

SISPM1040-384-LRT-C and SISPM1040-362-LRT Managed Hardened Gigabit Ethernet PoE+ Switch

CLI Reference

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Revision History

Rev	Date	Description of Changes
5/27/21	G	FW v7.20.0063: add API command Set SSL Key and Get SSL Key Status. Add ping, traceroute, and activate_config API commands. Add API commands for Auto Power Reset, SNMP trap config, Show syslog, Clear syslog, and SFP port details. Fix Traceroute, SNMP Write Community, and API Set ACL command issues. Modify API response structure for getting firmware upgrade, active config, Ping, Traceroute, set SSL key, and login and logout status. Fix Traceroute and SNMP Trap Destination Port value issues. Add API command /api/get_config_action_status.
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.

Safety Warnings and Cautions

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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 CLI Management

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 command-line interface.
2. Attach the RJ45 serial port on the switch's front panel which used to connect to the switch for console configuration.
3. Attach the other end of the DB-9 cable to an ASCII terminal emulator or PC Com-1, 2 port. For example, 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 a 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#
```

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
Config-impcc-profile	<sys_name>(config-impcc-profile)#	IPMC Profile
Config-snmp-host	<sys_name>(config-snmp-host)#	SNMP Server Host
Config-dhcp-pool	<sys_name>(config-dhcp-pool)#	DHCP Pool Configuration

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.

Changing Between Command Modes

MODE	ENTER MODE	LEAVE MODE
exec	--	--
config	Configure terminal	exit
config-interface	Interface <port-type> <port-type-list>	exit
config-vlan	Interface vlan <vlan_list>	exit

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.

Command Line Navigation

At the end of a page you can hit the space bar to show the next page, type the letter g to continue, or type the letter q to quit the session:

```
-- more --, next page: Space, continue: g, quit: ^C
- push the # sign. , . , .
```

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

Exec Mode Commands

Enter a **?** and hit Enter at the startup prompt to display the Exec mode CLI 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:
```


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#
```

2 Clear Commands

Table : CLEAR Commands

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

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

EXAMPLE

```

SISPM1040-384-LRT-C# clear ip ?
  arp          Clear ARP cache
  dhcp         Dynamic Host Configuration Protocol
  igmp        Internet Group Management Protocol
  statistics   Traffic statistics
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

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

EXAMPLE

```

SISPM1040-384-LRT-C# clear ipv6?
    ipv6    IPv6 configuration commands
SISPM1040-384-LRT-C# clear ipv6 ?
    mld     Multicast Listener Discovery
    neighbors  IPv6 neighbors

```

```
statistics    Traffic statistics
SISPM1040-384-LRT-C# clear ipv6 mld ?
snoping      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 ?
<cr>
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

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# 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

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

EXAMPLE

```
SISPM1040-384-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

sticky	port security sticky function per interface.
All	clear all sticky mac at all ports
interface	Choose port
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
<port_type_list>	Port list 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

interface	Interface
receiver	Clear statistics for receiver.
<port_type>	GigabitEthernet
<Samplers : option>	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

detected-protocols	Set the STP migration check
statistics	STP statistics
interface	Choose port
<port_type>	GigabitEthernet
<port_type_list>	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#
```

3 Configure Mode Commands

The Config mode commands are listed and described below.

<u>Command</u>	<u>Function</u>
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 History to Flash
consoleflow	Consoleflow configuration
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
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.
sntp	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.

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

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

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

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

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

EXAMPLE

```
SISPM1040-384-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.

SYNTAX

always-on-poe <cr>

Parameters

| Output modifiers
<cr>

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

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

EXAMPLE

```

SISPM1040-384-LRT-C(config)# clock set 2020/03/02 12:48:32
2020-03-02T12:48:32+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
```

consoleflow

Enter ConsoleFlow Configuration mode and set and view ConsoleFlow parameters. See chapter [24 ConsoleFlow Commands](#) on page [310](#).

SYNTAX

Parameters

See chapter [24 ConsoleFlow Commands](#) on page [310](#).

EXAMPLE

```
SISPM1040-384-LRT-C(config)# consoleflow <cr>
SISPM1040-384-LRT-C(config-consoleflow)# ?
  active      Sets active connection to Connection <number>
  apply       Sets the mode on firmware updates
  connection  Sets the connection 1 or connection 2
  content     Sets the firmware and configuration check interval
  device      Sets the Device ID
  do          To run exec commands in config mode
  end         Go back to EXEC mode
  exit        Exit from current mode
  help        Description of the interactive help system
  no          Removes a device parameter
  show        Displays the current configuration
  state       Consoleflow state
  status      Sets the status update interval
SISPM1040-384-LRT-C(config-consoleflow)#
```

default

Set a access list rate limiter to its defaults.

SYNTAX

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

Parameters

access-list	Access list
rate-limiter	Rate limiter
<RateLimiterId : 1-16>	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)(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)(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) v7.20.0121  
Build Date   : 2022-07-27T16:26:55+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

authentication	Authentication
feature	Globally enables/disables a dot1x feature functionality
guest-vlan	Guest VLAN
max-reauth-req	Guest VLAN ID used when entering the Guest VLAN.
re-authentication	Set Re-authentication state
system-auth-control	Set the global NAS state
timeout	timeout
timer	timer
inactivity	Time in seconds between check for activity on successfully authenticated MAC addresses.
re-authenticate	The period between re-authentication attempts in seconds
<10-1000000>	seconds
<1-3600>	seconds
guest-vlan	Globally enables/disables state of guest-vlan
radius-qos	Globally enables/disables state of RADIUS-assigned QoS.
radius-vlan	Globally enables/disables state of RADIUS-assigned VLAN.
<1-4095>	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
erps guard	Guard time in ms (10-2000)
erps holdoff	Hold-off time in ms (0-10000)
erps major	Major ring
rps mep	Maintenance Entity endPoint
erps revertive	Wait-to-restore time in minutes (1-12)
erps rpl	Ring Protection Link <neighbor> <owner>
erps sub	Sub-ring
erps topology-change	propagate
erps version	<Version 1> <Version 2>
erps 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

evc	instance (1-256)
evc ece	EVN Control Entry
evc policer	Policer (ingress bandwidth profile)
evc update	Update existing entry

evc inner-tag	Setup inner tag options
evc interface	Setup NNI port list
evc ivid	Setup internal EVC VLAN ID
evc learning	Setup learning
evc outer-tag	Setup outer tag options
evc vid	Setup EVC VLAN ID
vid-mode	Setup inner tag VLAN ID mode
<0-1>	Added tag DEI
pcp	Setup added tag PCP
preserve	Setup tag PCP/DEI preservation
type	Setup added tag type
disable	Disable learning
<1-256>	EVC identifier
add	Setup inner tag add properties
dei	Setup added tag DEI
vid	Setup added tag VLAN ID
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
<port_type_list>	Port list in 1/1-12
<vlan_id>	Internal VLAN ID
learning	Setup learning
outer-tag	Setup outer tag options
add	Setup outer tag add properties
<vlan_id>	Added tag VLAN ID
<0-7>	Class of Service
disable	Disable ECE CoS classification
both	Bidirectional traffic flow
nni-to-uni	NNI-to-UNI traffic flow
uni-to-nni	UNI-to-NNI traffic flow
any	Match any DMAC
broadcast	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 [Configure Interface Commands](#) on page 139.

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
lacp        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

arp	Address Resolution Protocol
dhcp	Dynamic Host Configuration Protocol
dns	Domain Name System
domain	IP DNS Resolver
gateway	Gateway address binding interface
helper-address	DHCP relay server
http	Hypertext Transfer Protocol
igmp	Internet Group Management Protocol
link-local	Link-Local address binding interface
name-server	Domain Name System
route	Add IP route
routing	Enable routing for IPv4 and IPv6
scp	Secure copy function
source	source command
ssh	Secure Shell
telnet	TELNET
verify	verify command
inspection	ARP inspection
entry	arp inspection entry
interface	arp inspection entry interface config
<port_type>	Port type in Fast, Giga ethernet
<port_type_id>	Port ID in the format of switch-no/port-no
<vlan_id>	Select a VLAN id to configure
<mac_ucast>	Select a MAC address to configure
<ipv4_ucast>	Select an IP Address to configure
deny	log denied entries
permit	log permitted entries
all	log all entries
translate	arp inspection translate all entries
vlan	arp inspection vlan setting

<vlan_list>	arp inspection vlan list
relay	DHCP relay agent information
information	DHCP information option <Option 82>
option	DHCP option
information	DHCP information option(Option 82)
policy	Policy for handling the receiving DHCP packet already include the information option
drop	Drop the package when receive a DHCP message that already contains relay information
keep	Keep the original relay information when receive a DHCP message that already contains it
replace	Replace the original relay information when receive a DHCP message that already contains it
server	Enable DHCP server
snooping	DHCP snooping
proxy	DNS proxy service
secure-certificate	HTTPS certificate
secure-redirect	Secure HTTP web redirection
secure-server	Secure HTTP web server
snooping	Snooping IGMP
<word16>	Profile name in 16 char's
vlan	IGMP VLAN
ssm-range	IPv4 address range of Source Specific Multicast
<ipv4_mcast>	Valid IPv4 multicast address
<4-32>	Prefix length ranges from 4 to 32
unknown-flooding	Flooding unregistered IPv4 multicast traffic
<ipv4_ucast>	A valid IPv4 unicast address
dhcp	Dynamic Host Configuration Protocol
interface	Select an interface to configure
vlan	VLAN Interface
<vlan_id>	VLAN identifier(s): VID
<ipv4_addr>	Network
<ipv4_netmask>	Netmask
<ipv4_addr>	Gateway
binding	ip source binding
interface	ip source binding entry interface config
<port_type>	* or Gigabitethernet
*	All switches or All ports
Gigabitethernet	1 Gigabitethernet Port
<port_type_id>	Port ID in the format of switch-no/port-no, ex 1/1-8 for Gigabitethernet

<vlan_id>	Select a VLAN id to configure
<ipv4_ucast>	Select an IP Address to configure
<ipv4_netmask>	Select a subnet mask to configure
<mac_ucast>	Select a MAC address to configure
source	verify source
limit	limit command
<0-2>	the number of limit
translate	ip verify source translate all entries
logging	ARP inspection vlan logging mode config
keyregen	Regenerate ssh key
port	Service port number
<1-65534>	Port number
generate	Generate a new self-signed RSA certificate
upload	Upload a certificate PEM file

<url_file> Uniform Resource Locator. A specific character string that constitutes a reference to a resource.

Syntax: *<protocol>://[<username>[:<password>]@]<host>[:<port>][/<path>]/<file_name>*

If the following special characters: space !"#%&'()*+/,;:<=>?@[\\]^_{|}~ need to be contained in the input url string, they should 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
u5gfbqCVLz3IsQVTsnb75Bgmw6vDmdznurjiaWhLTpXfyJhSGlkn59IkYPTzDoSkBsV+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_uroast>	Router's IP address
<ipv4_uroast>	Server's IP address
<line>	Exec Command
<word128>	Domain name
<mac_uroast>	Client MAC address
<ipv4_uroast>	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_uroast>	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_uroast>	Network number
<ipv4_netmask>	Network mask in dotted-decimal notation, excluding 255.255.255.255
<word128>	NIS domain name
<ipv4_uroast>	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 (WINSOCP) 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

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

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

SYNTAX

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

Parameters

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

EXAMPLE

```
SISPM1040-384-LRT-C(config)# lACP system-priority 4000  
SISPM1040-384-LRT-C(config)# lACP on-air index 1 couple-ip 192.168.1.79 192.168.1.99  
SISPM1040-384-LRT-C(config)# lACP on-air index 1 port GigabitEthernet 1/9  
SISPM1040-384-LRT-C(config)#
```

line

Configure a terminal line.

SYNTAX

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

Parameters

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

holdtime	Sets LLDP hold time (The neighbor switch will discard the LLDP information after "hold time" multiplied with "timer" seconds).
med	Media Endpoint Discovery.
reinit	LLDP tx reinitialization delay in seconds.
timer	Sets LLDP TX interval (The time between each LLDP frame transmitted in seconds).
transmission-delay	Sets LLDP transmission-delay (the amount of time that transmission of LLDP frames will be delayed after LLDP config has changed) in seconds.
<2-10>	2-10 seconds.
<1-10>	1-10 seconds.
<5-32768>	5-32768 seconds.
<1-8192>	1-8192 seconds.
datum	Datum (geodetic system) type.
fast	Number of times to repeat LLDP frame transmission at fast start.
location-tlv	LLDP-MED Location Type Length Value parameter.
media-vlan-policy	Use the media-vlan-policy to create a policy, which can be assigned to an interface.
nad83_mllw	Mean lower low water datum 1983
nad83_navd88	North American vertical datum 1983
wgs84	World Geodetic System 1984
altitude	Altitude parameter
meter	Altitude value
floors	Altitude value
civic-addr	Civic address information and postal information
country	The two-letter ISO 3166 country code in capital ASCII letters - Example: DK, DE or US.
state	National subdivisions (state, canton, region, province, prefecture).
county	County, parish, gun (Japan), district.
city	City, township, shi (Japan) - Example: Copenhagen.
district	City division, borough, city district, ward, chou (Japan).
block	Neighbourhood, block.
street	Street - Example: Poppelvej.
leading-street-direction	Leading street direction - Example: N.
trailing-street-suffix	Trailing street suffix - Example: SW.
street-suffix	Street suffix - Example: Ave, Platz.
house-no	House number - Example: 21.

house-no-suffix	House number suffix - Example: A, 1/2.
landmark	Landmark or vanity address - Example: Columbia University.
additional-info	Additional location info - Example: South Wing.
name	Name (residence and office occupant) - Example: Flemming Jahn.
zip-code	Postal/zip code - Example: 2791.
building	Building (structure) - Example: Low Library.
apartment	Unit (Apartment, suite) - Example: Apt 42.
floor	Floor - Example: 4.
room-number	Room number - Example: 450F.
place-type	Place type - Example: Office.
postal-community-name	Postal community name - Example: Leonia.
p-o-box	Post office box (P.O. BOX) - Example: 12345.
additional-code	Additional code - Example: 1320300003.
<string250>	Value for the corresponding selected civic address.
elin-addr	Emergency Location Identification Number, (e.g. E91, etc), as defined by TIA or NENA.
<dword25>	ELIN value
north	Setting latitude direction to north.
south	Setting latitude direction to south.
<word8>	Latitude degrees (0.0000-90.0000).
policy-list	Assignment of policies.
<range_list>	Policies to assign to the interface.
<0-31>	Policy id for the policy which is created.
voice	Create a voice policy.
voice-signaling	Create a voice signaling policy.
guest-voice-signaling	Create a guest voice signaling policy.
guest-voice	Create a guest voice policy.
softphone-voice	Create a softphone voice policy.
video-conferencing	Create a video conferencing policy.
streaming-video	Create a streaming video policy.
video-signaling	Create a video signaling policy.
tagged	The policy uses tagged frames.
<vlan_id>	The VLAN the policy uses tagged frames.
untagged	The policy uses un-tagged frames.
I2-priority	Layer 2 priority.
<0-7>	Priority 0-7
dscp	Differentiated Services Code Point.

<0-63> 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

host	host
<ipv4_ucast>	IP address of the log server
<hostname>	Domain name of the log server
level	level
info	Information
warning	Warning
error	Error
on	Enable syslog server
host	host
on	Enable Switch logging host mode
port	Service port number
<domain_name>	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 (.)
<ipv4_ucast>	The IPv4 address of the log server
<1-65535>	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 <dvid> reflector-
port <port_type> <rportid> } | source { interface ( <port_type> [ <si_list> ] ) [ both | rx | tx ] | remote vlan <srvid> | vlan
<source_vlan_list> | cpu [ both | rx | tx ] } | intermediate { interface ( <port_type> [ <ii_list> ] ) | remote vlan <irvid> } ]
```

Parameters

session	Configure a MIRROR session
<1>	MIRROR session number
destination	The destination port. That is the port that traffic should be mirrored to.
interface	Interface to mirror traffic to.
source	The source port. That is the source port to be mirrored to the destination port.
interface	Mirror interface traffic.
<port_type>	1 Gigabit Ethernet port
*	All switches or all ports
GigabitEthernet	1 Gigabit Ethernet Port
<port_type_list>	Port list in 1/1-8.
cpu	Mirror CPU traffic.
both	Setting source port to both will mirror both ingress and egress traffic.
rx	Setting source port to rx will mirror both ingress traffic.
tx	Setting source port to tx will mirror both egress traffic.
<port_type>	Port type in Gigabitethernet
<port_type_list>	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 305.

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

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

channel	MVR channel configuration
<word16>	Profile name in 16 char's
frame	MVR control frame in TX
priority	Interface CoS priority
<0-7>	CoS priority ranges from 0 to 7
igmp-address	MVR address configuration used in IGMP
<ipv4_ucast>	A valid IPv4 unicast address
<vlan_list>	MVR multicast VLAN list
last-member-query-interval	Last Member Query Interval in tenths of seconds
<0-31744>	0 - 31744 tenths of seconds
compatible	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)#
```

poe

Configure Power Over Ethernet.

SYNTAX

```

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

```

Parameters

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

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

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

EXAMPLE

```
SISPM1040-384-LRT-C(config)# privilege stp-aggr level 15 line  
SISPM1040-384-LRT-C(config)# privilege consoleflow 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 | p2ptransparent | master | slave | bcffrontend } [ onestep |
twostep ] [ ethernet | ethernet-mixed | ip4multi | ip4mixed | ip4unicast | oam | onepps ] [ oneway | twoway ] [ id
<v_clock_id> ] [ vid <vid> [ <prio> ] [ tag ] ] [ mep <mep_id> ] [ profile { ieee1588 | g8265.1 | g8275.1 } ]
[ clock-domain 0 ] [ dscp <dscp_id> ]
ptp <clockinst> priority1 <priority1>
ptp <clockinst> priority2 <priority2>
ptp <clockinst> servo ad <ad>
ptp <clockinst> servo ai <ai>
ptp <clockinst> servo ap <ap>
ptp <clockinst> servo displaystates
ptp <clockinst> servo phase-mode
ptp <clockinst> slave-cfg [ stable-offset <stable_offset> ] [ offset-ok <offset_ok> ] [ offset-fail <offset_fail> ]
ptp <clockinst> time-property [ utc-offset <utc_offset> ] [ valid ] [ leap-59 | leap-61 ] [ time-traceable ]
[ freq-traceable ] [ ptptimescale ] [ time-source <time_source> ]
ptp <clockinst> uni <idx> [ duration <duration> ] <ip>
ptp ext [ output | input | out-in ] [ ext <clockfreq> ] [ vcxo | ltc-freq | synce-dpll | osc | ltc-phase ]
ptp ref-clock { mhz125 | mhz156p25 | mhz250 }
ptp system-time { get | set }
ptp tc-internal [ mode <mode> ]

```

Parameters

<0-3>	Clock instance [0-3]
ext	Update 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
synce-dpll	Select SyncE DPLL frequency control, if allowed by SyncE
vcxo	Enable VCXO frequency control (same as synce-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 | ta
gged | 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

map	Global QoS Map/Table
qce	QoS Control Entry
storm	Storm policer
cos-dscp	Map for CPS to DSCP
dscp-classify	Map for DSCP classify enable

dscp-cos	Map for DSCP to COS
dscp-egress-translation	Map for DSCP egress translation
dscp-ingress-translation	Map for DSCP ingress translation
<1-256>	QCE ID
refresh	Refresh QCE tables in hardware
update	Update an existing QCE
broadcast	Police broadcast frames
multicast	Police multicast frames
unicast	Police unicast frames
<0~7>	Specific class of service or range
dpl	Specify drop precedence level
0~1	Specific drop precedence level or range
dscp	Specify DSCP
<0-63>	Specific DSCP
af11	Assured Forwarding PHB AF11(DSCP 10)
af12	Assured Forwarding PHB AF12(DSCP 12)
af13	Assured Forwarding PHB AF13(DSCP 14)
af21	Assured Forwarding PHB AF21(DSCP 18)
af22	Assured Forwarding PHB AF22(DSCP 20)
af23	Assured Forwarding PHB AF23(DSCP 22)
af31	Assured Forwarding PHB AF31(DSCP 26)
af32	Assured Forwarding PHB AF32(DSCP 28)
af33	Assured Forwarding PHB AF33(DSCP 30)
af41	Assured Forwarding PHB AF41(DSCP 34)
af42	Assured Forwarding PHB AF42(DSCP 36)
af43	Assured Forwarding PHB AF43(DSCP 38)
be	Default PHB(DSCP 0) for best effort traffic
cs1	Class Selector PHB CS1 precedence 1(DSCP 8)
cs2	Class Selector PHB CS2 precedence 2(DSCP 16)
cs3	Class Selector PHB CS3 precedence 3(DSCP 24)
cs4	Class Selector PHB CS4 precedence 4(DSCP 32)
cs5	Class Selector PHB CS5 precedence 5(DSCP 40)
cs6	Class Selector PHB CS6 precedence 6(DSCP 48)
cs7	Class Selector PHB CS7 precedence 7(DSCP 56)
ef	Expedited Forwarding PHB(DSCP 46)
va	Voice Admit PHB(DSCP 44)

action	Setup action
dmac	Setup matched DMAC
frame-type	Setup matched frame type
interface	Interfaces
last	Place QCE at the end
next	Place QCE before the next QCE ID
smac	Setup matched SMAC. If 'qos qce addr destination' is set, this parameter specifies the DMAC
tag	Setup tag options
<0-7>	Specific class of service
dpl	Specify drop precedence level
<0-1>	0: means drop precedence level 0(default); 1: means drop precedence level 1
<cr>	

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 server(s).

SYNTAX

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

Parameters

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

The 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:** 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

ring-to-ring active	role value active.
ring-to-ring backup	role value backup.
ring-to-ring 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

alarm	Configure an RMON alarm
event	Configure an RMON event
<1-65535>	Alarm entry ID
<WORD>	MIB object to monitor
<1-2147483647>	Sample interval
absolute	Test each sample directly
delta	Test delta between samples
rising-threshold	Configure the rising threshold
<-2147483648-2147483647>	rising threshold value
<0-65535>	Event to fire on rising threshold crossing
falling-threshold	Configure the falling threshold
<-2147483648-2147483647>	falling threshold value
rising	Trigger alarm when the first value is larger than the rising threshold
falling	Trigger alarm when the first value is less than the falling threshold
both	Trigger alarm when the first value is larger than the rising threshold or less than the falling threshold (default)
ifInOctets	The total # of octets received on the interface, including framing characters
ifInUcastPkts	The # of uni-cast packets delivered to a higher-layer protocol

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

agent-ip	The agent IP address used as agent-address in UDP datagrams. Defaults to IPv4 loopback address.
ipv4	ipv4 address
ipv6	ipv6 address
<ipv4_addr>	ipv6 address
<ipv6_addr>	ipv4 address
collector-address	Collector address
collector-port	Collector UDP port
<1-65535>	Port Number
max-datagram-size	Maximum datagram size.
<200-1468>	Bytes
timeout	Receiver timeout measured in seconds. The switch decrements the timeout once per second, and as long as it is non-zero, the receiver receives samples. Once the timeout reaches 0, the receiver and all its configuration is reset to defaults.
<0-2147483647>	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

deadtime	Time to stop using a TACACS+ server that doesn't respond
host	Specify a TACACS+ server
key	Set TACACS+ encryption key
timeout	Time to wait for a TACACS+ server to reply
<Minutes : 1-1440>	Time in minutes
<Key : line1-63>	The shared key
<Seconds : 1-1000>	Wait time in seconds before server is considered to be dead.
<word1-255>	Hostname or IP address
<ipv4_ucast>	IPv4 address
<ipv6_ucast>	IPv6 address
port	TCP port for TACACS+ server
<0-65535>	TCP port number
<word-63>	The UNENCRYPTED (Plain Text) secret key. Note that you have no chance to get the Plain Text secret key after this command. The system will always display the ENCRYPTED password.
encrypted	Specifies an ENCRYPTED secret key will follow
unencrypted	Specifies an UNENCRYPTED secret key will follow
<word4-224>	The ENCRYPTED (hidden) secret key. Notice the ENCRYPTED secret key will be decoded by system internally. You cannot directly use it as same as the Plain Text and it is not human-readable text normally.
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

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

EXAMPLE

```
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

<66-86400> advertising duration

<1-255> 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)#
```

username

Establish User Name Authentication.

SYNTAX

```
username <username> privilege <priv> password encrypted <ency_password>
```

```
username <username> privilege <priv> password none
```

```
username <username> privilege <priv> password unencrypted <password>
```

Parameters

<word31>	User name allows letters, numbers and underscores
privilege	Set user privilege level
<0-15>	User privilege level
password	Specify the password for the user
encrypted	Specifies an ENCRYPTED password will follow
none	NULL password
unencrypted	Specifies an UNENCRYPTED password will follow
< line31>	The UNENCRYPTED (Plain Text) user password. Any printable characters including space is accepted. Notice that you have no change to get the Plain Text password after this command. The system will always display the ENCRYPTED password.
<word4-44>	The ENCRYPTED (hidden) user password. Notice the ENCRYPTED password will be decoded by system internally. You cannot directly use it as same as the Plain Text and it is not human-readable text normally.

EXAMPLE

```
SISPM1040-384-LRT-C(config)# privilege 15 password unencrypted Bulley  
SISPM1040-384-LRT-C(config)# username BobB privilege 15 password encrypted  
Boffrey123!@#11111111111111111111111111111111111111111111111111111111111111111111  
SISPM1040-384-LRT-C(config)#
```

Message: % *The UNENCRYPTED password is not accepted*

vlan

Set VLAN parameters.

SYNTAX

vlan <vlist>

vlan ethertype s-custom-port <etype>

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

Parameters

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

EXAMPLE

```
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

vlan	Vlan for voice traffic
aging-time	Set secure learning aging time
<10-10000000>	Aging time, 10-10000000 seconds
class	Set traffic class
<0-7>	Traffic class value
oui	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).
<oui>	OUI value
description	Set description for the OUI
<line32>	Description line
vid	Set VLAN ID
<vlan_id>	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

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

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**

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

100kbps	100k bits per second
< 1~16>	Rate limiter ID
pps	Packets per second
<0-10000>	Rate value
100kbps	100k bits per second
pps	Packets per second
<0-3276700>	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
action	Access list action
dmac-type	The type of destination MAC address
frametype	Frame type
ingress	Ingress
logging	Logging frame information
lookup	Second lookup
mirror	Mirror frame to destination mirror port
next	insert the current ACE before the next ACE ID
policy	Policy
rate-limiter	Rate limiter
redirect	Redirect frame to specific port

shutdown	Shutdown incoming port
tag	Tag
tag-priority	Tag priority
vid	VID field
deny	Deny
filter	Filter
permit	Permit
any	Don't-care the type of destination MAC address
broadcast	Broadcast destination MAC address
multicast	Multicast destination MAC address
unicast	Unicast destination MAC address
any	Don't-care the frame type
arp	Frame type of ARP
etype	Frame type of etype
ipv4	Frame type of IPv4
ipv4-icmp	Frame type of IPv4 ICMP
ipv4-tcp	Frame type of IPv4 TCP
ipv4-udp	Frame type of IPv4 UDP
ipv6	Frame type of IPv6
ipv6-icmp	Frame type of IPv6 ICMP
ipv6-tcp	Frame type of IPv6 TCP
ipv6-udp	Frame type of IPv6 UDP
interface	Select an interface to configure
<port_type>	Gigabitethernet
*	All switches or All ports
Gigabitethernet	1 Gigabit Ethernet port
<port_type_id>	Port ID in the format of switch-no/port-no ex, 1/1-8 for Gigabitethernet
<port_type>	* or Gigabitethernet
<port_type_list>	Port list in 1/1-8
any	Don't-care the ingress interface
<0-255>	Policy ID
policy-bitmask	The bitmask for policy ID
<0x0-0xFF>	The value of policy bitmask
<1-4095>	The value of VID field
<0-7>	The value of tag priority

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**

Command	Function
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

cos-dscp	Map for cos to dscp
dscp-classify	Map for dscp classify enable
dscp-cos	Map for dscp to cos
dscp-egress-translation	Map for dscp egress translation
dscp-ingress-translation	Map for dscp ingress translation
dpl	Specify drop precedence level
<Dpl : 0~1>	Specific drop precedence level or range
dscp	Specify DSCP
<DscpNum : 0-63>	Specific DSCP
cos	Specify class of QoS
<Cos : 0-7>	Specific class of QoS
af11	Assured Forwarding PHB AF11(DSCP 10)

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

EXAMPLE

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


default	Keep default class of service
<Dpl : 0-1>	Specific drop precedence level
default	Keep default drop precedence level
<Dscp : 0-63>	Specific DSCP
af11	Assured Forwarding PHB AF11(DSCP 10)
af12	Assured Forwarding PHB AF12(DSCP 12)
af13	Assured Forwarding PHB AF13(DSCP 14)
af21	Assured Forwarding PHB AF21(DSCP 18)
af22	Assured Forwarding PHB AF22(DSCP 20)
af23	Assured Forwarding PHB AF23(DSCP 22)
af31	Assured Forwarding PHB AF31(DSCP 26)
af32	Assured Forwarding PHB AF32(DSCP 28)
af33	Assured Forwarding PHB AF33(DSCP 30)
af41	Assured Forwarding PHB AF41(DSCP 34)
af42	Assured Forwarding PHB AF42(DSCP 36)
af43	Assured Forwarding PHB AF43(DSCP 38)
be	Default PHB(DSCP 0) for best effort traffic
cs1	Class Selector PHB CS1 precedence 1(DSCP 8)
cs2	Class Selector PHB CS2 precedence 2(DSCP 16)
cs3	Class Selector PHB CS3 precedence 3(DSCP 24)
cs4	Class Selector PHB CS4 precedence 4(DSCP 32)
cs5	Class Selector PHB CS5 precedence 5(DSCP 40)
cs6	Class Selector PHB CS6 precedence 6(DSCP 48)
cs7	Class Selector PHB CS7 precedence 7(DSCP 56)
default	Keep default DSCP
ef	Expedited Forwarding PHB(DSCP 46)
va	Voice Admit PHB(DSCP 44)
any	Any
broadcast	Broadcast
multicast	Multicast
unicast	Unicast
etype	Ethernet frames
ipv4	IPv4 frames
ipv6	IPv6 frames
llc	LLC frames
snap	SNAP frames

<Etype : 0x600-0x7ff,0x801-0x86dc,0x86de-0xffff>	Specific EtherType
interface	Interfaces
<Next : 1-256>	The next QCE ID
<Pcp : pcp>	Specific PCP (0-7) or range (0-1, 2-3, 4-5, 6-7, 0-3 or 4-7)
<Smac : mac_addr>	Specific SMAC (XX-XX-XX-XX-XX-XX)
tagged	Tagged frames only
untagged	Untagged frames only
<Vid : vlan_list>	Specific VLAN ID or range
interface	Interfaces
Gigabitethernet	1 Gigabit Ethernet Port
<PORT_LIST>	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 Storm policer.

SYNTAX

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

Parameters

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

<GroupName : word32>	group name
model	security model
any	any security model
v1	v1 security model
v2c	v2c security model
v3	v3 security model
level	security level
auth	authNoPriv Security Level
noauth	noAuthNoPriv Security Level
priv	authPriv Security Level

read	specify a read view for the group
write	specify a write view for the group
<ViewName : word255>	read view name
<WriteName : word255>	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

v2c	SNMPv2c
<Community : word127>	Community word
ro	Read only
rw	Read write
v3	SNMPv3
<Community : word127>	Community word
<ipv4_addr>	IPv4 address
<ipv4_netmask>	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

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

local	Set SNMP local engine ID
<Engineid : word10-32>	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

<word32>	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

model	security model
v1	v1 security model
v2c	v2c security model
v3	v3 security model
name	security user
<SecurityName : word32>	security user name
group	security group
<GroupName : word32>	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

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

v1	SNMPv1
v2c	SNMPv2c
v3	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

<ViewName : word32>	MIB view name
<OidSubtree : word255>	MIB view OID
include	Included type from the view
exclude	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 bpd-filter

spanning-tree edge bpd-guard

Parameters

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

bpd-guard Enable BPDU guard

EXAMPLE

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

mode

Configure STP protocol mode.

SYNTAX

spanning-tree mode { stp | rstp | mstp }

Parameters

mstp Multiple Spanning Tree (802.1s)

rstp Rapid Spanning Tree (802.1w)

stp 802.1D Spanning Tree

EXAMPLE

```
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

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

interval	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

hold-count	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)#
```

4 Configure Interface Commands

The Interface Config mode commands are listed and described below.

<u>Command</u>	<u>Description</u>
*	All switches or All ports
GigabitEthernet	1 Gigabit Ethernet Port
vlan	VLAN interface configurations
access-list	Access list
aggregation	Create an aggregation
debug	Debugging functions
description	Configures port description
do	To run exec commands in config mode
dot1x	IEEE Standard for port-based Network Access Control
duplex	Interface duplex
end	Go back to EXEC mode
evc	Ethernet Virtual Connections
event	Configure port event settings
excessive-restart	Restart backoff algorithm after 16 collisions
exit	Exit from current mode
flowcontrol	Traffic flow control.
frame-length-check	Drop frames with mismatch between EtherType/Length field and actually payload size.
green-ethernet	Green ethernet (Power reduction)
gvrp	Enable GVRP on interface or interfaces
help	Description of the interactive help system
ip	Internet Protocol
ipv6	IPv6 configuration commands
lacp	Enable LACP on this interface
link-oam	Enable or Disable(when the no keyword is entered) Link OAM on the interface
lldp	LLDP configurations.
loop-protect	Loop protection configuration on port
mac	MAC keyword
mtu	Maximum transmission unit
mvr	Multicast VLAN Registration configuration
no	Negate a command or set its defaults
poe	Power Over Ethernet.
port-security	Enable/disable port security per interface.

ptp	Precision time Protocol (1588)
pvlan	Private VLAN
qos	Quality of Service
rmon	Configure Remote Monitoring on an interface
sflow	Statistics flow.
shutdown	Shutdown of the interface.
spanning-tree	Spanning Tree protocol
speed	Configures interface speed.
switchport	Switching mode characteristics
udld	UDLD configurations.

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) v7.20.0121
Build Date   : 2022-07-27T16:26:55+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 }

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.
dot1x	IEEE Standard for port-based Network Access Control

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	Smtip
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
<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 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.

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.

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).
<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)
force	Set mode to PoE Force
<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>	[0-3] Clock instance
announce	Set announce interval and timeout
delay-asymmetry	Set path delay asymmetry
delay-mechanism	Set delay mechanism
delay-req	Set pdelay req interval
egress-latency	Set port egress latency
ingress-latency	Set port ingress latency
internal	enable as an internal interface
sync-interval	Set sync interval
interval	Set announce interval
timeout	Set Announce timeout
<-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

Error getting port data instance 0 port 2

pvlan

Configure Private VLAN.

SYNTAX

pvlan <pvlan_list>

pvlan isolation

Parameters

<range_list> list of PVLANS. Range is from 1 to number of ports.

isolation Port isolation

EXAMPLE

```
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	Rewrite DSCP field using classified DSCP and DPL=0 remapped through global dscp-egress-translation map
remap-dp	Rewrite DSCP field using classified DSCP and DPL remapped through global dscp-egress-translation map
rewrite	Rewrite DSCP field with classified DSCP value (no translation)
cos-tag	Map for cos to tag configuration
tag-cos	Map for tag to cos configuration
cos	Specify class of service
<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 | 100fx-ams | 1000x | 1000x-ams | sfp-auto-ams | 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	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).
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)#
```

5 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 345.

SYNTAX

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

Parameters

<url_file> File in FLASH or on TFTP server. 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.

running-config Currently running configuration
startup-config Startup configuration
| Output modifiers
merge merge source file with running-config
replace replace running-config with source file, default action
syntax-check Perform syntax check on source configuration
save-host-key Enable saving the host key.
ftp-active Keep FTP active
<cr>

EXAMPLE

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

6 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#
```

7 Dir Commands

dir

Directory of all files in flash: file system.

SYNTAX

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

Parameters

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

EXAMPLE

```
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#
```

8 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#
```

9 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#
```

10 DOT1x Commands

dot1x

IEEE Standard for port-based Network Access Control.

SYNTAX

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

Parameters

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

EXAMPLE

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

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

11 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#
```


12 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 /jeff Sherman/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#
```

13 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)

debug	Debugging functions.
port-security	Port security (psec limit).
ptp	Misc non persistent 1588 settings.
terminal	Set terminal line parameters.
interrupt-monitor	Print out of reception of the selected interrupt source.
ipv6	IPv6 configuration commands
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)#
```

14 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
```

15 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#
```

16 Reload Commands

reload

Reload system.

Syntax

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

Parameters

defaults Reload defaults without rebooting.

warm Reload warm (CPU restart only).

keep-ip Attempt to keep existing VLAN1 IP setup.

<cr>

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#
```

17 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#
```


18 Show Commands

show

Display running system information.

Table : SHOW Commands

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

monitor	Monitoring different system events
mrp	Show MRP Status
mvr	Multicast VLAN Registration configuration
ntp	Configure NTP
platform	Platform configuration
poe	Power Over Ethernet.
port-security	Port Security status - Port Security is a module with no direct configuration.
privilege	Display command privilege
process	process
ptp	Precision time Protocol (1588)
pvlan	PVLAN configuration
qos	Quality of Service
radius-server	RADIUS configuration
rapid-ring	Display Rapid Ring configurations
rmon	RMON statistics
running-config	Show running system information
sflow	Statistics flow.
sntp	Show email information
snmp	Display SNMP configurations
spanning-tree	STP Bridge
switchport	Display switching mode characteristics
system	system
tacacs-server	TACACS+ configuration
terminal	Display terminal configuration parameters
udld	Uni Directional Link Detection (UDLD) configuration, statistics and status
upnp	Display UPnP configurations
user-privilege	Users privilege configuration
users	Display information about terminal lines
version	System hardware and software status
vlan	VLAN status
voice	Voice appliance attributes
web	Web

aaa

Display Login methods.

SYNTAX

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

Parameters

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

EXAMPLE

```
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

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

EXAMPLE

```
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

	Output modifiers
<cr>	

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 History 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 terminal 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	FopNr	
FopNoAps									
1	Disable	Ok	Ok	NR 0 0	NR 0 0	False	False	False	True
2	Disable	Ok	Ok	NR 0 0	NR 0 0	False	False	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
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 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
verify	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 VLAN4096 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

arp	Address Resolution Protocol
dhcp	Dynamic Host Configuration Protocol
domain	Default domain name
gateway	Gateway address binding interface
http	Hypertext Transfer Protocol
igmp	Internet Group Management Protocol
interface	IP interface status and configuration
link-local	Link-Local address binding interface
name-server	Domain Name System
route	Display the current IP routing table
source	source command
ssh	Secure Shell
statistics	Traffic statistics
telnet	TELNET
verify	verify command
inspection	ARP inspection
interface	arp inspection entry interface config
<port_type>	Gigabitethernet
<port_type_list>	Port list in 1/1-8 for Gigabitethernet
vlan	VLAN configuration
<vlan_list>	Select a VLAN id to configure
entry	arp inspection entries
dhcp-snooping	learn from dhcp snooping
static	setting from static entries
relay	DHCP relay agent configuration
snooping	DHCP snooping
pool	DHCP pools information
server	HTTP web server
secure	Secure
status	Status
igmp	Internet Group Management Protocol
snooping	Snooping IGMP
vlan	Search by VLAN
<vlan_list>	VLAN identifier(s): VID

group-database	Multicast group database from IGMP
sfm-information	Including source filter multicast information from IGMP
detail	Detail running information/statistics of IGMP snooping
mrouter	Multicast router port status in IGMP
detail	Detail running information/statistics of IGMP snooping
brief	Brief IP interface status
binding	ip source binding
dhcp-snooping	learn from dhcp snooping
system	IPv4 system traffic
icmp	IPv4 ICMP traffic
icmp-msg	IPv4 ICMP traffic for designated message type
<0~255>	ICMP message type ranges from 0 to 255
source	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 AAAAE2VjZHNhLXNoYTItbmlzdHA1MjEAAAABmlzdHA1MjEAAACFBAC
u5gfqCVLlz3IsQVTsnb75Bgmw6vDmdznurjiaWhLTpXfyJhSGlkn59IkYPTzDoSkBsV+g2LmJsxiMeE
50zGb2wG0swGFaEfrURlXUiiI+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

profile	IPMC profile configuration
range	A range of IPv4/IPv6 multicast addresses for the profile
<ProfileName : word16>	Profile name in 16 characters
detail	Detail information of a profile
<EntryName : word16>	Range entry name in 16 characters
 	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 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

dhcp-client	Manage DHCPV6 client service
interface	Select an interface to configure
vlan	VLAN of IPv6 interface
<vlan_list>	IPv6 interface VLAN list
brief	Brief summary of IPv6 status and configuration
statistics	Traffic statistics
mld	Multicast Listener Discovery
snooping	Snooping MLD
vlan	Search by VLAN
<vlan_list>	VLAN identifier(s): VID
group-database	Multicast group database from MLD
interface	Search by port
<port_type>	Gigabitethernet
*	All Switches or All ports
Gigabitethernet	1 Gigabit Ethernet Port
<port_type_list>	Port list in 1/1-8 for Gigabitethernet
sfm-information	Including source filter multicast information from MLD
detail	Detail running information/statistics of MLD snooping
mrouter	Multicast router port status in MLD
neighbor	IPv6 neighbors
route	IPv6 routes
statistics	Traffic statistics
system	IPv6 system traffic
icmp	IPv6 ICMP traffic

icmp-msg 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

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

EXAMPLE

```
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
interface	Interface status and configuration
link-monitor	Display link-monitor status parameters
statistics	Display statistics parameters
status	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

eee	Display LLDP local and neighbor EEE information.
interface	Interface to display.
med	Display LLDP-MED neighbors information.
neighbors	Display LLDP neighbors information.
statistics	Display LLDP statistics information.
media-vlan-policy	Display media vlan policies.
remote-device	Display remote device LLDP-MED neighbors information.
<0~31>	List of policies.
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
 	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 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      TX/RX Mode   CDP Aware   Port Descr   Sys Name     Sys Descr    Sys Capa    Mgmt
Addr
-----
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

interface	Interface status and 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

```
SISPM1040-362-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

address-table	Mac Address Table
conf	User added static mac addresses
static	All static mac addresses
aging-time	Aging time
learning	Learn/disable/secure state
count	Total number of mac addresses
interface	Select an interface to configure
<port_type>	Gigabitethernet
*	All switches or All ports
Gigabitethernet	1 Gigabit Ethernet Port
<port_type_list>	Port list in 1/1-8
address	MAC address lookup
<mac_addr>	48 bit MAC address: xx:xx:xx:xx:xx:xx
vlan	VLAN lookup
<vlan_id>	VLAN IDs 1-4095
vlan	Addresses in this VLAN
<vlan_id>	VLAN IDs 1-4095
interface	Select an interface to configure
<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 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 [305](#) 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

vlan	Search by VLAN
<v_vlan_list>	MVR multicast VLAN list
name	Search by MVR name
<word16>	MVR multicast VLAN name
group-database	Multicast group database from MVR
interface	Search by port
<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
sfm-information	Including Source Filter Multicast information from MVR
detail	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 NTP 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 config [ interface ( <port_type> [ <v_port_type_list> ] ) ]
show poe power-delay [ interface ( <port_type> [ <v_port_type_list> ] ) ]
show poe profile [ id <has_id> ]
show poe reboot
show poe status [ interface ( <port_type> [ <v_port_type_list> ] ) ]
show poe { auto-check | auto-power-reset } [ interface ( <port_type> [ <v_port_type_list> ] ) ]

```

Parameters

auto-power-reset	Show PoE Auto Power Reset configuration.
config	Display PoE (Power Over Ethernet) config for the switch.
power-delay	Display PoE (Power Over Ethernet) power delay for the switch.
profile	Display PoE scheduling profile
reboot	Display PoE reboot scheduling
status	Display PoE (Power Over Ethernet) status for the switch.

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]
Total Power Used :    3.0 [W]
Total Current Used :  65 [mA]
Capacitor Detection : No
SISPM1040-384-LRT-C#

```

EXAMPLE 2

```
SISPM1040-384-LRT-C# show poe auto-power-reset
Ping Check : Enabled
Port Ping IP Address Startup Interval Retry Failure Log Failure Action Reboot Max.Reboot
      Time Time Time error=0,total=0 Reboot Remote PD Time Times
-----
1 192.168.1.77 40 20 3 error=0,total=0 Reboot Remote PD 5 3
2 192.168.1.78 45 30 2 error=0,total=0 Reboot Remote PD 10 2
3 192.168.1.90 50 30 1 error=0,total=0 Nothing 15 1
4 192.168.1.100 55 20 3 error=0,total=0 Reboot Remote PD 15 2
5 0.0.0.0 60 30 3 error=0,total=0 Nothing 15 3
6 0.0.0.0 60 30 3 error=0,total=0 Nothing 15 3
7 0.0.0.0 60 30 3 error=0,total=0 Nothing 15 3
8 0.0.0.0 60 30 3 error=0,total=0 Nothing 15 3
GigabitEthernet 1/9 does not have PoE support
GigabitEthernet 1/10 does not have PoE support
GigabitEthernet 1/11 does not have PoE support
GigabitEthernet 1/12 does not have PoE support
SISPM1040-384-LRT-C#
```

EXAMPLE 3

```
SISPM1040-362-LRT# show poe config
Primary Power Supply [W] : 120

Port Mode Schedule Priority Max. Power [W]
-----
1 Enabled Disable Low 30.0
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
                                Used
[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 Allocated : 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
begin	Begin with the line that matches
exclude	Exclude lines that match
include	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 consoleflow 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) v7.20.0121
Build Date   : 2022-07-27T16:26:55+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)OCX0 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

interface	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
maps	Global QoS Maps/Tables
qce	QoS Control Entry
storm	Storm policer
wred	Weighted Random Early Discard
cos-dscp	Map for cos to dscp
dscp-classify	Map for dscp classify enable
dscp-cos	Map for dscp to cos
dscp-egress-translation	Map for dscp egress translation
dscp-ingress-translation	Map for dscp ingress translation
<Qce : 1-256>	QCE ID
 	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 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
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
  Timeout    : 45 seconds
  Retransmit  : 222 times
  Key        : 83c2e917580b1a173ed21c5d656777e5e9855d20452512b52071b872d3eafc7d6
3adbd7f2f537297b4de9c492f4fb9c5faaf0a921fabbb8bb863a8897ca86d8d4a0a1d9c6b239b15c
```

```
1963ec9fd266383
RADIUS Server #3:
  Host name   : radius3
  Auth port   : 1812
  Acct port   : 1813
  Timeout     : 1 seconds
  Retransmit  : 99 times
  Key         : bdabbbff5dbc1be5c4056ddbe190d3eaeffea52929d7c67eedc210bf334447bf5e
3d2ad5fffc086570f7b02e70e2999af7e0a0ade5e6d51c465bc3f05f3ef18efd
RADIUS Server #4:
  Host name   : radius4
  Auth port   : 1812
  Acct port   : 1813
  Timeout     : 1 seconds
  Retransmit  : 9 times
  Key         : 3c64886cdb86d395c8a9bda63bea4a7715f22ddcd97cfeb81cd7ad6187d7f6943
d2920fd96e0aab9395048a0999bc5e455820ead44faa6e14cae179a974e1233
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
148cec5c955b4f036d2768285f0db0416c37bcd11865770ba65e3d3d73dbc1873cb4f19f0591737
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#
```

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

alarm	Display the RMON alarm table
event	Display the RMON event table
history	Display the RMON history table
statistics	Display the RMON statistics table
<1~65535>	Alarm/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
```

```
etherStatsPkts65to127Octets : 16
```

```
etherStatsPkts128to255Octets : 2
```

```
etherStatsPkts256to511Octets : 22021
```

```
etherStatsPkts512to1023Octets : 20
```

```
etherStatsPkts1024to1518Octets: 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

all-defaults	Include most/all default values
feature	Show configuration for specific feature
interface	Show specific interface(s)
line	Show line settings
vlan	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
<port_type_list>	Port list in 1/1-8 for Gigabitethernet
<vlan_list>	List of VLAN numbers
console	Console
vty	VTY
<range_list>	List of console/VTYs


```
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 !@#%^&*( -<, > . ? / abcdefgABCDEFGHSsddsfcccnbxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
-- 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_licli_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 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 Address 1 : jeffs@transition.com
Email Address 2 : support@csd.com
Email Address 3 :
Email Address 4 :
Email Address 5 :
Email Address 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
interface	Interface event group
aaa	AAA event group
security-to-group	security-to-group configuration
<SecurityName : word32>	security group name

user	User
<UserName : word32>	Security user name
<EngineId : word10-32>	Security Engine ID
view	MIB view configuration
<ViewName : word32>	MIB view name
<OidSubtree : word255>	MIB view OID
 	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 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

summary	STP summary
active	STP active interfaces
interface	Choose port
<port_type>	Gigabitethernet
*	All switches or All ports
Gigabitethernet	1 Gigabit Ethernet Port
<port_type_list>	Port list in 1/1-8 for Gigabitethernet
detailed	STP statistics
interface	List of port type and port ID, ex, 1/1-8
mst	Configuration
configuration	STP bridge instance no (0-7, CIST=0, MST2=1...)
<0-7>	Choose port
<port_type >	GigabitEthernet
*	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

forbidden	Lookup VLAN Forbidden port entry.
name	name - Show forbidden access for specific VLAN name.
vlan	vid - Show forbidden access for specific VLAN id.
<vlan_id>	VLAN id
<word>	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          : 2011-01-01T17:39:59+00:00
System Uptime        : 17:39:59
Bootloader Version   : v1.20
Firmware Version     : v7.20.0121 2022-07-27
PoE Firmware Version : 104-001
Hardware Version     : v1.01
Mechanical Version   : v1.01
Serial Number        : A074118AR1800424
MAC Address          : 00-c0-f2-49-be-22
Memory               : Total=44925 KBytes, Free=24785 KBytes, Max=23985 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          : 37(C) ; 98(F)
Temperature 2          : 42(C) ; 107(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
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<LINE>	String to match output lines

EXAMPLE

```
SISPM1040-362-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
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 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
begin	Begin with the line that matches
exclude	Exclude lines that match
include	Include lines that match
<LINE>	String to match output lines

EXAMPLE

```

SISPM1040-362-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) v7.20.0121
Build Date   : 2022-07-27T16:26:55+08:00
SISPM1040-384-LRT-C# show version

MEMORY       : Total=44925 KBytes, Free=24790 KBytes, Max=23984 KBytes
FLASH        : 0x40000000-0x41ffffff, 512 x 0x10000 blocks
MAC Address   : 00-c0-f2-49-be-22
Previous Restart : Warm

System Contact :
System Name    : SISPM1040-384-LRT-C
System Location :
System Time    : 2011-01-01T01:00:12+00:00
System Uptime  : 00:59:25

Active Image
-----
Image         : (managed)
Version      : SISPM1040-384-LRT-C (standalone) v7.20.0121
Date         : 2022-07-27T16:26:55+08:00

Alternate Image
-----
Image         : (managed.bk)
Version      : SISPM1040-384-LRT-C (standalone) v7.20.0075
Date         : 2021-07-12T19:32:36+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

id	VLAN status by VLAN id
<vlan_list>	VLAN IDs 1-4095
name	VLAN status by VLAN name
<vword32>	A VLAN name
brief	VLAN summary information
protocol	Protocol-based VLAN status
eth2	Ethernet protocol based VLAN status
<0x600-0xffff>	Ether Type(Range: 0x600 - 0xFFFF)
arp	Ether Type is ARP
ip	Ether Type is IP
ipx	Ether Type is IPX
at	Ether Type is AppleTalk
snap	SNAP-based VLAN status
<0x0-0xfffff>	SNAP OUI (Range 0x000000 - 0FFFFFFF)
rfc_1042	SNAP OUI is rfc_1042
snap_8021h	SNAP OUI is 8021h
<0x0-0xffff>	PID (Range: 0x0 - 0xFFFF)
llc	LLC-based VLAN status
<0x0-0xff>	DSAP (Range: 0x00 - 0xFF)
<0x0-0xff>	SSAP (Range: 0x00 - 0xFF)
admin	Show the VLANs configured by administrator.
all	Show all VLANs configured.

combined	Show the VLANs configured by a combination.
conflicts	Show VLANs configurations that has conflicts.
erps	Show the VLANs configured by ERPS.
gvrp	Show the VLANs configured by GVRP.
interface	Show the VLANs configured for a specific interface(s).
mep	Show the VLANs configured by MEP.
mstp	Show the VLANs configured by MSTP.
mvr	Show the VLANs configured by MVR.
nas	Show the VLANs configured by NAS.
rmirror	Show the VLANs configured by Remote mirroring.
vcl	Show the VLANs configured by VCL.
voice-vlan	Show the VLANs configured by Voice VLAN.
interface	Show the VLANs configured for a specific interface(s).
<port_type >	GigabitEthernet
Gigabitethernet	1 Gigabit Ethernet Port
<port_type_list>	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
GVRP
MVR
Voice VLAN
MSTP
ERPS

```

-- 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

privilege	Web privilege				
group	Web privilege group				
<word>	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
consoleflow	level	sFlow			
level	Web privilege group level				
	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 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 consoleflow level
```

```

Group Name          Privilege Level
                   CRO CRW SRO SRW
-----
consoleflow        5 10 5 10

```

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

CRO = Configuration Read Only

CRW = Configuration Read + Write

SRO = Status Read Only

SRW = Status Read + Write

19 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

editing	Enable command line editing
exec-timeout	Set the EXEC timeout
help	Description of the interactive help system
history	Control the command history function
length	Set number of lines on a screen
width	Set width of the display terminal
<0-1440>	Timeout in minutes
<0-3600>	Timeout in seconds
size	Set history buffer size
<0-32>	Number of history commands, 0 means disable
<0 or 3-512>	Number of lines on screen (0 for no pausing)
<0 or 40-512>	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#
```

20 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

dhcp	Dhcp commands
retry	Restart the DHCP query process
interface	Interface
vlan	Vlan interface
<vlan_id>	Vlan ID
dhcp-client	Manage DHCPV6 client service
restart	Restart DHCPV6 client service
interface	Select an interface to configure
vlan	VLAN of IPv6 interface
<vlan_list>	IPv6 interface VLAN list
<cr>	

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#
```

21 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

ip	IP
<word1-255>	destination address
nqueries	Specify number of probe packets
<1-10>	1-10; Default is 3
protocol	Specify protocol including icmp, udp and tcp
icmp	icmp/udp/tcp; Default is icmp
tcp	Use TCP protocol
udp	Use UDP protocol
ttl	Specify max TTL
wait	Specify wait time
<1-255>	1-255; Default is 30
<1-60>	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#
```

22 DHCP Per Port

You can configure DHCP Per Port via the CLI and Web UI. The DHCP Per Port factory default mode is Disabled. See the *Web User Guide* for web UI mode operation.

The switch's DHCP server assigns IP addresses. Clients get IP addresses in sequence and the switch assigns IP addresses to on a per-port basis starting from the configured IP range. For example, if the IP address range is configured as 192.168.10.20 - 192.168.10.37 with one DHCP device connected to port 1, the client will always get IP address 192.168.10.20, then port 3 is always distributed IP address 192.168.10.22, even if port 2 is an empty port (because port 2 is always distributed IP address 192.168.10.21).

The switch does not allow a DHCP per Port pool to include the switch's address.

IP address assigned range and VLAN 1 should stay in the same subnet mask.

The configurable IP address range is allowed to configure over 18 IP addresses, but the switch always assigns one IP address per port connecting device.

The DHCP Per Port function is only supported on VLAN 1.

When the DHCP Per Port function is enabled, the switch software will automatically create the related DHCP pool named "DHCP_Per_Port".

Once the DHCP Per Port function is enabled on one switch, IPv4 DHCP client at VLAN1 mode (DMS DHCP mode), DHCP server mode are all limited to be enabled at the same time (an error message displays if attempted).

If the DHCP server pool has been configured, once you enable the DHCP Per port function that DHCP server pool configuration will be overwritten.

Only for VLAN 1, clients issued DHCP packets will not be broadcast/forwarded to other ports. DHCP packets in others VLANs will be broadcast/forwarded to others ports.

The DHCP Per Port function allows the switch to connect only one DHCP client device.

The DHCP Per Port function is configured and shown using these CLI commands:

```
# show ip dhcp server
(config)# ip dhcp server per-port
(config)# no ip dhcp server per-port
```

The CLI commands to configure and show DHCP Per Port are described below.

Command: Show the current DHCP Server and DHCP Per Port configuration

Syntax: **show ip dhcp server** <cr>

Description: Show if DHCP server is globally enabled or disabled, if all VLANs are disabled or enabled, and if the DHCP server Per Port function is disabled or enabled.

Example: Display 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>

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#
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# show ip dhcp server
DHCP server is globally enabled.
  All VLANs are disabled.
  DHCP server per port is disabled.
SISPM1040-384-LRT-C#(config)# ip dhcp server per-port
SISPM1040-384-LRT-C#(config)# do show ip dhcp server
DHCP server is globally enabled.
  All VLANs are disabled.
  DHCP server per port is enabled.
SISPM1040-384-LRT-C#(config)#
```


23 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).

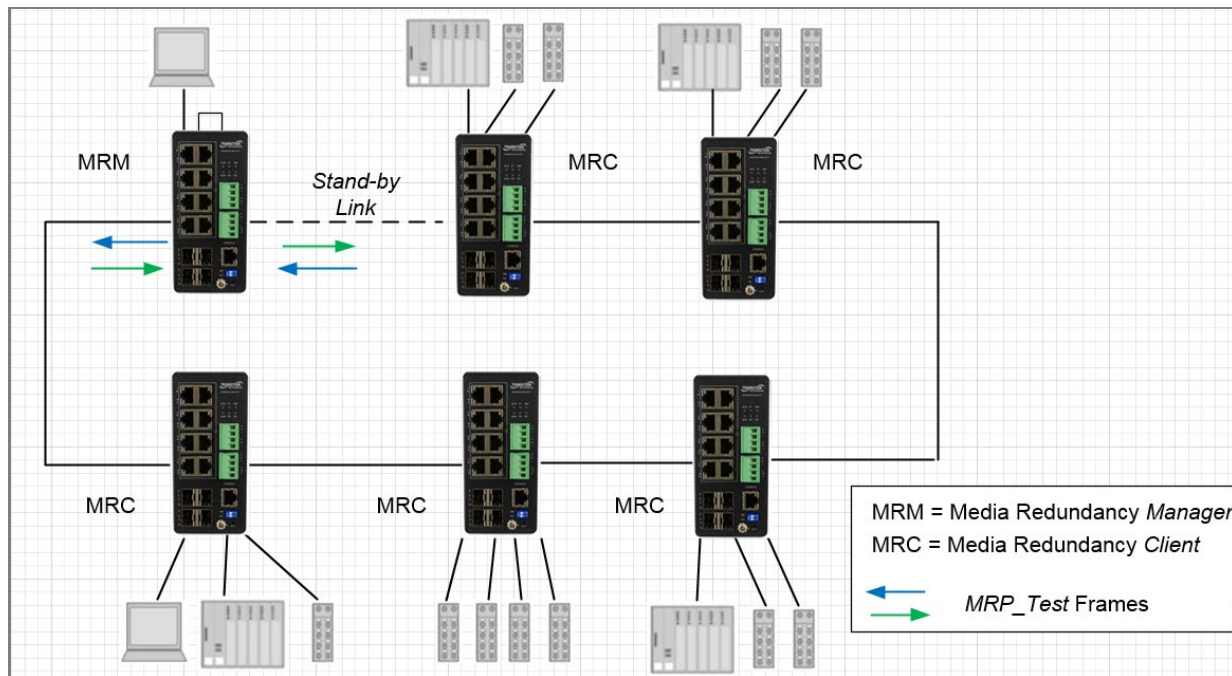


Figure: MRP Sample Setup

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

24 ConsoleFlow Commands

ConsoleFlow is Lantronix on-premise and cloud-hosted management platform that provides a single pane of glass for centralized management and automated monitoring of all deployed Lantronix Remote Environment Management and IoT products, along with real-time notifications, managed APIs and data dashboards.

For more information see <https://www.lantronix.com/consoleflow/>. ConsoleFlow support requires switch firmware v 7.20.0121 or above.

Note: Lantronix Provisioning Manager (LPM) is a software application that provisions, configures, and updates Lantronix Console Managers and IoT Gateways for local site installations and deployments. LPM discovery is enabled by default and is not configurable. For more information see <https://www.lantronix.com/products/lantronix-provisioning-manager/>.

To enter ConsoleFlow Config mode from Config mode:

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

To display the set of available commands enter a ? (question mark):

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

Command Set

active	Sets active connection to Connection <number>
apply	Sets the mode on firmware updates
connection	Sets the connection 1 or connection 2
content	Sets the firmware and configuration check interval
device	Sets the Device ID
do	To run exec commands in config mode
end	Go back to EXEC mode
exit	Exit from current mode
help	Description of the interactive help system
no	Removes device parameter(s)
show	Displays the current configuration
state	Consoleflow state
status	Sets the status update interval

Command Descriptions

Command: **active**

Description: Sets the ConsoleFlow active connection to Connection <number>.

Syntax: **active** connection connection <number>

Parameters: connection Sets active connection to Connection <number>
 <1-2> Sets active connection to Connection <1|2>

Mode: Configure ConsoleFlow mode

Example:

```
SISPM1040-384-LRT-C(config-consoleflow)# active connection connection 1
SISPM1040-384-LRT-C(config-consoleflow)# active connection connection 2
SISPM1040-384-LRT-C(config-consoleflow)#
```

Command: **apply**

Description: Sets the ConsoleFlow mode on configuration updates and firmware updates.

Syntax: **apply** configuration updates disable
apply configuration updates enable
apply firmware updates disable
apply firmware updates enable

Parameters: configuration Sets the action on configuration updates
 firmware Sets the mode on firmware updates
 updates Sets the action on configuration updates
 disable Sets the action on configuration updates to disable
 enable Sets the action on configuration updates to enable
 updates Sets the mode on firmware updates
 disable Restores the default action on new firmware (do not apply)
 enable Automatically apply new firmware

Mode: Configure ConsoleFlow mode

Example:

```
SISPM1040-384-LRT-C(config-consoleflow)# apply configuration updates enable
SISPM1040-384-LRT-C(config-consoleflow)# apply firmware updates enable
SISPM1040-384-LRT-C(config-consoleflow)#
```

Command: **connection**

Description: Sets the ConsoleFlow Connection 1 or Connection 2 parameters.

Syntax: **connection** <con> host <host_name>
connection <con> port <number>
connection <con> secure port disable
connection <con> secure port enable
connection <con> validate certificates disable
connection <con> validate certificates enable

Parameters:

<1-2>	Sets the connection 1 or connection 2
host	Sets the Hostname or IP address of ConsoleFlow
port	Sets the Port of ConsoleFlow
secure	Sets the mode on HTTPS
validate	Sets the mode on certificate validation
<word256>	Sets the Hostname or IP address of ConsoleFlow
<1-65535>	Sets the Port of ConsoleFlow
port	Sets the mode on HTTPS
disable	Disables HTTPS for ConsoleFlow client
enable	Enables HTTPS for ConsoleFlow client
certificates	Sets the mode on certificate validation
disable	Disables certificate validation for ConsoleFlow client
enable	Enables certificate validation for ConsoleFlow client

Mode: Configure ConsoleFlow mode

Example:

```
SISPM1040-384-LRT-C(config-consoleflow)# connection 1 host BobB
SISPM1040-384-LRT-C(config-consoleflow)# connection 1 port 456
SISPM1040-384-LRT-C(config-consoleflow)# connection 1 secure port enable
SISPM1040-384-LRT-C(config-consoleflow)# connection 1 validate certificates enable
SISPM1040-384-LRT-C(config-consoleflow)# connection 2 host TomT
SISPM1040-384-LRT-C(config-consoleflow)# connection 2 port 456
SISPM1040-384-LRT-C(config-consoleflow)# connection 2 secure port disable
SISPM1040-384-LRT-C(config-consoleflow)# connection 2 validate certificates disable
SISPM1040-384-LRT-C(config-consoleflow)#
```


Command: **content**

Description: Sets the firmware and configuration check interval.

Syntax: **content** check interval <hours>

Parameters: check Sets the firmware and configuration check interval
interval Sets the firmware and configuration check interval
<1-56160> Sets the firmware and configuration check interval

Mode: Configure ConsoleFlow mode

Example:

```
SISPM1040-384-LRT-C(config-consoleflow)# content check interval 9000  
SISPM1040-384-LRT-C(config-consoleflow)#
```

Command: **device**

Description: Sets the Device parameters.

Syntax: **device** description <device_desp>
device id <device_id>
device key <device_key>
device name <device_name>

Parameters: description Sets the Device Description
id Sets the Device ID
key Sets the Device Key
name Sets the Device Name
<word256> Sets the Device Description
<word32> Sets the Device ID
<word32> Sets the Device Key
<word256> Sets the Device Name

Mode: Configure ConsoleFlow mode

Example:

```
SISPM1040-384-LRT-C(config-consoleflow)# device description 384-lrt-c  
SISPM1040-384-LRT-C(config-consoleflow)# device id 384-lrt-c  
SISPM1040-384-LRT-C(config-consoleflow)# device key 384-lrt-c  
SISPM1040-384-LRT-C(config-consoleflow)# device name 384-lrt-c  
SISPM1040-384-LRT-C(config-consoleflow)#
```

Command: **do**

Description: To run Exec commands in Config mode.

Syntax: **do** <command>

Parameters: <command> Command to be run

Mode: Configure ConsoleFlow mode

Example:

```
SISPM1040-384-LRT-C(config-consoleflow)# do show ip interface brief
Vlan Address                Method  Status
-----
  1 192.168.1.77/24         Manual  UP
SISPM1040-384-LRT-C(config-consoleflow)#
```

Command: **end**

Description: Go back to EXEC mode.

Syntax: **end** <cr>

Parameters:

Mode: Configure ConsoleFlow mode

Example:

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

Command: **exit**

Description: Exit from current mode.

Syntax: **exit** <cr>

Parameters:

Mode: Configure ConsoleFlow mode

Example:

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

Command: **help**

Description: Description of the interactive help system.

Syntax: **help** <cr>

Parameters:

Mode: Configure ConsoleFlow mode

Example:

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

Command: **no**

Description: Removes a device parameter.

Syntax: **no** device

Parameters:

device	Removes a device parameter.
id	Removes the Device ID
key	Removes the Device Key
name	Removes the Device Name
description	Removes the Device Description

Mode: Configure ConsoleFlow mode

Example:

```
SISPM1040-384-LRT-C(config-consoleflow)# no device description
SISPM1040-384-LRT-C(config-consoleflow)# no device name
SISPM1040-384-LRT-C(config-consoleflow)#
```

Command: **show**

Description: Displays current ConsoleFlow parameters.

Syntax: **show** connection <con>
show statistics
show <cr>

Parameters: connection Shows the ConsoleFlow connection (Connection 1 or Connection 2)
statistics Displays the ConsoleFlow statistics
<1-2> Shows the ConsoleFlow connection (Connection 1 or Connection 2)

Mode: Configure ConsoleFlow mode

Example 1:

```
SISPM1040-384-LRT-C(config-consoleflow)# show connection 1
ConsoleFlow Connection 1 Configuration:
Host : BobB
Port : 456
Secure Port : Enabled
Validate Certificates: Enabled

SISPM1040-384-LRT-C(config-consoleflow)# show connection 2
ConsoleFlow Connection 2 Configuration:
Host : TomT
Port : 456
Secure Port : Enabled
Validate Certificates: Disabled

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

Example 2:

```
SISPM1040-384-LRT-C(config-consoleflow)# show <cr>
ConsoleFlow Configuration:
State : Enabled
Device ID :
Device Key : (Configured)
Device Name :
Device Description :
Status Update Interval : 1 minutes
Content Check Interval : 9000 minutes
```

```
Apply Firmware Updates : Enabled
Apply Configuration Updates : Enabled
Active Connection : Connection 2
Connection 1 Host : BobB
Connection 1 Port : 456
Connection 1 Secure Port : Enabled
Connection 1 Validate Certificates: Enabled

Connection 2 Host : TomT
Connection 2 Port : 456
Connection 2 Secure Port : Enabled
Connection 2 Validate Certificates: Disabled

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

Example 3:

```
SISPM1040-384-LRT-C(config-consoleflow)# show statistics
Client Status : Running
Not registered -
Last Status Update : Not available
Last Content Check : Not available
Available Firmware Updates: Not available
Available Configuration Updates: Not available
SISPM1040-384-LRT-C(config-consoleflow)#
```

Command: **state**

Description: Sets the ConsoleFlow state to enabled or disabled.

Syntax: **state** disable | enable

Parameters: disable Disables the ConsoleFlow client
enable Enables the ConsoleFlow client

Mode: Configure ConsoleFlow mode

Example:

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

Command: **status**

Description: Sets the ConsoleFlow status update interval.

Syntax: **status** update interval <minutes>

Parameters: update Sets the status update interval
interval Sets the status update interval
<1-1440> Sets the status update interval

Mode: Configure ConsoleFlow mode

Example:

```
SISPM1040-384-LRT-C(config-consoleflow)# status update interval 1
SISPM1040-384-LRT-C(config-consoleflow)# status update interval 1440
SISPM1040-384-LRT-C(config-consoleflow)#
```

Appendix A 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

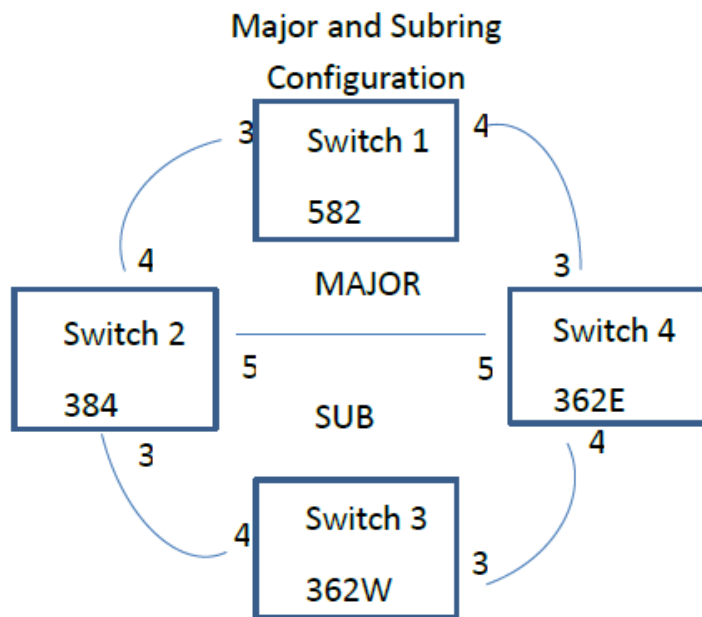
362W : 192.168.1.125

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



VLANs

10,20

APS Data

5

RPL Mode

<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 3 Trunk Tag All 5,10
 Port 4 Trunk Tag All 5,10

STP Port 3 Disable
 Port 4 Disable

MEPs	Instance	Port	VLAN	MAC	MEP ID	Peer MAC	Peer MEP ID
	1	3	10	00-C0-F2-49-39-5F	1	00-40-C7-1C-C7-30	4
	2	4	10	00-C0-F2-49-39-60	5	00-C0-F2-53-EF-FC	5

Note: All MEPs are 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

ERPS ID	Port 0 RPL	Port 1 RPL	Port 0 SF	Port 1 SF	Port 0 APS	Port 1 APS	Ring
	Port	VLAN					
1	1	2	1	2	1	2	Major
	Owner	0					
		5					

Switch 2 Configuration (SISPM1040-384-LRT-C)

VLANs	Port	Mode	Tag	VLANs
	Port 3	Trunk	Tag All	5,20
	Port 4	Trunk	Tag All	5,10
	Port 5	Trunk	Tag All	5,10,20

STP	Port	Mode
	Port 3	Disable
	Port 4	Disable
	Port 5	Disable

MEPs	Instance	Port	VLAN	MAC	MEP ID	Peer MAC	Peer MEP ID
	1	3	20	00-40-C7-1C-C7-2F	3	00-C0-F2-53-F0-BA	8
	2	4	10	00-C0-F2-49-39-60	4	00-C0-F2-49-39-5F	1
	3	5	10	00-40-C7-1C-C7-31	9	00-C0-F2-53-EF-FE	10

Note: All MEPs are 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

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	Instance	Port	VLAN	MAC	MEP ID	Peer MAC	Peer MEP ID
	1	3	20	00-C0-F2-53-F0-B9	7	00-C0-F2-53-EF-FD	6
	2	4	20	00-C0-F2-53-F0-BA	8	00-40-C7-1C-C7-2F	3

Note: All MEPs are programed the same under the Functional Configuration.

Continuity Check

Check Enable – Priority: 7 – Frame rate: 1f/sec

APS Protocol

Check Enable – Priority: 7 – Cast: Multi – Type: R-APS

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

ERPS ID	Port 0	Port 1	Port 0 SF	Port 1 SF	Port 0 APS	Port 1 APS	Ring	RPL	Port
1	1	2	1	2	1	2	Sub Owner	1	5

Switch 4 Configuration (SISPM1040-362-LRT[E])

VLANs	Port 3	Trunk	Tag All	5,10
	Port 4	Trunk	Tag All	5,20
	Port 5	Trunk	Tag All	5,10,20

STP	Port 3	Disable
	Port 4	Disable
	Port 5	Disable

MEPs	Instance	Port	VLAN	MAC	MEP ID	Peer MAC	Peer MEP ID
	1	3	10	00-C0-F2-53-EF-FC	5	00-C0-F2-49-39-60	2
	2	4	20	00-C0-F2-53-EF-FD	6	00-C0-F2-53-F0-B9	7
	3	5	10	00-C0-F2-53-EF-FE	10	00-40-C7-1C-C7-31	9

Note: All MEPs are 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

ERPS ID	Port 0	Port 1	Port 0 SF	Port 1 SF	Port 0 APS	Port 1 APS	Ring	RPL	Port VLAN
1	1	3	1	3	1	3	Major	None	5
2	2	0	2	0	2	0	Sub	None	5

Interconnect Yes, Major 1

Testing

Testing Pings from Switch 4 to Switch 1 – Major Ring

Failing Major ring, No lost pings

```
C:\Users\dennist>ping 192.168.1.85 -t
```

```
Pinging 192.168.1.85 with 32 bytes of data:
```

```
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.85: bytes=32 time=1ms TTL=64
```

```
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.85: bytes=32 time=5ms TTL=64 ←-----  
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64 Cable Disconnect  
Reply from 192.168.1.85: bytes=32 time=3ms TTL=64 ←-----  
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64  
Reply from 192.168.1.85: bytes=32 time=1ms TTL=64  
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64  
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64  
Reply from 192.168.1.85: bytes=32 time=1ms TTL=64  
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64  
Reply from 192.168.1.85: bytes=32 time<1ms TTL=64  
Ping statistics for 192.168.1.85:  
Packets: Sent = 45, Received = 45, Lost = 0 (0% loss),  
Approximate round trip times in milli-seconds:  
Minimum = 0ms, Maximum = 5ms, Average = 0ms
```

Testing Pings from Switch 4 to Switch 3 – Sub Ring

Fail Subring, No lost pings

```
C:\Users\dennist>ping 192.168.1.125 -t
```

Pinging 192.168.1.125 with 32 bytes of data:

```
Reply from 192.168.1.125: bytes=32 time=1ms TTL=64
```

```
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.125: bytes=32 time=7ms TTL=64
```

←-----

Cable Disconnect

```
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
```

```
Reply from 192.168.1.125: bytes=32 time=1ms TTL=64
```

```
Reply from 192.168.1.125: bytes=32 time<1ms TTL=64
```

Reply from 192.168.1.125: bytes=32 time=1ms TTL=64

Reply from 192.168.1.125: bytes=32 time<1ms TTL=64

Reply from 192.168.1.125: bytes=32 time<1ms TTL=64

Reply from 192.168.1.125: bytes=32 time<1ms TTL=64

Reply from 192.168.1.125: bytes=32 time<1ms TTL=64

Reply from 192.168.1.125: bytes=32 time<1ms TTL=64

Reply from 192.168.1.125: bytes=32 time<1ms TTL=64

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
feec1d1085ff075fd03b1d2d5ab4c0befbfff0917079c8abb3a77338041bf5d6e1771bdbbd1a317ea2f42fc2aacc8c
50a8e667456d7c04099f74f8ef9dcc0fbd4
!
vlan 1
!
!
!
!
ip route 0.0.0.0 0.0.0.0 192.168.1.254
tzidx 0
exec-timeout autologout 0
snmp-server location DT Lab Ring
system name SISPM1040-362-LRT-E
system location DT Lab Ring
system description Managed Hardened PoE+ Switch, (4) 10/100/1000Base-T PoE+ Ports + (2)
10/100/1000Base-T Ports + (2) 100/1000Base-X SFP Ports
!
interface GigabitEthernet 1/1
!
interface GigabitEthernet 1/2
!
interface GigabitEthernet 1/3
no spanning-tree
switchport trunk allowed vlan 5,10
switchport trunk vlan tag native
switchport mode trunk
poE mode disable
!
interface GigabitEthernet 1/4
no spanning-tree
switchport trunk allowed vlan 5,20
```

```
switchport trunk vlan tag native
switchport mode trunk
poE mode disable
!
interface GigabitEthernet 1/5
no spanning-tree
switchport trunk allowed vlan 5,10,20
switchport trunk vlan tag native
switchport mode trunk
!
interface GigabitEthernet 1/6
!
interface GigabitEthernet 1/7
!
interface GigabitEthernet 1/8
!
interface vlan 1
ip address 192.168.1.135 255.255.255.0
ip dhcp server
!
mep 1 down domain port level 4 interface GigabitEthernet 1/3
mep 1 mep-id 5
mep 1 vid 10
mep 1 peer-mep-id 2 mac 00-C0-F2-49-39-60
mep 1 cc 7
mep 1 aps 7 raps
mep 2 down domain port level 4 interface GigabitEthernet 1/4
mep 2 mep-id 6
mep 2 vid 20
mep 2 peer-mep-id 7 mac 00-C0-F2-53-F0-B9
mep 2 cc 7
mep 2 aps 7 raps
mep 3 down domain port level 4 interface GigabitEthernet 1/5
mep 3 mep-id 10
mep 3 vid 10
mep 3 peer-mep-id 9 mac 00-40-C7-1C-C7-31
```

```
mep 3 cc 7
mep 3 aps 7 raps
erps 1 major port0 interface GigabitEthernet 1/3 port1 interface GigabitEthernet 1/5
erps 1 mep port0 sf 1 aps 1 port1 sf 3 aps 3
erps 1 vlan 5
erps 2 sub port0 interface GigabitEthernet 1/4 interconnect 1
erps 2 mep port0 sf 2 aps 2
erps 2 vlan 5
!
spanning-tree aggregation
spanning-tree link-type point-to-point
!
!
line console 0
!
line vty 0
!
line vty 1
!
line vty 2
!
line vty 3
!
line vty 4
!
line vty 5
!
line vty 6
!
line vty 7
!
line vty 8
!
line vty 9
!
line vty 10
```

```
!  
line vty 11  
!  
line vty 12  
!  
line vty 13  
!  
line vty 14  
!  
line vty 15  
!  
!  
end
```

running-config_192.168.1**hostname SISPM1040-582-LRT**

```
logging on
logging host 192.168.1.253
username admin privilege 15 password encrypted
7073dec86c15b8a9907bb4106ef783adde46bd5b5969cc68fb55b430336bd7c80d5ded65d2fdb39abe81cc9caa5a9
3620f270c21bca86e776cee9c5588bfb8c7
username superuser privilege 15 password encrypted
4643fdc71f39fd4cb955943fcaf89faca81bc650fbaeebe25a796662d5c225bf0d5ded65d2fdb39abe81cc9c51449
7e27799560e488713aabaac4f167e7732ca
!
vlan 1
!
!
!
!
ip route 0.0.0.0 0.0.0.0 192.168.1.254
ntp automatic
ntp server 1 ip-address ntp1.transition.com
ntp server 2 ip-address ntp2.transition.com
clock timezone '' 9
tzidx 0
exec-timeout autologout 0
poe ping-check enable
snmp-server contact DTroxel
snmp-server location DT Office
system contact DTroxel
system name SISPM1040-582-LRT
system location DT Office
system description Managed Hardened PoE++ Switch (8) 10/100/1000Base-T PoE++ Ports + (2)
100/1000Base-X SFP Slot
!
interface GigabitEthernet 1/1
no spanning-tree
poe ping-ip-addr 192.168.1.70
poe failure-action reboot-Remote-PD
```

```
!  
interface GigabitEthernet 1/2  
  no spanning-tree  
  switchport forbidden vlan add 3,5  
!  
interface GigabitEthernet 1/3  
  no spanning-tree  
  switchport trunk allowed vlan 5,10  
  switchport trunk vlan tag native  
  switchport mode trunk  
  poe mode disable  
!  
interface GigabitEthernet 1/4  
  no spanning-tree  
  switchport trunk allowed vlan 5,10  
  switchport trunk vlan tag native  
  switchport mode trunk  
  poe mode disable  
  poe ping-ip-addr 192.168.1.200  
!  
interface GigabitEthernet 1/5  
  no spanning-tree  
!  
interface GigabitEthernet 1/6  
  no spanning-tree  
!  
interface GigabitEthernet 1/7  
!  
interface GigabitEthernet 1/8  
  poe mode disable  
!  
interface GigabitEthernet 1/9  
  no spanning-tree  
!  
interface GigabitEthernet 1/10  
  no spanning-tree
```

```
!  
interface vlan 1  
  ip address 192.168.1.85 255.255.255.0  
  ip dhcp server  
!  
mep 1 down domain port level 4 interface GigabitEthernet 1/3  
mep 1 vid 10  
mep 1 peer-mep-id 4 mac 00-40-C7-1C-C7-30  
mep 1 cc 7  
mep 1 aps 7 raps  
mep 2 down domain port level 4 interface GigabitEthernet 1/4  
mep 2 mep-id 2  
mep 2 vid 10  
mep 2 peer-mep-id 5 mac 00-C0-F2-53-EF-FC  
mep 2 cc 7  
mep 2 aps 7 raps  
erps 1 major port0 interface GigabitEthernet 1/3 port1 interface GigabitEthernet 1/4  
erps 1 mep port0 sf 1 aps 1 port1 sf 2 aps 2  
erps 1 rpl owner port0  
erps 1 vlan 5  
!  
spanning-tree aggregation  
  no spanning-tree  
  spanning-tree link-type point-to-point  
!  
!  
line console 0  
!  
line vty 0  
!  
line vty 1  
!  
line vty 2  
!  
line vty 3  
!
```

```
line vty 4
!
line vty 5
!
line vty 6
!
line vty 7
!
line vty 8
!
line vty 9
!
line vty 10
!
line vty 11
!
line vty 12
!
line vty 13
!
line vty 14
!
line vty 15
!
map-api-key AIzaSyBITuM0hDtK6nJeZPEk7jnrcoGGi92EpFM
!
end
```


running-config_192.168.1**hostname SISPM1040-384-LRT-C**

```
username admin privilege 15 password encrypted
6593186b999f348becd63b8612ac561c114250a1a00bd38f6afb5378acb6d08c1864c59b092b0e2b29ba4f1d55916
6800846cbc52c4558a90e4cdf95d3cfcfb4
username dennis privilege 5 password encrypted
a92a5dbf4fcd2e13d35adb36d2418476e907de19a641fa7baf80b1abb2bacd8ee5dbdd44e246b88be1636df6b8769
af790aa8721622481085e33c32e6e119dbd
!
vlan 1
!
!
!
!
ip route 0.0.0.0 0.0.0.0 192.168.1.254
tzidx 0
exec-timeout autologout 0
poE ping-check enable
access-list ace 2 ingress interface GigabitEthernet 1/2 action deny
access-list ace 1 next 2 ingress interface GigabitEthernet 1/2 frame-type ipv4-tcp dport 443
system name SISPM1040-384-LRT-C
system description Managed Hardened PoE+ Switch, (8) 10/100/1000Base-T PoE+ Ports + (4)
100/1000Base-X SFP
!
interface GigabitEthernet 1/1
no spanning-tree
lldp cdp-aware
poE ping-ip-addr 192.168.1.100
poE failure-action reboot-Remote-PD
!
interface GigabitEthernet 1/2
no spanning-tree
lldp cdp-aware
speed 1000
duplex full
!
```

```
interface GigabitEthernet 1/3
  no spanning-tree
  switchport trunk allowed vlan 5,20
  switchport trunk vlan tag native
  switchport mode trunk
  lldp cdp-aware
  poe mode disable
!
interface GigabitEthernet 1/4
  no spanning-tree
  switchport trunk allowed vlan 5,10
  switchport trunk vlan tag native
  switchport mode trunk
  lldp cdp-aware
  poe mode disable
!
interface GigabitEthernet 1/5
  no spanning-tree
  switchport trunk allowed vlan 5,10,20
  switchport trunk vlan tag native
  switchport mode trunk
  lldp cdp-aware
  poe mode disable
!
interface GigabitEthernet 1/6
  no spanning-tree
  lldp cdp-aware
!
interface GigabitEthernet 1/7
  lldp cdp-aware
!
interface GigabitEthernet 1/8
  lldp cdp-aware
!
interface GigabitEthernet 1/9
  no spanning-tree
```

```
switchport trunk allowed vlan 1,50,100
switchport trunk vlan tag native
lldp cdp-aware
!
interface GigabitEthernet 1/10
no spanning-tree
lldp cdp-aware
!
interface GigabitEthernet 1/11
no spanning-tree
lldp cdp-aware
!
interface GigabitEthernet 1/12
no spanning-tree
lldp cdp-aware
!
interface vlan 1
ip address 192.168.1.95 255.255.255.0
ip dhcp server
!
mep 1 down domain port level 4 interface GigabitEthernet 1/3
mep 1 mep-id 3
mep 1 vid 20
mep 1 peer-mep-id 8 mac 00-C0-F2-53-F0-BA
mep 1 cc 7
mep 1 aps 7 raps
mep 2 down domain port level 4 interface GigabitEthernet 1/4
mep 2 mep-id 4
mep 2 vid 10
mep 2 peer-mep-id 1 mac 00-C0-F2-49-39-5F
mep 2 cc 7
mep 2 aps 7 raps
mep 3 down domain port level 4 interface GigabitEthernet 1/5
mep 3 mep-id 9
mep 3 vid 10
mep 3 peer-mep-id 10 mac 00-C0-F2-53-EF-FE
```

```
mep 3 cc 7
mep 3 aps 7 raps
erps 1 major port0 interface GigabitEthernet 1/5 port1 interface GigabitEthernet 1/4
erps 1 mep port0 sf 3 aps 3 port1 sf 2 aps 2
erps 1 rpl neighbor port1
erps 1 vlan 5
erps 2 sub port0 interface GigabitEthernet 1/3 interconnect 1
erps 2 mep port0 sf 1 aps 1
erps 2 rpl neighbor port0
erps 2 vlan 5
!
spanning-tree aggregation
no spanning-tree
spanning-tree link-type point-to-point
!
!
line console 0
!
line vty 0
!
line vty 1
!
line vty 2
!
line vty 3
!
line vty 4
!
line vty 5
!
line vty 6
!
line vty 7
!
line vty 8
!
```

```
line vty 9
!
line vty 10
!
line vty 11
!
line vty 12
!
line vty 13
!
line vty 14
!
line vty 15
!
map-api-key AIzaSyBITuM0hDtK6nJeZPEk7jnrcoGGi92EpFM
!
end
```

running-config_192.168.1**hostname SISPM1040-362-LRT-W**

```
username admin privilege 15 password encrypted
6158ed7daf39d06ded0e7c4828c3b15bb4c40673bd445afcd643295925ae425d9611d1cbe872708237571aacc7b92
37f33b01ae6866e2484009edfe1fa0bf56f
!
vlan 1
!
!
!
!
ip route 0.0.0.0 0.0.0.0 192.168.1.254
tzidx 0
exec-timeout autologout 0
snmp-server location DT Lab Ring
system name SISPM1040-362-LRT-W
system location DT Lab Ring
system description Managed Hardened PoE+ Switch, (4) 10/100/1000Base-T PoE+ Ports + (2)
10/100/1000Base-T Ports + (2) 100/1000Base-X SFP Ports
!
interface GigabitEthernet 1/1
!
interface GigabitEthernet 1/2
!
interface GigabitEthernet 1/3
no spanning-tree
switchport trunk allowed vlan 5,20
switchport trunk vlan tag native
switchport mode trunk
poe mode disable
!
interface GigabitEthernet 1/4
no spanning-tree
switchport trunk allowed vlan 5,20
switchport trunk vlan tag native
switchport mode trunk
```

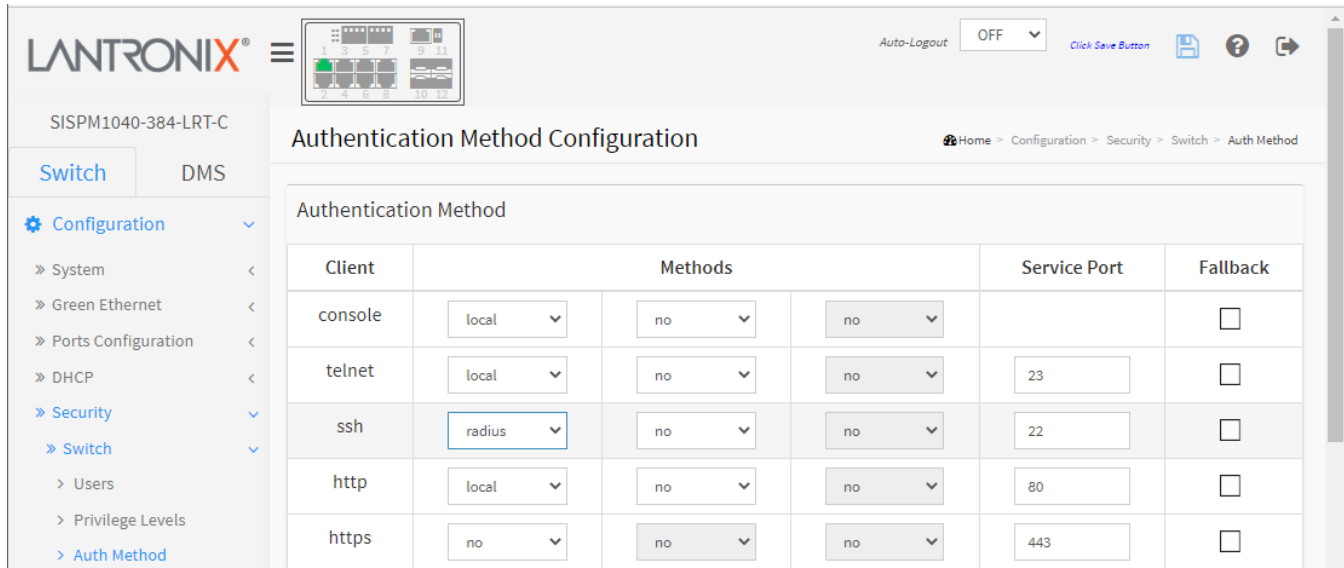
```
poe mode disable
!
interface GigabitEthernet 1/5
!
interface GigabitEthernet 1/6
!
interface GigabitEthernet 1/7
!
interface GigabitEthernet 1/8
!
interface vlan 1
 ip address 192.168.1.125 255.255.255.0
 ip dhcp server
!
mep 1 down domain port level 4 interface GigabitEthernet 1/3
mep 1 mep-id 7
mep 1 vid 20
mep 1 peer-mep-id 6 mac 00-C0-F2-53-EF-FD
mep 1 cc 7
mep 1 aps 7 raps
mep 2 down domain port level 4 interface GigabitEthernet 1/4
mep 2 mep-id 8
mep 2 vid 20
mep 2 peer-mep-id 3 mac 00-40-C7-1C-C7-2F
mep 2 cc 7
mep 2 aps 7 raps
erps 1 sub port0 interface GigabitEthernet 1/3 port1 interface GigabitEthernet 1/4
erps 1 mep port0 sf 1 aps 1 port1 sf 2 aps 2
erps 1 rpl owner port1
erps 1 vlan 5
!
spanning-tree aggregation
 spanning-tree link-type point-to-point
!
!
line console 0
```

```
!  
line vty 0  
!  
line vty 1  
!  
line vty 2  
!  
line vty 3  
!  
line vty 4  
!  
line vty 5  
!  
line vty 6  
!  
line vty 7  
!  
line vty 8  
!  
line vty 9  
!  
line vty 10  
!  
line vty 11  
!  
line vty 12  
!  
line vty 13  
!  
line vty 14  
!  
line vty 15  
!  
!  
end
```


Appendix B 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.



The screenshot shows the 'Authentication Method Configuration' page in the Lantronix web interface. The page title is 'Authentication Method Configuration' and the breadcrumb trail is 'Home > Configuration > Security > Switch > Auth Method'. The left sidebar shows the navigation menu with 'Switch' selected. The main content area displays a table with the following data:

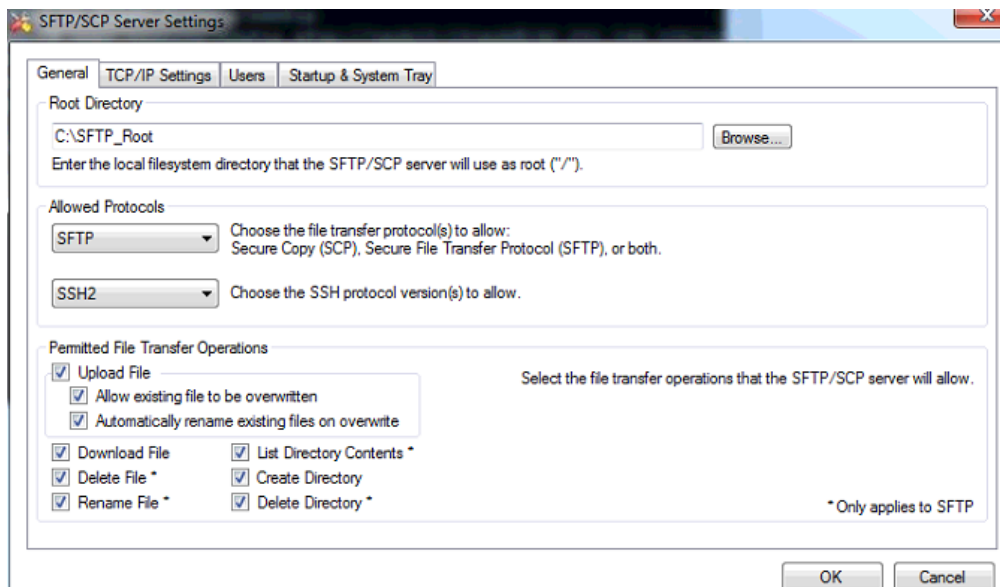
Client	Methods	Service Port	Fallback
console	local		<input type="checkbox"/>
telnet	local	23	<input type="checkbox"/>
ssh	radius	22	<input type="checkbox"/>
http	local	80	<input type="checkbox"/>
https	no	443	<input type="checkbox"/>

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

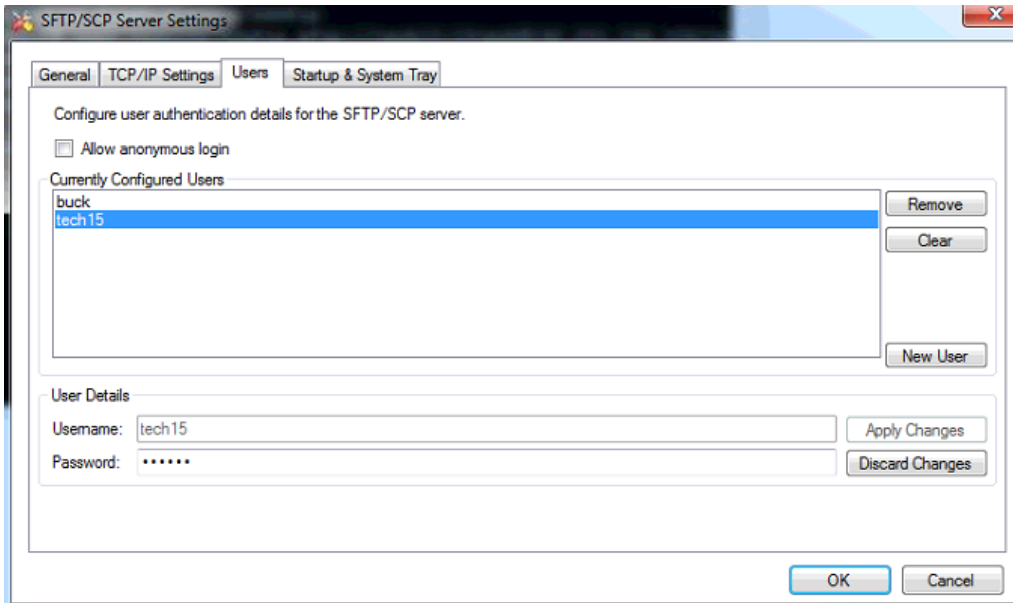


The screenshot shows the 'SFTP/SCP Server Settings' dialog box in SolarWind. The 'General' tab is selected. The 'Root Directory' is set to 'C:\SFTP_Root'. The 'Allowed Protocols' section has 'SFTP' and 'SSH2' selected. The 'Permitted File Transfer Operations' section has the following options checked:

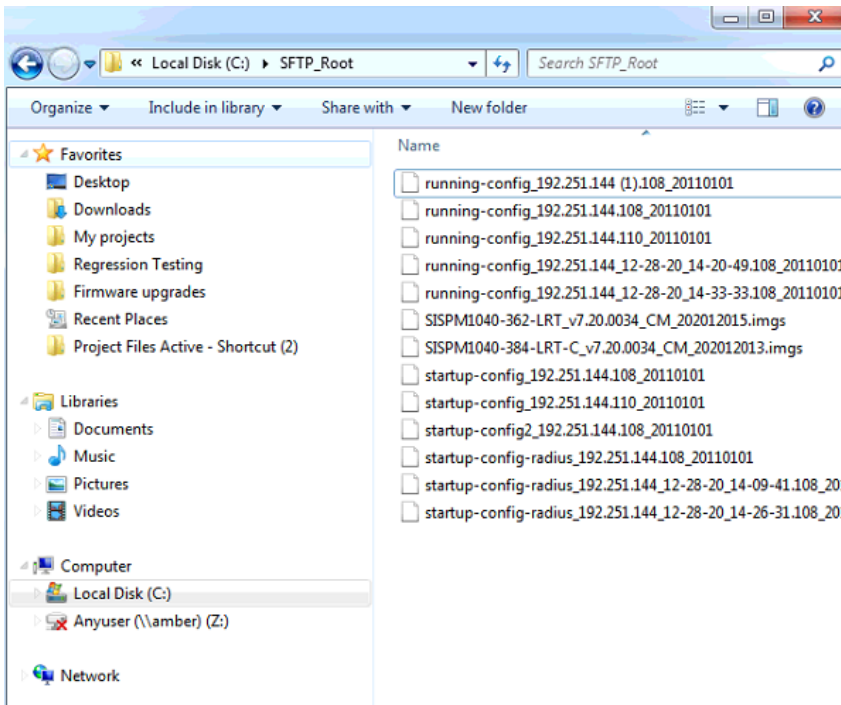
- Upload File
- Allow existing file to be overwritten
- Automatically rename existing files on overwrite
- Download File
- List Directory Contents *
- Delete File *
- Create Directory
- Rename File *
- Delete Directory *

*Only applies to SFTP

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 :

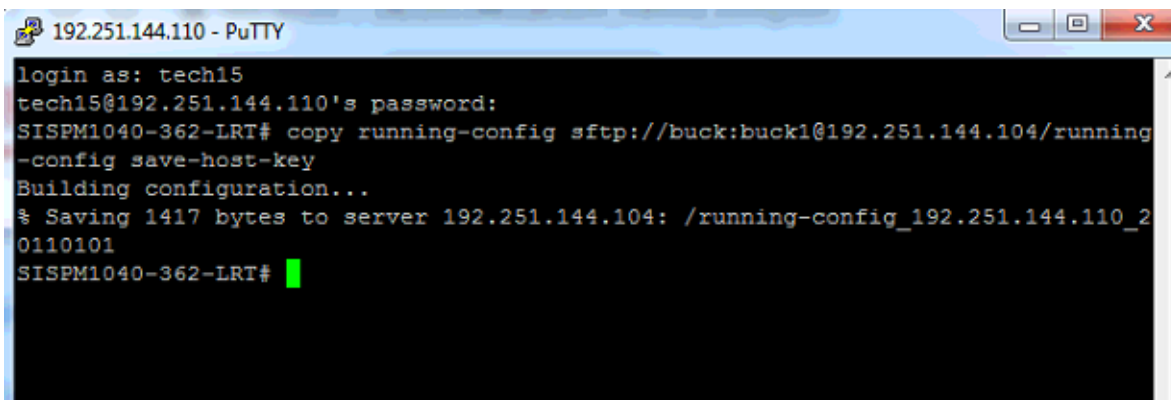
```
copy sftp://root:transition@192.168.1.248/running_192.168.1.203_20110101 running-config save-host-key replace
```

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:

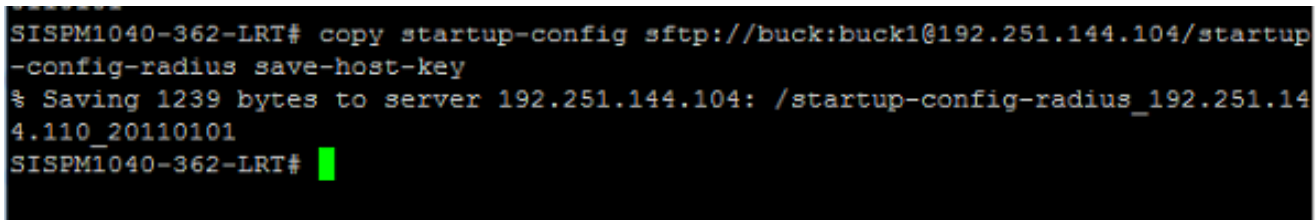


```
192.251.144.110 - PuTTY
login as: tech15
tech15@192.251.144.110's password:
SISPM1040-362-LRT# copy running-config sftp://buck:buck1@192.251.144.104/running-
-config save-host-key
Building configuration...
% Saving 1417 bytes to server 192.251.144.104: /running-config_192.251.144.110_2
0110101
SISPM1040-362-LRT#
```

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 switch, using 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 switch using SFTP protocol.

Example:

```
SISPM1040-362-LRT# copy running-config sftp://tech15:15tech@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#
```



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