Yes, Major 1

### Switch 3 Configuration (SISPM1040-362-LRT[W])

**VLANs** Port 3 Trunk Tag All 5,20

Port 4 Trunk Tag All 5,20

**STP** Port 3 Disable

Port 4 Disable

MEPs ID	Instance	Port	VLAN	MAC	MEP ID	Peer MAC	Peer MEP
	1	3	20	00-C0-F2-53-F0-B9	7	00-C0-F2-53-EF-FD	6
	2	4	20	00-C0-F2-53-F0-BA	8	00-40-C7-1C-C7-2F	3

**Note:** All MEPs are programmed the same under the Functional Configuration.

#### Continuity Check

Check Enable – Priority: 7 – Frame rate: 1f/sec

#### APS Protocol

Check Enable – Priority: 7 – Cast: Multi – Type: R-APS

Functional Configuration									
Continuity Check				APS Protocol					
Enable	Priority	Frame rate	TLV	Enable	Priority	Cast	Type	Last Octet	
<input checked="" type="checkbox"/>	7	1 f/sec	<input type="checkbox"/>	<input checked="" type="checkbox"/>	7	Multi	R-APS	1	

ERPS										
ERPS ID	Port 0	Port 1	Port 0 SF	Port 1 SF	Port 0 APS	Port 1 APS	Ring	RPL		
	Port	VLAN								
1	1	2	1	2	1	2	Sub Owner	1	5	

**Switch 4 Configuration (SISPM1040-362-LRT[E])**

VLANs	Port	Mode	Tag	VLANs
	Port 3	Trunk	Tag All	5,10
	Port 4	Trunk	Tag All	5,20
	Port 5	Trunk	Tag All	5,10,20

STP	Port	Mode
	Port 3	Disable
	Port 4	Disable
	Port 5	Disable

MEPs	Instance	Port	VLAN	MAC	MEP ID	Peer MAC	Peer
MEP ID	1	3	10	00-C0-F2-53-EF-FC	5	00-C0-F2-49-39-60	2
	2	4	20	00-C0-F2-53-EF-FD	6	00-C0-F2-53-F0-B9	7
	3	5	10	00-C0-F2-53-EF-FE	10	00-40-C7-1C-C7-31	9

**Note:** All MEPs are programmed the same under the Functional Configuration.

**Continuity Check**

Check Enable – Priority: 7 – Frame rate: 1f/sec

**APS Protocol**

Check Enable – Priority: 7 – Cast: Multi – Type: R-APS

Functional Configuration

Continuity Check				APS Protocol				
Enable	Priority	Frame rate	TLV	Enable	Priority	Cast	Type	Last Octet
<input checked="" type="checkbox"/>	7	1f/sec	<input type="checkbox"/>	<input checked="" type="checkbox"/>	7	Multi	R-APS	1

Fault Management
Performance Monitoring

ERPS ID	Port 0	Port 1	Port 0 SF	Port 1 SF	Port 0 APS	Port 1 APS	Ring	RPL	Port
VLAN									
1	1 3	1 3	1 3	3	Major	None	5		
2	2 0	2 0	2 0	0	Sub	None	5		
Interconnect Yes, Major 1									



```
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64 Cable Disconnect
Reply from 192.168.1.85: bytes=32 time=3ms TTL=64 ←-----
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
Reply from 192.168.1.85: bytes=32 time=1ms TTL=64
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
Reply from 192.168.1.85: bytes=32 time=1ms TTL=64
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
Ping statistics for 192.168.1.85:
Packets: Sent = 45, Received = 45, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 5ms, Average = 0ms
```

## Testing Pings from Switch 4 to Switch 3 – Sub Ring

### Fail Subring, No lost pings

```
C:\Users\dennist>ping 192.168.1.125 -t
Pinging 192.168.1.125 with 32 bytes of data:
Reply from 192.168.1.125: bytes=32 time=1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time=7ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time=1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time=1ms TTL=64
```

←-----

Cable Disconnect

```
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
Ping statistics for 192.168.1.125:
Packets: Sent = 41, Received = 41, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 7ms, Average = 0ms
```

## Config files

### running-config\_192.168.1

**hostname SISPM1040-362-LRT-E**

```
username admin privilege 15 password encrypted
feec1d1085ff075fd03b1d2d5ab4c0befbfff0917079c8abb3a77338041bf5d6e1771bdbbd1a317ea2f42fc2aacc8c50a8
e667456d7c04099f74f8ef9dcc0fbd4
!
vlan 1
!
!
!
!
ip route 0.0.0.0 0.0.0.0 192.168.1.254
tzidx 0
exec-timeout autologout 0
snmp-server location DT Lab Ring
system name SISPM1040-362-LRT-E
system location DT Lab Ring
system description Managed Hardened PoE+ Switch, (4) 10/100/1000Base-T PoE+ Ports + (2)
10/100/1000Base-T Ports + (2) 100/1000Base-X SFP Ports
!
interface GigabitEthernet 1/1
!
interface GigabitEthernet 1/2
!
interface GigabitEthernet 1/3
no spanning-tree
switchport trunk allowed vlan 5,10
switchport trunk vlan tag native
switchport mode trunk
poE mode disable
!
interface GigabitEthernet 1/4
no spanning-tree
switchport trunk allowed vlan 5,20
switchport trunk vlan tag native
```

```
switchport mode trunk
poemode disable
!
interface GigabitEthernet 1/5
no spanning-tree
switchport trunk allowed vlan 5,10,20
switchport trunk vlan tag native
switchport mode trunk
!
interface GigabitEthernet 1/6
!
interface GigabitEthernet 1/7
!
interface GigabitEthernet 1/8
!
interface vlan 1
ip address 192.168.1.135 255.255.255.0
ip dhcp server
!
mep 1 down domain port level 4 interface GigabitEthernet 1/3
mep 1 mep-id 5
mep 1 vid 10
mep 1 peer-mep-id 2 mac 00-C0-F2-49-39-60
mep 1 cc 7
mep 1 aps 7 raps
mep 2 down domain port level 4 interface GigabitEthernet 1/4
mep 2 mep-id 6
mep 2 vid 20
mep 2 peer-mep-id 7 mac 00-C0-F2-53-F0-B9
mep 2 cc 7
mep 2 aps 7 raps
mep 3 down domain port level 4 interface GigabitEthernet 1/5
mep 3 mep-id 10
mep 3 vid 10
mep 3 peer-mep-id 9 mac 00-40-C7-1C-C7-31
mep 3 cc 7
mep 3 aps 7 raps
```

```
erps 1 major port0 interface GigabitEthernet 1/3 port1 interface GigabitEthernet 1/5
erps 1 mep port0 sf 1 aps 1 port1 sf 3 aps 3
erps 1 vlan 5
erps 2 sub port0 interface GigabitEthernet 1/4 interconnect 1
erps 2 mep port0 sf 2 aps 2
erps 2 vlan 5
!
spanning-tree aggregation
  spanning-tree link-type point-to-point
!
!
line console 0
!
line vty 0
!
line vty 1
!
line vty 2
!
line vty 3
!
line vty 4
!
line vty 5
!
line vty 6
!
line vty 7
!
line vty 8
!
line vty 9
!
line vty 10
!
line vty 11
!
```

```
line vty 12
!  
line vty 13
!  
line vty 14
!  
line vty 15
!  
!  
end
```

**running-config\_192.168.1****hostname SISPM1040-582-LRT**

```
logging on
logging host 192.168.1.253
username admin privilege 15 password encrypted
7073dec86c15b8a9907bb4106ef783adde46bd5b5969cc68fb55b430336bd7c80d5ded65d2fdb39abe81cc9caa5a93620
f270c21bca86e776cee9c5588bfb8c7
username superuser privilege 15 password encrypted
4643fdc71f39fd4cb955943fcaf89faca81bc650fbaeebe25a796662d5c225bf0d5ded65d2fdb39abe81cc9c514497e27
799560e488713aabaac4f167e7732ca
!
vlan 1
!
!
!
!
ip route 0.0.0.0 0.0.0.0 192.168.1.254
ntp automatic
ntp server 1 ip-address ntp1.transition.com
ntp server 2 ip-address ntp2.transition.com
clock timezone '' 9
tzidx 0
exec-timeout autologout 0
poE ping-check enable
snmp-server contact DTroxel
snmp-server location DT Office
system contact DTroxel
system name SISPM1040-582-LRT
system location DT Office
system description Managed Hardened PoE++ Switch (8) 10/100/1000Base-T PoE++ Ports + (2)
100/1000Base-X SFP Slot
!
interface GigabitEthernet 1/1
no spanning-tree
poE ping-ip-addr 192.168.1.70
poE failure-action reboot-Remote-PD
!
```

```
interface GigabitEthernet 1/2
  no spanning-tree
  switchport forbidden vlan add 3,5
!
interface GigabitEthernet 1/3
  no spanning-tree
  switchport trunk allowed vlan 5,10
  switchport trunk vlan tag native
  switchport mode trunk
  poe mode disable
!
interface GigabitEthernet 1/4
  no spanning-tree
  switchport trunk allowed vlan 5,10
  switchport trunk vlan tag native
  switchport mode trunk
  poe mode disable
  poe ping-ip-addr 192.168.1.200
!
interface GigabitEthernet 1/5
  no spanning-tree
!
interface GigabitEthernet 1/6
  no spanning-tree
!
interface GigabitEthernet 1/7
!
interface GigabitEthernet 1/8
  poe mode disable
!
interface GigabitEthernet 1/9
  no spanning-tree
!
interface GigabitEthernet 1/10
  no spanning-tree
!
interface vlan 1
```

```
ip address 192.168.1.85 255.255.255.0
ip dhcp server
!
mep 1 down domain port level 4 interface GigabitEthernet 1/3
mep 1 vid 10
mep 1 peer-mep-id 4 mac 00-40-C7-1C-C7-30
mep 1 cc 7
mep 1 aps 7 raps
mep 2 down domain port level 4 interface GigabitEthernet 1/4
mep 2 mep-id 2
mep 2 vid 10
mep 2 peer-mep-id 5 mac 00-C0-F2-53-EF-FC
mep 2 cc 7
mep 2 aps 7 raps
erps 1 major port0 interface GigabitEthernet 1/3 port1 interface GigabitEthernet 1/4
erps 1 mep port0 sf 1 aps 1 port1 sf 2 aps 2
erps 1 rpl owner port0
erps 1 vlan 5
!
spanning-tree aggregation
no spanning-tree
spanning-tree link-type point-to-point
!
!
line console 0
!
line vty 0
!
line vty 1
!
line vty 2
!
line vty 3
!
line vty 4
!
line vty 5
```

```
!  
line vty 6  
!  
line vty 7  
!  
line vty 8  
!  
line vty 9  
!  
line vty 10  
!  
line vty 11  
!  
line vty 12  
!  
line vty 13  
!  
line vty 14  
!  
line vty 15  
!  
map-api-key AIzaSyBITuM0hDtK6nJeZPEk7jnrcoGGi92EpFM  
!  
end
```

**running-config\_192.168.1****hostname SISPM1040-384-LRT-C**

```
username admin privilege 15 password encrypted
6593186b999f348becd63b8612ac561c114250a1a00bd38f6afb5378acb6d08c1864c59b092b0e2b29ba4f1d559166800
846cbc52c4558a90e4cdf95d3cfcfb4
username dennis privilege 5 password encrypted
a92a5dbf4fcd2e13d35adb36d2418476e907de19a641fa7baf80b1abb2bacd8ee5dbdd44e246b88be1636df6b8769af79
0aa8721622481085e33c32e6e119dbd
!
vlan 1
!
!
!
!
ip route 0.0.0.0 0.0.0.0 192.168.1.254
tzidx 0
exec-timeout autologout 0
poE ping-check enable
access-list ace 2 ingress interface GigabitEthernet 1/2 action deny
access-list ace 1 next 2 ingress interface GigabitEthernet 1/2 frame-type ipv4-tcp dport 443
system name SISPM1040-384-LRT-C
system description Managed Hardened PoE+ Switch, (8) 10/100/1000Base-T PoE+ Ports + (4)
100/1000Base-X SFP
!
interface GigabitEthernet 1/1
no spanning-tree
lldp cdp-aware
poE ping-ip-addr 192.168.1.100
poE failure-action reboot-Remote-PD
!
interface GigabitEthernet 1/2
no spanning-tree
lldp cdp-aware
speed 1000
duplex full
!
interface GigabitEthernet 1/3
```

```
no spanning-tree
switchport trunk allowed vlan 5,20
switchport trunk vlan tag native
switchport mode trunk
lldp cdp-aware
po e mode disable
!
interface GigabitEthernet 1/4
no spanning-tree
switchport trunk allowed vlan 5,10
switchport trunk vlan tag native
switchport mode trunk
lldp cdp-aware
po e mode disable
!
interface GigabitEthernet 1/5
no spanning-tree
switchport trunk allowed vlan 5,10,20
switchport trunk vlan tag native
switchport mode trunk
lldp cdp-aware
po e mode disable
!
interface GigabitEthernet 1/6
no spanning-tree
lldp cdp-aware
!
interface GigabitEthernet 1/7
lldp cdp-aware
!
interface GigabitEthernet 1/8
lldp cdp-aware
!
interface GigabitEthernet 1/9
no spanning-tree
switchport trunk allowed vlan 1,50,100
switchport trunk vlan tag native
```

```
lldp cdp-aware
!
interface GigabitEthernet 1/10
no spanning-tree
lldp cdp-aware
!
interface GigabitEthernet 1/11
no spanning-tree
lldp cdp-aware
!
interface GigabitEthernet 1/12
no spanning-tree
lldp cdp-aware
!
interface vlan 1
ip address 192.168.1.95 255.255.255.0
ip dhcp server
!
mep 1 down domain port level 4 interface GigabitEthernet 1/3
mep 1 mep-id 3
mep 1 vid 20
mep 1 peer-mep-id 8 mac 00-C0-F2-53-F0-BA
mep 1 cc 7
mep 1 aps 7 raps
mep 2 down domain port level 4 interface GigabitEthernet 1/4
mep 2 mep-id 4
mep 2 vid 10
mep 2 peer-mep-id 1 mac 00-C0-F2-49-39-5F
mep 2 cc 7
mep 2 aps 7 raps
mep 3 down domain port level 4 interface GigabitEthernet 1/5
mep 3 mep-id 9
mep 3 vid 10
mep 3 peer-mep-id 10 mac 00-C0-F2-53-EF-FE
mep 3 cc 7
mep 3 aps 7 raps
erps 1 major port0 interface GigabitEthernet 1/5 port1 interface GigabitEthernet 1/4
```

```
erps 1 mep port0 sf 3 aps 3 port1 sf 2 aps 2
erps 1 rp1 neighbor port1
erps 1 vlan 5
erps 2 sub port0 interface GigabitEthernet 1/3 interconnect 1
erps 2 mep port0 sf 1 aps 1
erps 2 rp1 neighbor port0
erps 2 vlan 5
!
spanning-tree aggregation
no spanning-tree
spanning-tree link-type point-to-point
!
!
line console 0
!
line vty 0
!
line vty 1
!
line vty 2
!
line vty 3
!
line vty 4
!
line vty 5
!
line vty 6
!
line vty 7
!
line vty 8
!
line vty 9
!
line vty 10
!
```

```
line vty 11
!  
line vty 12
!  
line vty 13
!  
line vty 14
!  
line vty 15
!  
map-api-key AIzaSyBITuM0hDtK6nJeZPEk7jnrcoGGi92EpFM
!  
end
```

**running-config\_192.168.1****hostname SISPM1040-362-LRT-W**

```
username admin privilege 15 password encrypted
6158ed7daf39d06ded0e7c4828c3b15bb4c40673bd445afcd643295925ae425d9611d1cbe872708237571aacc7b9237f3
3b01ae6866e2484009edfe1fa0bf56f
!
vlan 1
!
!
!
!
!
ip route 0.0.0.0 0.0.0.0 192.168.1.254
tzidx 0
exec-timeout autologout 0
snmp-server location DT Lab Ring
system name SISPM1040-362-LRT-W
system location DT Lab Ring
system description Managed Hardened PoE+ Switch, (4) 10/100/1000Base-T PoE+ Ports + (2)
10/100/1000Base-T Ports + (2) 100/1000Base-X SFP Ports
!
interface GigabitEthernet 1/1
!
interface GigabitEthernet 1/2
!
interface GigabitEthernet 1/3
no spanning-tree
switchport trunk allowed vlan 5,20
switchport trunk vlan tag native
switchport mode trunk
poE mode disable
!
interface GigabitEthernet 1/4
no spanning-tree
switchport trunk allowed vlan 5,20
switchport trunk vlan tag native
switchport mode trunk
poE mode disable
```

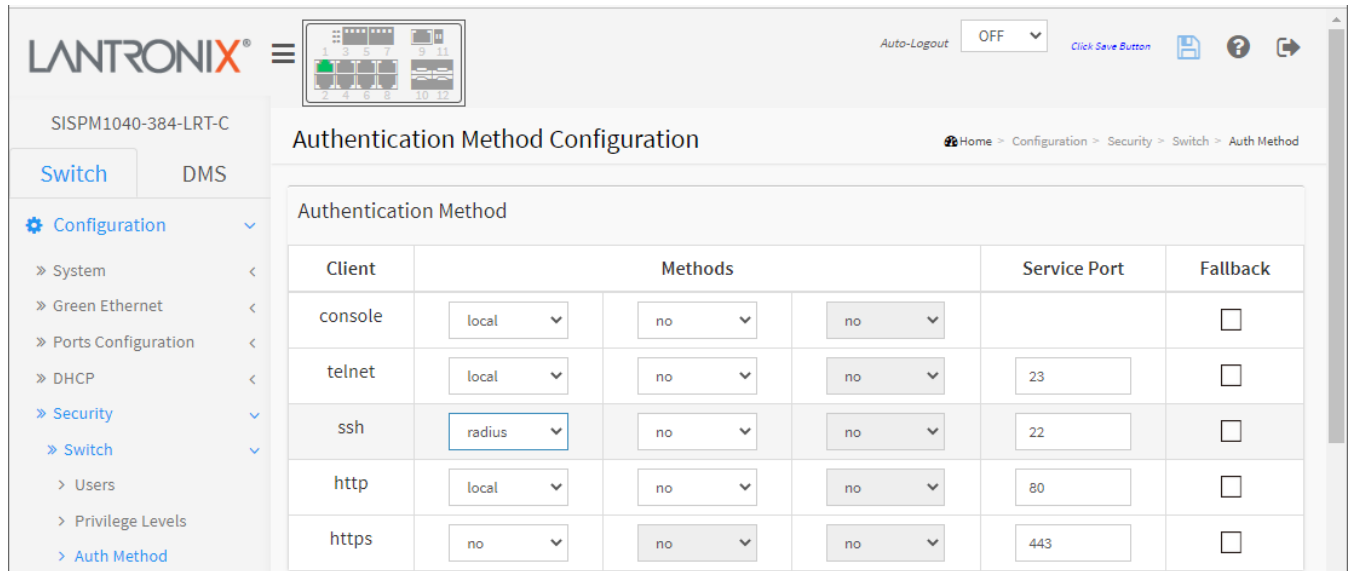
```
!  
interface GigabitEthernet 1/5  
!  
interface GigabitEthernet 1/6  
!  
interface GigabitEthernet 1/7  
!  
interface GigabitEthernet 1/8  
!  
interface vlan 1  
  ip address 192.168.1.125 255.255.255.0  
  ip dhcp server  
!  
mep 1 down domain port level 4 interface GigabitEthernet 1/3  
mep 1 mep-id 7  
mep 1 vid 20  
mep 1 peer-mep-id 6 mac 00-C0-F2-53-EF-FD  
mep 1 cc 7  
mep 1 aps 7 raps  
mep 2 down domain port level 4 interface GigabitEthernet 1/4  
mep 2 mep-id 8  
mep 2 vid 20  
mep 2 peer-mep-id 3 mac 00-40-C7-1C-C7-2F  
mep 2 cc 7  
mep 2 aps 7 raps  
erps 1 sub port0 interface GigabitEthernet 1/3 port1 interface GigabitEthernet 1/4  
erps 1 mep port0 sf 1 aps 1 port1 sf 2 aps 2  
erps 1 rpl owner port1  
erps 1 vlan 5  
!  
spanning-tree aggregation  
  spanning-tree link-type point-to-point  
!  
!  
line console 0  
!  
line vty 0
```

```
!  
line vty 1  
!  
line vty 2  
!  
line vty 3  
!  
line vty 4  
!  
line vty 5  
!  
line vty 6  
!  
line vty 7  
!  
line vty 8  
!  
line vty 9  
!  
line vty 10  
!  
line vty 11  
!  
line vty 12  
!  
line vty 13  
!  
line vty 14  
!  
line vty 15  
!  
!  
end
```

## Appendix D. Secure File Transfer (SFTP) Set-Up

**Switch Settings** : RADIUS Authentication Using SSH Putty Port 22.

**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? Click OK to continue or click Cancel to quit.

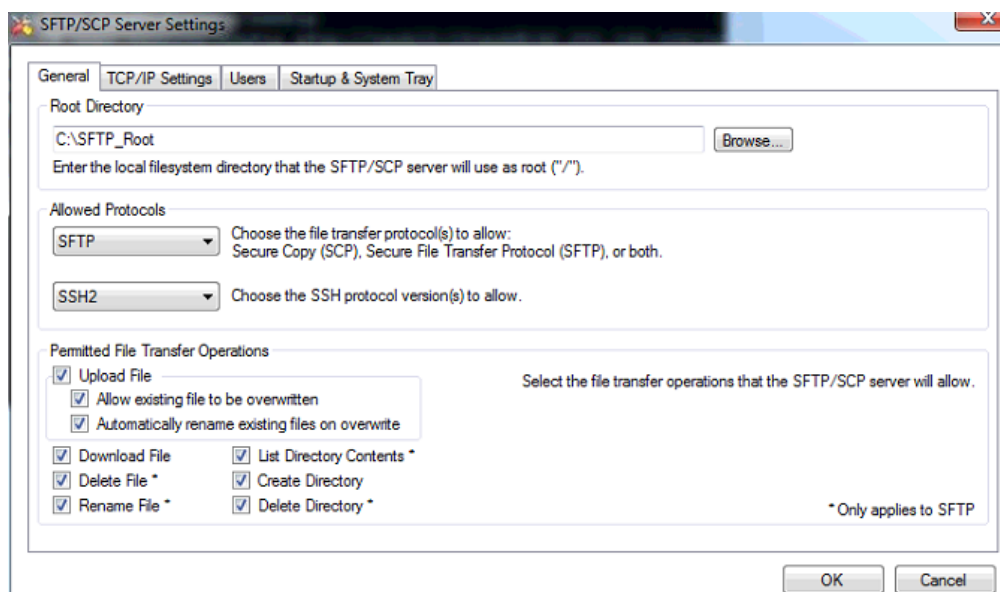


### Solar Wind Settings

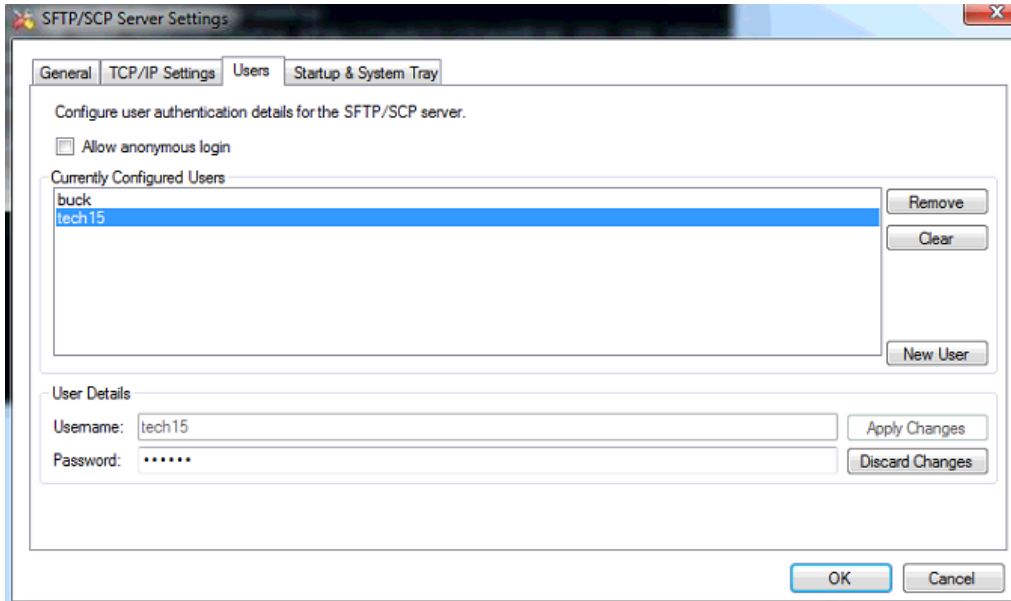
For Win10 pscp commands in SolarWinds see [SFTP server](#). For more info see the [documentation webpage](#).

For pscp information see [Using PSCP with PuTTY](#).

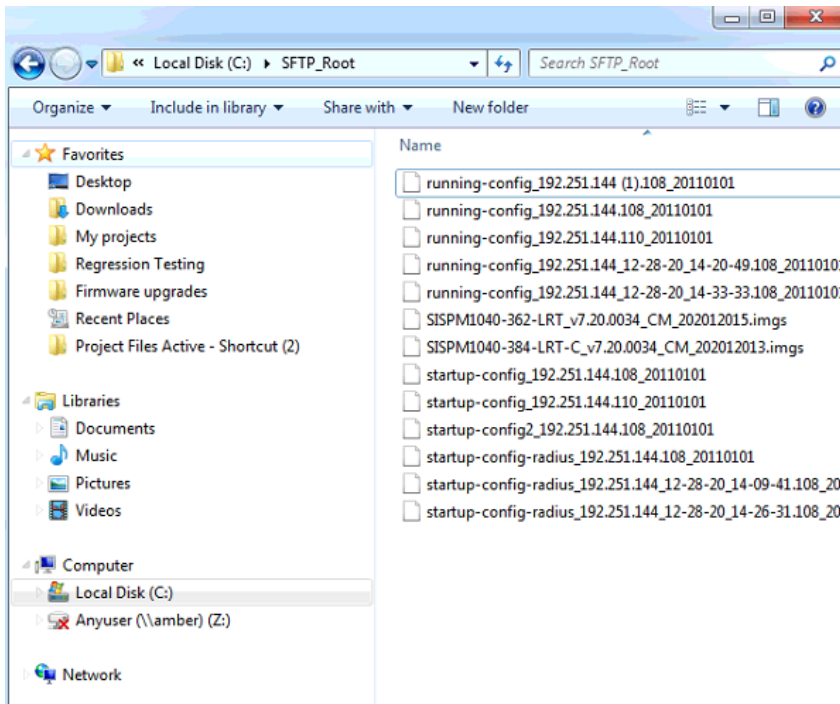
### General tab



## Users tab



## Windows Explorer



## SISPM1040-362-LRT *copy* Commands

**Note:** SISPM1040-384-LRT-C and SISPM1040-362-LRT FW v7.20.0034 added SFTP function and fixed:

- SolarWinds SFTP server error message.
- Issue when transferring a config from the SFTP server to the switch's running-config, the intended config only gets partially applied.
  - Add merge and replace options for the "copy" command (the default value is "replace"):

**Command:** `copy { startup-config | running-config | <url_file> } { startup-config | running-config | <url_file> } [ syntax-check ] [ save-host-key ] [ ftp-active ] [{ merge | replace }]`

**Example :**

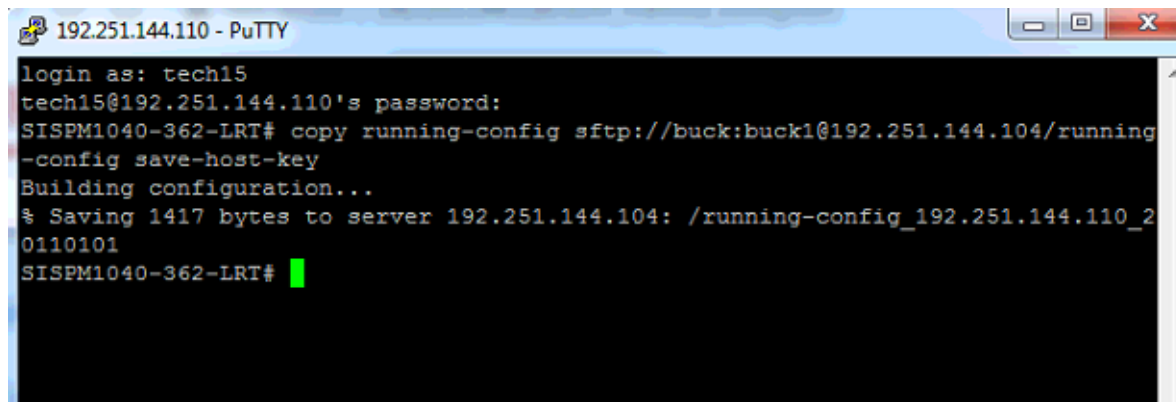
```
copy sftp://root:transition@192.168.1.248/running_192.168.1.203_20110101 running-config save-host-key
replace
```

### 1. CLI Command:

```
copy running-config sftp://buck:buck1@192.251.144.104/running-config save-host-key
```

Description: Transfer running-config from switch to SolarWinds, using SFTP protocol.

Example:



```
192.251.144.110 - PuTTY
login as: tech15
tech15@192.251.144.110's password:
SISPM1040-362-LRT# copy running-config sftp://buck:buck1@192.251.144.104/running-config save-host-key
Building configuration...
% Saving 1417 bytes to server 192.251.144.104: /running-config_192.251.144.110_20110101
SISPM1040-362-LRT# █
```

```
CLI Command: copy startup-config sftp://buck:buck1@192.251.144.104/startup-config-radius save-host-key
```

Description: Transfer startup-config from switch to SolarWinds, using SFTP protocol.

Example:

```
SISPM1040-362-LRT# copy startup-config sftp://buck:buck1@192.251.144.104/startup-  
-config-radius save-host-key  
% Saving 1239 bytes to server 192.251.144.104: /startup-config-radius_192.251.14  
4.110_20110101  
SISPM1040-362-LRT#
```

**CLI Command:** `copy sftp://tech15:15tech@192.251.144.104/startup-  
config_192.251.144.110_20110101 startup-config save-host-key`

Description: Transfer startup-config from SolarWinds to the switch using the SFTP protocol.

Example:

```
SISPM1040-362-LRT# copy sftp://tech15:15tech@192.251.144.104/startup-config_192.  
251.144.110_20110101 startup-config save-host-key  
% Loading /startup-config_192.251.144.110_20110101 from SFTP server 192.251.144.  
104  
% Saving 1004 bytes to flash:startup-config  
SISPM1040-362-LRT#
```

**CLI Command:** `copy running-config sftp://tech15:15tech@192.251.144.104/running-  
config save-host-key`

Description: Transfer running-config from SolarWinds to the switch using the SFTP protocol.

Example:

```
SISPM1040-362-LRT# copy running-config sftp://tech15:15tech@192.251.144.104/runn  
ing-config save-host-key  
Building configuration..  
% Saving 1417 bytes to server 192.251.144.104: /running-config_192.251.144.110_2  
0110101  
SISPM1040-362-LRT#
```

## Appendix E. Generating and Uploading a Self-Signed Certificate

### Install OpenSSL

Use OpenSSL 3.0.0 or later.

- Windows - <https://slproweb.com/products/Win32OpenSSL.html>
- Windows - Cygwin also works, install OpenSSL under Net.
- Linux - OpenSSL is likely already installed. If not, use google to find the install command for your distribution.

### Generate the Certificate

1. Open a terminal window and access OpenSSL.
  - On Windows, open the Win64 OpenSSL command prompt (or cygwin terminal if using cygwin). In the examples below, the default installation directory is shown as the prompt.
  - On Linux, open your terminal.
2. Optional - Check the openssl version.

Windows example (the prompt on Linux/cygwin will likely end in \$):

```
C:\Program Files\OpenSSL-Win64\bin>openssl version
OpenSSL 3.5.2 5 Aug 2025 (Library: OpenSSL 3.5.2 5 Aug 2025)
```

3. Create certificate and key:

Windows example (the prompt on Linux/cygwin would likely end in \$):

```
C:\Program Files\OpenSSL-Win64\bin> openssl req -x509 -newkey rsa:2048 -noenc -subj
"/C=US/ST=MN/L=Plymouth/O=Lantronix/OU=Engineering/CN=John
Doe/emailAddress=support@lantronix.com" -keyout key.pem -out cert.pem -days 365
```

Note: If you copy the above command, remove line breaks (<cr>) before pasting the command in the terminal window.

#### Notes for certificate and key creation:

You can replace the openssl parameters according to your requirements. In the example above, the certificate would be valid for 365 days from time of creation. To modify the duration, specify a different value for the -days option.

The -subj and its options can be omitted. If omitted on the CLI, you will be prompted to enter each of the fields.

To avoid being prompted, substitute your own values into the fields in the -subj flag. The fields are as follows:

C= Country - 2 letter code  
 ST= State (Province) = 2 letter code  
 L= Locality (City)  
 O= Organization (Company)  
 OU= Organizational Unit (Department)  
 CN= Common Name (Your name or administrator's name)  
 emailAddress= Contact email address

4. Create the PEM file using the generated certificate and key.

- On Windows using the Win64 OpenSSL Command Prompt:

```
C:\Program Files\OpenSSL-Win64\bin> type cert.pem key.pem > upload.pem
```

- On Linux (or cygwin on Windows):

```
$ cat cert.pem key.pem > upload.pem
```

5. Edit the upload.pem file with a text editor. Make the following changes:

```
-----BEGIN PRIVATE KEY-----
```

change to

```
-----BEGIN RSA PRIVATE KEY-----
```

```
-----END PRIVATE KEY-----
```

change to

```
-----END RSA PRIVATE KEY-----
```

Note: If these changes are not made, the switch will report that the certificate is invalid.

6. Save the file and put it in your tftp server's tftproot (can be left in place if you're uploading .pem file through web browser).

## Upload the Certificate to the Switch

### CLI method

1. Open an SSH connection to the SISPM1040-362-LRT or SISPM1040-384-LRT-C using a terminal emulator.
2. Disable https:

```
# configure terminal
(config) # no aaa authentication login https
```

3. Upload the pem file from your tftp server (substitute your tftp server's IP address):

```
(config) # ip http secure-certificate upload tftp://<tftp server IP>/upload.pem
```

## 4. Enable https:

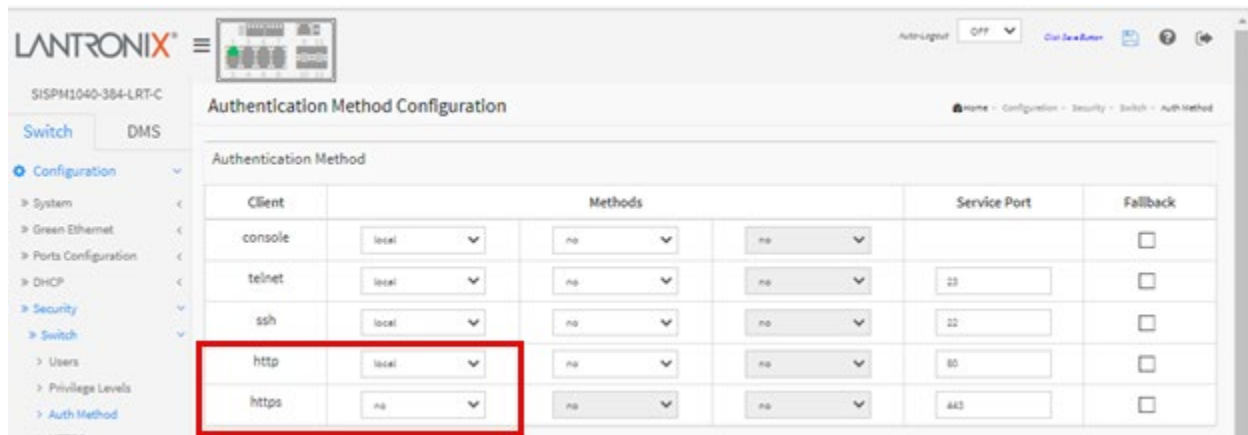
```
(config) # aaa authentication login https local
```

## 5. Assuming all is well, remember to save your configuration!

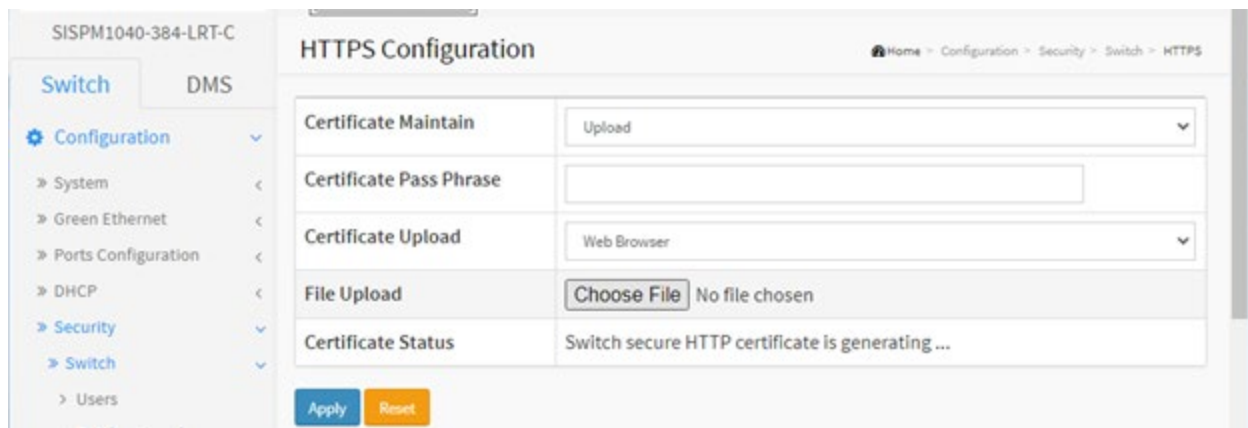
```
# copy running-config startup-config
```

**Web UI method**

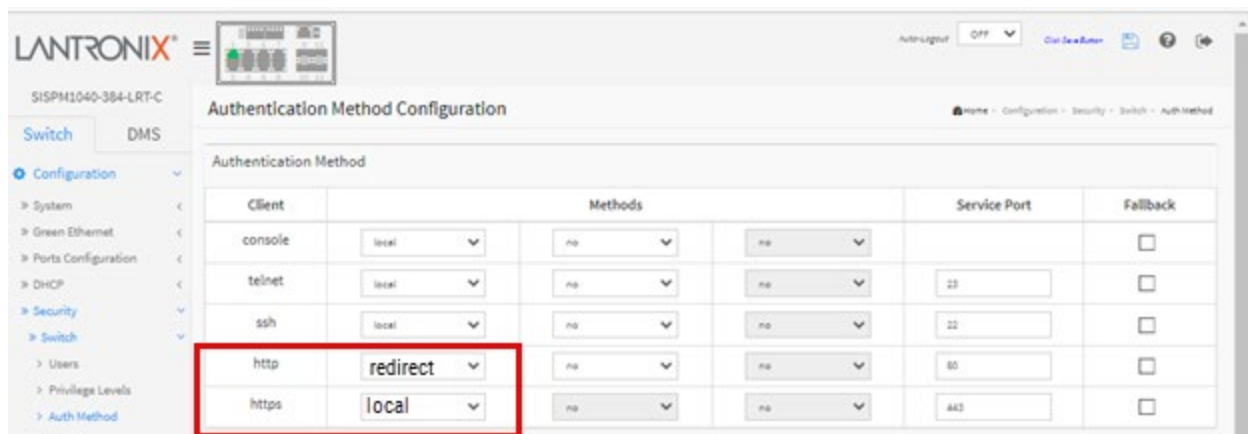
1. Login to the SISPM1040-362-LRT or SISPM1040-384-LRT-C from a web browser.
2. Go to Authentication Method Configuration page to disable https auth method.
  - a. Set http to "local" and https to "no" as shown below.



3. Click the Apply button. Let the Web Server restart if necessary and re-login (URL should now be http://<switch IP>).
4. Go to Configuration -> Security -> Switch -> HTTPS to upload the pem file.
  - a. Certificate Maintain – select Upload.
  - b. Certificate Pass Phrase – leave it blank
  - c. Certificate Upload – If you choose Web browser, click Choose File and select the upload.pem file. If you choose URL, enter URL of your tftp server in the URL field (tftp://<tftp server IP>/upload.pem).



5. Click the Apply button.
6. Once the certificate has been successfully uploaded, enable https. To do this, go to the Authentication Method Configuration page.
  - a. Set http to “redirect” and https to “local” as shown below.



7. Click the Apply button. Let the Web Server restart and re-login (URL should now be https://<switch IP>).
8. Use your web browser to verify the uploaded certificate is being used.
9. If successful, save the configuration to startup-config by clicking the Save icon on the Information bar (top-right side of the web UI).



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