S2800S Series Switches Command Line Interface Reference Guide

Models: S2800S-8T2F-P; S2800S-8T; S2800S-24T4F-P; S2800S-24T2F; S2800S-48T4F

Contents

1. MTU

In the interface configuration mode, use this command to set the MTU of the interface.

MTU <64-10240>

Parameter

Parameter	Description
64-10240	Can be set in the range.

Default The default configuration is 1522.

Mode Global configuration mode.

Usage NULL

Example Set the MTU value

S2800S(config)# mtu 10240

Command

Command	Description
show interfaces GigabitEthernet id mtu	View the interface MTU status information.

Example S2800S# show interfaces GigabitEthernet 0/1 mtu

```
Interface          |                MTU
-------------------+-------------------------------------
gi0/1              |                1024
```

2. Link-Aggregation Port Commands

2.1 Configure Relevant Commands

2.1.1 Link-Aggregation Load-Balance

Configure a traffic balancing algorithm for link-aggregation port (AGG). Use the no option for this command to set the recovery traffic balance to the default.

link-aggregation load-balance {mac | ip-mac}

no link-aggregation load-balance

Parameter	Parameter	Description
	MAC	The traffic is allocated according to the source MAC address of the incoming packets. In each AGG, packets from different MAC addresses are assigned to different ports. Packets from the same MAC address use the same port.
	IP + MAC	Traffic is allocated based on source IP and source MAC. Different source IP - source MAC traffic is forwarded through different ports, and the same source IP - source MAC is forwarded through the same link.

Default NULL

Mode Global configuration mode.

Usage Use the show link-aggregation group command to view the traffic balancing algorithm.

Example S2800S(config)# link-aggregation load-balance ip

Command	Command	Description
	show link-aggregation group	Display link-aggregation settings.

2.1.2 Link-Aggregation

Create a link-aggregation group.

link-aggregation {group-number **mode {manual | lacp}}**

no link-aggregation {group-number}

Parameter	Parameter	Description
	group-number	The link-aggregation member port group number.
	manual	Use static mode.

lacp	Use LACP protocol.

Default The physical port does not belong to any link-aggregation port by default.

Mode Global configuration mode.

Usage You can configure manual mode and LACP mode. No command requires no interface in the aggregation group.

Example the following example creates a link aggregation group 1.

S2800S(config)# **link-aggregation 1 mode manual**

2.1.3 Interface Link-Aggregation

Set a physical port as a member port of the link-aggregation port. Use the no option of the command to remove the link-aggregation Port member attribute of the port.

link-aggregation group-number [active | passive | manual]

no link-aggregation {group-number}

Parameter

Parameter	Description
group-number	The link-aggregation member port group number.

Default The physical port default does not belong to any link-aggregation port.

Mode Interface configuration mode.

Usage All AGG member interfaces need to be in the same VLAN.

Example S2800S(config)# interface GigabitEthernet /1

S2800S (config-if-GigabitEthernet0/1)# link-aggregation 1 active

Command

Command	Description
show link-aggregation group	Display the information of the link aggregation group.

2.2 Display Relevant Commands

2.2.1 Show Link-Aggregation

Display link-aggregation settings.

show link-aggregation [group | group-number]

Parameter

Parameter	Description

	show link-aggregation group	Show all link aggregation groups.
	show link-aggregation group group-number	Displays a specific group of link aggregation

Default NULL

Mode Privilege mode.

Usage If you do not specify the aggregate port interface number, all the information of the aggregate port will be displayed.

Example The following example shows information about link-aggregation 1.

S2800S# **show link-aggregation group 1**

Command

Command	Description
Show link-aggregation group	Display the status of all link aggregation groups.

3. Port Mirroring Commands

3.1 Configure Relevant Commands

3.1.1 Monitor Session

Create a SPAN session and specify the destination port (monitor port) and source port (monitored port). Use the no option of the command to delete the session or remove the source port or destination port separately.

monitor session session number {[source **interface GigabitEthernet** port-id

[both | rx | tx]] | [destination **interface GigabitEthernet** port-id]}

no monitor session session number {[source **interface GigabitEthernet** port-id [both | rx | tx]] | [destination **interface GigabitEthernet** port-id]}

Parameter

Parameter	Description
session number	SPAN session number
source interface GigabitEthernet port-id	Specify the source port. For interface-id, specify the corresponding interface number, only the physical port, not for the SVI.
destination interface GigabitEthernet port-id	Specifies the destination port. For interface-id, specify the corresponding interface number, only the physical port, not for the SVI.
both	While monitoring input and output messages.
rx	Only monitor the input message.
tx	Only monitor the output message.

Default NULL

Mode Global configuration mode.

Usage Switch port and AGG (separate port settings) can be configured as source and destination ports. The SPAN session does not affect the normal operation of the switch. SPAN sessions can be configured on a disabled port; however, SPAN does not work immediately until the destination and source port are enabled. A port cannot be both a source port and a destination port. Use the show monitor command to display the operating status of the SPAN session.

The following example shows how to create a SPAN session: Session 1. If the session has already been set up, firstly, clear the configuration of the current session 1, and then set the port 0 interface to the port interface 0/1.

Example

S2800S(config)# no monitor session 1

S2800S(config)# monitor session 1 source interfaces

GigabitEthernet 0/2 both

S2800S(config)# **monitor session 1 destination interface**

GigabitEthernet 0/1

Command

Command	Description
monitor session	Create a SPAN session and specify the destination port (Monitoring port) and source port (monitored port).

3.2 Display Relevant Commands

3.2.1 Show Monitor

Displays the status of the current SPAN configuration

show monitor

Parameter	Parameter	Description
	-	-

Default All SPAN sessions are displayed by default.

Mode Privilege mode.

Usage NULL

Example

```
S2800S# show monitor
Session 1 Configuration
Source RX Port          : gi0/9
Source TX Port          : gi0/9
Destination port        : gi0/10
Ingress State           : disabled
```

Command	Command	Description
	show monitor session	Displays the status of the current SPAN configuration.

4. Port Isolation Commands

4.1 Configure Relevant Commands

4.1.1 Isolate-Port

Configure the port isolation in port mode and delete the configuration with the no command.

By default, port isolation is disabled.

Switchport protected

no Switchport protected

Parameter	Parameter	Description
	Switchport protected	Turn on port isolation configuration.

Default Turn off port isolation configuration.

Mode Port configuration mode.

Usage After the port isolation function is enabled, the port and port, port, and link aggregation group (AGG) cannot be accessed from each other.

Example The following is the isolation between port 0/1 and port 0/2.

S2800S(config)# **interface GigabitEthernet 0/1**

S2800S(config-if-GigabitEthernet0/1)# **switchport protected**

S2800S(config)# **interface GigabitEthernet 0/2**

S2800S(config-if-GigabitEthernet0/2)# **switchport protected**

Command	Command	Description
	show interfaces GigabitEthernet 0/1 protected	View the current port isolation information.

4.2 Display Relevant Commands

4.2.1 Show Isolate-Port

Display the current port isolation configuration.

show interfaces port-id **protected**

Parameter	Parameter	Description
	show interfaces port-id **protected**	Display the current port isolation configuration.

Default NULL

Mode Privilege mode

Usage NULL

Example S2800S#**show isolate-port**

Command	Command	Description
	show interfaces port-id **protected**	View the current port isolation information.

5. Port Speed Limit

5.1 Configure Relevant Commands

5.1.1 Rate-Limit

In port mode, enable/disable the port input/output rate.

rate-limit {input | output}

no rate-limit {input | output}

Parameter	Parameter	Description
	rate-limit {input | output}	Open the port speed limit function, limiting the input and output speed.
	no rate-limit {input | output}	Close the port speed limit function, limiting the input and output speed.

Default Turn off port speed limit function.

Mode Interface configuration mode.

Usage After the port speed limit is enabled, the upstream and downstream rates of the ports are controlled.

Example The following is the configuration of port 0/1 configuration port uplink rate limit.

S2800S(config-if-GigabitEthernet0/1)# **rate-limit input 10000**

Command	Command	Description
	show rate-limit	View the current rate configuration information of the port.

5.2 Display Relevant Commands

5.2.1 Show Rate-Limit & Show Traffic-Shape

Displays the current port rate limit configuration.

show rate-limit

show rate-limit interfaces {port-id}

Parameter	Parameter	Description
	show rate-limit	Display the upstream rate limit configuration information for all the ports.
	show rate-limit interface {port-id}	Display the upstream rate limit configuration information of a current port.

Default NULL

Mode Privilege mode.

Usage Display the upstream rate limit configuration information for all the ports.

Example S2800S# show rate-limit interfaces GigabitEthernet 0/1

```
Interface          | Ingress          | Egress
                   | kbps             | kbps
-------------------+------------------+-------------------
gi0/1              | IGR-UNLIMIT      | 10000
```

Command

Command	Description
show rate-limit interface port-list	View the current port rate configuration information.

6. Storm Control

6.1 Configure Relevant Commands

6.1.1 Storm-Control

Enable or disable storm control in port mode: Use the storm-control command to enable storm control, use the no command to turn off storm control.

storm-control {[broadcast | unknown-multicast | unknown-unicast] kbps}

no storm-control

Parameter

Parameter	Description
broadcast	Broadcast packets.
Unknown-multicast	Unknown Multicast packets.
Unknown-unicast	Unknown unicast packets.
kbps	Rate unit.

Default Turn off storm control.

Mode Interface configuration mode.

Usage After the storm control function is enabled, you can set the rate at which the packets received on the corresponding port (the rate of the received packets (broadcast, unknown multicast, unknown unicast).

Example The following is the port 0/1 open storm control configuration.

S2800S(config-if-GigabitEthernet0/1)# **storm-control broadcast kbps 1024**

S2800S(config-if-GigabitEthernet0/1)# **storm-control Unknown-multicast kbps 1024**

S2800S(config-if-GigabitEthernet0/1)# **storm-control Unknown-unicast kbps 1024**

Command

Command	Description
show storm-control	Display storm control information.
show interface	The storm control information is displayed in the interface attribute.

6.2 Display Relevant Commands

6.2.1 Show Storm-Control

show storm-control

Parameter	Parameter	Description
	show storm-control	Display storm control information.
	show interface	The storm control information is displayed in the interface attribute.

Default NULL

Mode Privilege mode.

Usage View storm control configuration information.

Example S2800S# show storm-control

Interface	Broadcast	Unknown-Multicast	Unknown-Unicast	Action
	kbps	kbps	kbps	
gi0/1	Disabled	Disabled	Disabled	Drop
gi0/2	1024	Disabled	Disabled	Drop
gi0/3	Disabled	Disabled	Disabled	Drop
gi0/4	Disabled	Disabled	Disabled	Drop
gi0/5	Disabled	Disabled	Disabled	Drop
gi0/6	Disabled	Disabled	Disabled	Drop
gi0/7	Disabled	Disabled	Disabled	Drop
gi0/8	Disabled	Disabled	Disabled	Drop
gi0/9	Disabled	Disabled	Disabled	Drop
gi0/10	Disabled	Disabled	Disabled	Drop

7. Port Security

7.1 Configure Relevant Commands

7.1.1 Port-Security

After you enable Port-security, configure the limit mac number of the port. Close Port-security.

port-security [address-limit] {Number of limitation} **action {[**discard | forward | shutdown**]}**

no port-security

Parameter

Parameter	Description
number of limitation	Limit the number of macs, in the range of 1-256.
Discard | forward | shutdown	Action to be taken when limitation is reached.

Default Enable the port security function on the global switch, the port is turned off by default.

Mode Port configuration mode.

Usage Open port security, when the port to learn the number of MAC in the end limit, the message was discarded.

Example The following example is configured gig0/1 maximum mac learning number is 200, over the message is discarded

S2800S(config-if-GigabitEthernet0/1)# **port-security address-limit 200 action discard**

Command

Command	Description
no port-security	Turn off port security

7.2 Display Relevant Commands

7.2.1 Show Port-Security

Displays information about port security.

show port-security interface {port-id**}**

Parameter

Parameter	Description
show port-security interface {port-id**}**	Display the port security configuration information of the specified port.

Default NULL

Mode Privilege mode.

Usage NULL

Example Display the port security configuration information for gig1:

S2800S# **show port-security interfaces GigabitEthernet** 0/1

Port | Security | CurrentAddr | Action

----------+----------+----------+----------

gi0/1 | Enabled (200) | 13 | Discard

Command

Command	Description
Show port-security	View the port security global status.

8. NTP/SNTP Commands

8.1 NTP Configure Relevant Commands

8.1.1 Server

Configure the NTP/SNTP server IP address.

{[**ntp** | **sntp**]} **server**{server-ip}

Parameter	Parameter	Description
	server-ip	Server IP address.

Default Default server ip 216.229.0.179

Mode Global configuration mode.

Usage Use this command to configure the NTP/SNTP server IP address.

Example S2800S(config)# **ntp server 192.168.1.254**

S2800S(config)# **sntp server 192.168.1.254**

Command	Command	Description
	show ntp	Display NTP configuration information.
	show sntp	Display SNTP configuration information.

8.2 Show NTP/SNTP Status

Display ntp/sntp function status, server address, port number.

show {[ntp | sntp]}

Parameter	Parameter	Description
	show ntp	Display NTP configuration information.
	show sntp	Display SNTP configuration information.

Default NULL

Mode Privilege mode.

Usage Display ntp/sntp function status, server address, port number.

Example Display NTP configuration information:

S2800S# **show ntp**

NTP is Enabled

NTP Server address : 192.168.1.254

NTP Server port : 123

Display SNTP configuration information:

S2800S# **show sntp**

SNTP is Enabled

SNTP Server address : 192.168.1.254

SNTP Server port : 123

9. EEE

Open the EEE function, the switch will automatically turn off part of the idle circuit, effectively reduce power consumption, energy saving.

eee

eee interfaces GigabitEthernet {port-id}

Parameter	Parameter	Description
	eee	Turn on all port EEE functions.
	eee interfaces GigabitEthernet {port-id}	Open the EEE function for the specified port.

Default Turn off the eee function.

Mode Global configuration mode.

Usage Effectively reduce the switch power consumption, energy saving.

Example Turn on all port eee functions:

S2800S(config)# **eee**

Open the eee function for the specified port:

S2800S(config)# **eee interfaces GigabitEthernet** 0/1

Command	Command	Description
	show eee	View the configuration information for the EEE function.

10. DDoS Protection

10.1 Configuration DDoS Protection

10.1.1 Turn on DDoS Protection

Open the DDoS protection function, you can defend against DDoS attacks.

dos {[land-deny | smurf-deny | NULLscan-deny | xma-deny | synfin-deny | syn-sport I 1024-deny | pod-deny**]}**

Parameter	Parameter	Description
	land-deny	Source IP equals to destination IP .
	smurf-deny	Smurf Attacks messages.
	NULLscan-deny	NULL scan attack.
	xma-deny	Xmascan: sequence number is zero and the FIN, URG and PSH bits are set.
	synfin-deny	SYN and FIN bits set in the packet.
	syn-sportl1024-deny	SYN packets with sport less than 1024.
	pod-deny	Ping of death attacks.

Default Turn off the DDoS protection function.

Mode Global configuration mode.

Usage Prevent the DDoS attack.

Example Turn on land-deny attack protection:

S2800S(config)# **dos land-deny**

10.1.2 Turn off DDoS Protection

no dos {attack-name}

Command	Command	Description
	no dos {attack-name}	Turn off a specific attack on the DDoS protection.

Default NULL

Mode Global configuration mode.

Usage Turn off the defense against a specified DDoS attack.

Example Turn off land-deny attack protection:

S2800S(config)# **no dos land-deny**

10.2 Show DDoS Protection

View the configuration information for DoS protection.

show {dos}

Parameter

Parameter	Description
show dos	View the configuration information for DoS protection.

Default NULL

Mode Privilege mode.

Usage View the DDoS protection.

Example View the configuration information for DoS protection:

```
S2800S# show dos
Type                                    | State (Length)
----------------------------------------+-----------------------------------------
DMAC equal to SMAC                      | disabled
Land (DIP = SIP)                        | enabled
UDP Blat (DPORT = SPORT)                | disabled
TCP Blat (DPORT = SPORT)                | disabled
POD (Ping of Death)                     | disabled
IPv6 Min Fragment Size                  | disabled (1240 Bytes)
ICMP Fragment Packets                   | disabled
IPv4 Ping Max Packet Size               | disabled (512 Bytes)
IPv6 Ping Max Packet Size               | disabled (512 Bytes)
Smurf Attack                            | disabled (Netmask Length: 0)
TCP Min Header Length                   | disabled (20 Bytes)
TCP Syn (SPORT < 1024)                  | disabled
NULL Scan Attack                        | disabled
X-Mas Scan Attack                       | disabled
TCP SYN-FIN Attack                      | disabled
TCP SYN-RST Attack                      | disabled
TCP Fragment (Offset = 1)               | disabled
```

11. CPU Guard

11.1 Configuration CPU Guard

Configuring each type of packet bandwidth can suppress high-speed attack packets in the network.

cpu-protect {[**cpu**]}{**bandwidth**} pps vaule

cpu-protect {[**sub-interface**]}{[Message_type]}**pps** pps vaule

Parameter	Parameter	Description
	cpu bandwidth	Set CPU bandwidth(pps).
	Sub interface	Set the type of CPU protected packets.
	cpu bandwidth pps vaule	Set the total bandwidth of the CPU, in the range of 64-4000
	message_type	The message types include manage, protocol, route.
	Message_type] pps pps vaule	Set the bandwidth of each type of packet, in the range of 1 to 4000.

Default CPU Port Bandwidth 1000pps

CPU Protect Manage Bandwidth 500pps

CPU Protect Route Bandwidth 200pps

CPU Protect Protocol Bandwidth 500pps

Mode Global configuration mode

Usage To configure each type of message bandwidth can inhibit high rate of attack packets in network.

Example Set the total bandwidth of the CPU:

S2800S(config)# **cpu-protect cpu bandwidth 4000**

Set the bandwidth of manage packets:

S2800S(config)# **cpu-protect sub-interface manage pps 600**

11.2 Show CPU Guard

View the configuration information for CPU Guard.

show cpu-protect

show cpu-protect cpu

show cpu-protect sub-interface {[manage | protocol | route**]}**

Parameter	Parameter	Description
	show cpu-protect	View the configuration information for CPU Guard.

	show cpu-protect cpu	View the configuration information for CPU bandwidth.
	Show cpu-protect sub-interface {message_type}	View the bandwidth of each type of packet.

Default NULL

Mode Privilege mode.

Usage View the CPU Guard information.

Example View the configuration information for CPU Guard:

S2800S# **show cpu-protect**

View the configuration information for CPU bandwidth:

S2800S# **show cpu-protect cpu**

View the bandwidth of each type of packet:

S2800S# **show cpu-protect sub-interface manage**

12. Dual Configuration

12.1 Backup the Configuration File

copy {[running-config | startup-config]} **backup-config**

Parameter	Parameter	Description
	running-config	Backup the current configuration file to backup-config.
	startup-config	Backup the startup-config file to backup-config.

Default NULL

Mode Privilege mode.

Usage Backup the configuration file.

Example Backup the running-config file:

S2800S# **copy running-config backup-config**

backup the startup-config file:

S2800S# **copy startup-config backup-config**

12.2 Restore Configuration

copy backup-config {[running-config | startup-config]}

Parameter	Parameter	Description
	running-config	Restore the current configuration file from backup-config.
	startup-config]	Restore the startup-config file from backup-config.

Default NULL

Mode Privilege mode

Usage restores the configuration file

Example restore the running-config file:

S2800S# **copy backup-config running-config**

restore the startup-config file:

S2800S# **copy backup-config startup-config**

13. RMON

13.1 RMON Event

rmon event<1-65535>[log] [trap][description][owner]

Parameter	Parameter	Description
	<1-65535>	Specify event index to create or modify.
	log	Specify to show syslog.
	trap	Specify SNMP community to show SNMP trap.
	description	Specify description of event.
	owner	Specify owner of event.

Default NULL

Mode Global configuration mode.

Usage Use the **rmon event** command to add or modify a RMON event entry.

Use the **no** form of this command to delete.

You can verity settings by the **show rmon event** command.

Example The example shows how to add RMON event entry with log and trap action and modify it action to log only.

S2800S(config)# **rmon event 1 log trap public description test owner admin**

S2800S# **show rmon event 1**

Rmon Event Index : 1

Rmon Event Type : Log and Trap

Rmon Event Community : public

Rmon Event Description : test

Rmon Event Last Sent :

Rmon Event Owner : admin

S2800S(config)# **rmon event 1 log description test owner admin**

S2800S# **show rmon event 1**

Rmon Event Index : 1

Rmon Event Type : Log

Rmon Event Community :

Rmon Event Description : test

Rmon Event Last Sent :

Rmon Event Owner : admin

13.2 RMON Alarm

rmon alarm<1-65535>**interface** {port-id}{[broadcast-pkts | collision | crc-align-errors | drop-events | fragments | jabbers | multicast-pkts | octets | oversize-pkts | pkts | pkts1024to1518octets | pkts128to255octets | pkts256to511octets | pkts512to1023octets | ptks64octets | pkts65to127octets | undersize-pkts]}<1-2147483647>{[absolute | delta]}**ring<**0-2147483647**>**<1-65535>**falling<**0-2147483647**>**<1-65535>**startup** {[falling | rising | rising-falling]} [owner Name]

no rmon alarm<1-65535>[owner NAME]

Parameter	Parameter	Description
	<1-65535>	Specify event index to create or modify.
	port-id	Specify the interface to sample.
	(variable)	Specify a mib object to sample.
	<1-2147483647>	Specify the time in seconds that the alarm monitors the MIB variable.
	(absolute | delta)	Specify absolute to compare sample counter absolutely.
	<0-2147483647>	Specify a number which the alarm trigger rising event.
	<1-65535>	Specify event index when the rising threshold exceeds.
	<0-2147483647>	Specify a number which the alarm trigger falling event.
	<1-65535>	Specify event index when the falling threshold exceeds.
	falling | rising | rising-falling	Specify only to how rising or falling startup event. Or show either rising or falling startup event.
	owner Name	Specify owner of alarm.

Default NULL

Mode Global configuration mode.

Usage Use the **rmon alarm** command to add or modify a RMON alarm entry.

Before add alarm entry, at least one event entry must be added.

Use the no form of this command to delete.

You can verity settings by the **show rmon alarm** command.

Example The example shows how to add RMON alarm entry that sample interface 1 packets delta count every 300 seconds. Trigger event index 1 if over than rising threshold 10000, trigger event index 2 if lower than falling threshold.

S2800S(config)# **rmon event 1 log**

S2800S(config)# **rmon event 2 log**

S2800S(config)# **rmon alarm 1 interface GigabitEthernet 0/1 pkts 300 delta rising 1000 1 falling 100 1 startup rising-falling owner admin**

S2800S# **show rmon alarm 1**

Rmon Alarm Index : 1

Rmon Alarm Sample Interva l: 300

Rmon Alarm Sample Interface : gi0/1

Rmon Alarm Sample Variable : Pkts

Rmon Alarm Sample Type : delta

Rmon Alarm Type : Rising or Falling

Rmon Alarm Rising Threshold : 1000

Rmon Alarm Rising Event : 1

Rmon Alarm Falling Threshold : 100

Rmon Alarm Falling Event : 1

Rmon Alarm Owner : admin

S2800S(config)# **rmon event 1 log trap public description test owner admin**

S2800S# **show rmon event 1**

Rmon Event Index : 1

Rmon Event Type : Log and Trap

Rmon Event Community : public

Rmon Event Description : test

Rmon Event Last Sent :

13.3 RMON History

rmon history <1-65535>**interface** {port-id} [buckets<1-50>] [interval<1-3600>] [owner NAME]

no rmon history<1-65535>

Parameter

Parameter	Description
<1-65535>	Specify event index to create or modify.
port-id	Specify the interface to sample.
buckets<1-50>	Specify the maximum number of buckets.
interval<1-3600>	Specify time interval for each sample.

owner NAME	Specify owner of history.

Default NULL

Mode Global configuration mode.

Usage Use the **rmon history** command to add or modify a RMON history entry.

Use the **no** form of this command to delete.

You can verity settings by the **show rmon history** command.

Example The example shows how to add RMON history entry that monitor interface gig0/1 every 60 seconds and then modify it to monitor every 30 seconds.

```
S2800S(config)# rmon history 1 interface GigabitEthernet 0/1
interval 60 owner admin
S2800S# show rmon history 1
Rmon History Index          : 1
Rmon Collection Interface   : gi0/1
Rmon History Bucket         : 50
Rmon history Interval       : 60
Rmon History Owner          : admin
```

```
S2800S(config)# rmon history 1 interface GigabitEthernet 0/1
interval 30 owner admin
S2800S# show rmon history 1
Rmon History Index          : 1
Rmon Collection Interface   : gi0/1
Rmon History Bucket         : 50
Rmon history Interval       : 30
Rmon History Owner          : admin
```

13.4 Clear RMON Interface Statistics

clear rmon interface {port-id} **statistics**

Parameter

Parameter	Description
port-id	Specify the interface to clear.

Default NULL

Mode Privilege mode.

Usage Use the **clear rmon interface statistics** command to clear RMON etherStats Statistics those are recorded on interface.

You can verity results by the **show rmon interface statistics** command.

Example The example shows how to clear RMON etherStats Statistics on interface gig0/1.

S2800S# **clear rmon interfaces GigabitEthernet 0/1 statistics**

S2800S# **show rmon interfaces GigabitEthernet 0/1 statistics**

==== Port gi0/1 ==============================

etherStatsDropEvents	:	0
etherStatsOctets	:	0
etherStatsPkts	:	0
etherStatsBroadcastPkts	:	0
etherStatsMulticastPkts	:	0
etherStatsCRCAlignErrors	:	0
etherStatsUnderSizePkts	:	0
etherStatsOverSizePkts	:	0
etherStatsFragments	:	0
etherStatsJabbers	:	0
etherStatsCollisions	:	0
etherStatsPkts64Octets	:	0
etherStatsPkts65to127Octets	:	0
etherStatsPkts128to255Octets	:	0
etherStatsPkts256to511Octets	:	0
etherStatsPkts512to1023Octets	:	0
etherStatsPkts1024to1518Octets	:	0

13.5 Show RMON Interface Statistics

Show rmon interface {port-id} statistics

Parameter

Parameter	Description
port-id	Specify port to show.

Default NULL

Mode Privilege mode.

Usage Use the show rmon interface statistics command to show RMON etherStat Statistics of interface

You can verity results by the show rmon interface statistics command.

Example The example shows how to show RMON etherStat Statistics on interface gig0/1.

S2800S# show rmon interfaces GigabitEthernet 0/1 statistics

==== Port gi0/1 ==========

etherStatsDropEvents	:	0
etherStatsOctets	:	12313
etherStatsPkts	:	120
etherStatsBroadcastPkts	:	32
etherStatsMulticastPkts	:	85
etherStatsCRCAlignErrors	:	0
etherStatsUnderSizePkts	:	0
etherStatsOverSizePkts	:	0
etherStatsFragments	:	0
etherStatsJabbers	:	0
etherStatsCollisions	:	0
etherStatsPkts64Octets	:	11
etherStatsPkts65to127Octets	:	86
etherStatsPkts128to255Octets	:	23
etherStatsPkts256to511Octets	:	0
etherStatsPkts512to1023Octets	:	0
etherStatsPkts1024to1518Octets	:	0

13.6 Show RMON Event

show rmon event [<1-65535> | all]

Parameter	Parameter	Description
	<1-65535>	Specify event index to show.
	all	Show all existed event.

Default NULL

Mode Privilege mode.

Usage Use the **show rmon event** command to show existed RMON event entry.

Example The example shows how to show rmon event entry.

S2800S(config)# **rmon event 1 log trap public description test owner admin**

S2800S(config)# **exit** //Returns the privilege mode

S2800S# **show rmon event 1**

Rmon Event Index : 1

Rmon Event Type : Log and Trap

Rmon Event Community : public

Rmon Event Description : test

Rmon Event Last Sent :

Rmon Event Owner : admin

13.7 Show RMON Alarm

show rmon alarm [<1-65535> | all]

Parameter

Parameter	Description
<1-65535>	Specify alarm index to show.
all	Show all existed alarm.

Default NULL

Mode Privilege mode.

Usage Use the **show rmon alarm** command to show existed RMON alarm entry.

Example The example shows how to show rmon alarm entry.

S2800S(config)# **S2800S(config)# rmon alarm 1 interface GigabitEthernet 0/1**

broadcast-pkts 300 delta rising 10000 1 falling 100 1 startup rising-falling

owner admin

S2800S(config)# **exit** //Returns the privilege mode

S2800S# **show rmon alarm 1**

Rmon Alarm Index : 1

Rmon Alarm Sample Interval : 300

Rmon Alarm Sample Interface : gi0/1

Rmon Alarm Sample Variable : BroadcastPkts

Rmon Alarm Sample Type : delta

Rmon Alarm Type : Rising or Falling

Rmon Alarm Rising Threshold : 10000

Rmon Alarm Rising Event : 1

Rmon Alarm Falling Threshold : 100

Rmon Alarm Falling Event : 1

Rmon Alarm Owner : admin

13.8 Show RMON History

show rmon history [<1-65535> | all]

Parameter	Parameter	Description
	<1-65535>	Specify history index to show.
	all	Show all existed history.

Default NULL

Mode Privilege mode.

Usage Use the **show rmon history** command to show existed RMON history entry.

Example The example shows how to show rmon history entry.

S2800S(config)# **rmon history 1 interface GigabitEthernet 0/1 interval**

30 owner admin

S2800S(config)# **exit**

S2800S# **show rmon history 1**

Rmon History Index : 1

Rmon Collection Interface : gi0/1

Rmon History Bucket : 50

Rmon history Interval : 30

Rmon History Owner : admin

14. ARP Inspection

14.1 ARP Inspection

arp-inspection

no arp-inspection

Parameter	Description
-	-

Default ARP inspection is disabled.

Mode Global Configuration.

Usage Use the arp-inspection command to enable Dynamic Arp Inspection function. Use the no form of this command to disable.

Example The example shows how to enable Dynamic Arp Inspection on VLAN 1. You can verify

settings by the following **show arp-inspection** command.

S2800S(config)# arp-inspection

S2800S# show arp-inspection

Dynamic ARP Inspection : enabled

Enable on Vlans : 1-4094

14.2 ARP Inspection Rate-Limit

arp-inspection rate-limit<1-50>

no arp-inspection rate-limit

Parameter	Description
<1-50>	Set 1 to 50 PPS of DHCP packet rate limitation.

Default Default is un-limited of ARP packet.

Mode Interface configuration mode.

Usage Use the **arp-inspection rate-limit** command to set rate limitation on interface. The switch drop ARP packets after receives more than configured rate of packets per second. Use the **no** form of this command to return to default settings.

Example The example shows how to set rate limit to 30 pps on interface gig0/1. You can verify settings by the following **show arp-inspection interface** command.

S2800S(config)# **interface GigabitEthernet 0/1**

S2800S(config-if-GigabitEthernet0/1)# **arp-inspection rate-limit 30**

S2800S(config-if-GigabitEthernet0/1)# **end** //Returns the privilege mode

S2800S# **show arp-inspection interfaces GigabitEthernet 0/1**

Interfaces | Trust State | Rate (pps) | SMAC Check | DMAC Check | IP Check/Allow Zero |

----------+----------+----------+----------+----------+----------+

gi0/1 | Untrusted | 30 | disabled | disabled | disabled/disabled

14.3 ARP Inspection Trust

arp-inspection trust

no arp-inspection trust

Parameter

Parameter	Description
-	-

Default ARP inspection trust is disabled.

Mode Interface configuration mode.

Usage Use the arp-inspection trust command to set trusted interface. The switch does not check ARP packets that are received on the trusted interface; it simply forwards it. Use the no arp-inspection trust form of this command to set untrusted interface.

Example The example shows how to set interface gig0/1 to trust. You can verify settings by the following **show arp-inspection interface** command.

S2800S(config)# **interface GigabitEthernet 0/1**

S2800S(config-if-GigabitEthernet0/1)# **arp-inspection trust**

S2800S(config-if-GigabitEthernet0/1)# **do show arp-inspection interfaces GigabitEthernet 0/1**

Interfaces | Trust State | Rate (pps) | SMAC Check | DMAC Check | IP Check/Allow Zero |

----------+----------+----------+----------+----------+----------+

gi0/1 | Trusted | None | disabled | disabled | disabled/disabled

14.4 ARP Inspection Validate

arp-inspection validate {[src-mac | dst-mac | ip [allow-zeros]]}

no arp-inspection validate {[src-mac | dst-mac | ip [allow-zeros]]}

Parameter	Parameter	Description
	src-mac	The "src-mac" drop ARP requests and reply packets that arp-sender-mac and ethernet-source-mac is not Match.
	dst-mac	The "dst-mac"drops ARP reply packets that arp-target-mac and ethernet-dest-mac is not match.
	ip	The"ip"drop ARP request and reply packets that Sender-ip is invalid such as broadcast, multicast, all zero IP address and drop ARP reply to packets that Target-ip is invalid.
	allow-zeros	The"allow-zeros"means won't drop all zero IP address.

Default Default is disabled of all validation.

Mode Interface configuration mode.

Usage Use the **arp-inspection validate** command to enable validate function on interface.

Use the **no arp-inspection validate** form of this command to disable validation.

Example The example shows how to set interface gi1 to validate "src-mac", "dst-mac" and "ip allow zeros". You can verify settings by the following show ip arp inspection interface command

```
S2800S(config)# interface GigabitEthernet 0/1
S2800S(config-if-GigabitEthernet0/1)# arp-inspection validate src-mac
S2800S(config-if-GigabitEthernet0/1)# arp-inspection validate dst-mac
S2800S(config-if-GigabitEthernet0/1)# arp-inspection validate ip allow-zeros
S2800S(config-if-GigabitEthernet0/1)# do show arp-inspection interfaces
GigabitEthernet 0/1
Interfaces | Trust State | Rate (pps)  | SMAC Check  | DMAC Check | IP Check/Allow Zero |
------------+---------------+--------------+------------------ | -----------------+--------------------------+
   gi0/1   | Untrusted |     None    |     enabled    |     enabled    |    enabled/enabled
```

14.5 Clear ARP Inspection Statistics

clear arp-inspection interfaces {port-id} statistics

Parameter	Parameter	Description
	port-id	Specifies ports to clear statistics.

Default NULL

Mode Privilege mode.

Usage Use the **clear arp-inspection interfaces** {port-id} **statistics** command to clear statistics that are recorded on interface.

Example The example shows how to clear statistics on interface gig0/1t.

You can verify settings by the following **show arp-inspection interface statistics** command.

S2800S# **clear arp-inspection interfaces GigabitEthernet 0/1 statistics**

S2800S# **show arp-inspection interfaces GigabitEthernet 0/1 statistics**

Port | Forward | Source MAC Failures | Dest MAC Failures | SIP Validation Failures |

DIP Validation Failures | IP-MAC Mismatch Failures

----------+----------+----------+----------+----------+----------+----------

gi0/1 | 0 | 0 | 0 | 0 | 0

14.6 Show ARP Inspection

show arp-inspection interfaces

Parameter

Parameter	Description
-	-

Default NULL

Mode Privilege mode.

Usage Use the **show arp-inspection** command to show settings of ARP Inspection.

Example The example shows how to show settings of arp inspection

S2800S# **show arp-inspection**

Dynamic ARP Inspection : enabled

Enable on Vlans : 1-4094

14.7 Show ARP Inspection Interface

show arp-inspection interfaces {port-id}

show arp-inspection interfaces {port-id}statistics

Parameter

Parameter	Description
Port-id	Specifies ports to show statistics.

Default NULL

Mode Privilege mode.

Usage Use the **show arp-inspection interfaces** command to show settings or statistics of interface.

Example The example shows how to show settings of interface gig0/1

S2800S# **show arp-inspection interfaces GigabitEthernet 0/1**

Interfaces | Trust State | Rate (pps) | SMAC Check | DMAC Check | IP Check/Allow Zero |

---

gi0/1 | Untrusted | None | disabled | disabled | disabled/disabled

S2800S# **show arp-inspection interfaces GigabitEthernet 0/1 statistics**

Port | Forward | Source MAC Failures | Dest MAC Failures | SIP Validation Failures | DIP Validation Failures | IP-MAC Mismatch Failures

---

gi0/1 | 0 | 0 | 0 | 0 | 0 | 0

15. Flow Control Commands

15.1 Flow Control Configuration Commands

15.1.1 Flow Control

Turn on port flow control.

flowcontrol {[on | off]}

Parameter	Parameter	Description
	on	Turn on flow control.
	off	Turn off flow control.

Default Turn off flow control.

Mode Interface configuration mode

Usage Use this command to enable or disable port flow control.

Example S2800S(config-if-GigabitEthernet0/1)# **flowcontrol on**

Command	Command	Description
	show interfaces {port-id}	View interface status information.

16. VLAN Commands

16.1 Configure Commands

16.1.1 VLAN Description

Configure the name of the VLAN. Use this command's no option to revert the setting to a default value.

description vlan-name

no description

Parameter

Parameter	Description
vlan-name	The name of the VLAN.

Default VLAN default name is: VLAN+VLAN ID, eg: VLAN 2 default name" VLAN0002"

Mode VLAN Configuration mode.

Usage Use **show vlan** to view the configure of vlan

Example S2800S(config)# vlan 3

S2800S(config-vlan)# description nihao

Command

Command	Description
show vlan	Display VLAN member ports and other information.

16.1.2 VLAN

Use command vlan vlan-id to inter configuration mode. Use the no option of the command to remove the existing VLAN.

vlan vlan-id

no vlan vlan-id

Parameter

Parameter	Description
vlan-id	VLAN ID number (1-4094). Notice: The default VLAN (VLAN 1) cannot be delete.

Default VLAN 1

Mode Global configuration mode.

Usage If the input VLAN vlan-id does not exist, the system requirement creates VLAN and enters the VLAN. Existence goes into VLAN

Example S2800S(config)# vlan 5

S2800S(config)# no vlan 5

Command

Command	Description
show vlan	Display VLAN member ports and other information.

16.1.3 Switch Mode

Using this command specifies a two - layer interface (switch port) mode, which can be specified as access /trunk/hybrid port. Use the switch mode access option to revert the schema of the interface to default values

switch mode [access | trunk | hybrid]

Parameter

Parameter	Description
access	Configure a switch port mode is access.
trunk	Configure a switch port mode is trunk.
hybrid	Configure a switch port mode is hybrid.

Default The switch port default mode is access.

Mode Interface configuration mode.

If a switch port mode is access, this port can only be a member of a VLAN. Use command:

switch access vlan specifies which VLAN is the member of the interface. If a switch port mode trunk or hybrid and this port can be a member of multiple VLANs. This port

Usage Which VLAN the interface can belong to is determined by the licensing VLAN list of the interface. Trunk port or hybrid port are all VLAN members in the list of license VLAN. Use **switch {trunk | hybrid}** Command to define the licensing VLAN list of interfaces.

Example Configure the port1 mode is trunk:

S2800S(config)# interface GigabitEthernet 0/1

S2800S(config-if-GigabitEthernet0/1)# switch mode trunk

Command

Command	Description
show vlan	Display configuration of VLAN information.

16.1.4 Management VLAN

Use command management vlan id to inter configuration mode. Use the no option of the command to remove the created management VLAN.

Management-vlan vlan vlan-id

no management-vlan

Parameter

Parameter	Description
vlan-id	VLAN ID number (1-4094).

Default management-vlan vlan 1

Mode Global configuration mode.

Usage If the input VLAN vlan-id does not exist, the system requirement creates VLAN and enters the VLAN. Existence goes into VLAN.

Example ECS2020-S2800S(config)# management-vlan vlan 4

S2800S(config)# no management-vlan

Command

Command	Description
show vlan	Display configuration of VLAN information.

16.2 Configure Different Types of VLAN.

16.2.1 Access VLAN

In port mode, configure the access attribute of the port.

switch access vlan vlan-id

Parameter

Parameter	Description
vlan-id	Port to join VLAN's ID.

Default Port default mode is access, default VLAN is VLAN 1.

Command Interface configuration mode.

Usage Enter a VLAN ID. If the input is an VLAN ID that is not created, the device will

indicate that the VLAN does not exist. If the input is already existing VLAN

ID, the VLAN member port is increased.

Example configure port 1 belong to VLAN 2:

S2800S(config)# interface GigabitEthernet 0/1

S2800S(config-if-GigabitEthernet0/1)# switch access vlan 2

Command

Command	Description
show vlan	Display configuration of VLAN information.

16.2.2 Trunk Allowed VLAN

Specify a native VLAN for a trunk port and a list of permissions to configure this Trunk port VLAN. Use the no option of this command to restore the trunk property of the interface to the default value.

switch trunk allowed vlan vlan-id

no switch trunk allowed vlan

Parameter

Parameter	Description
allowed vlan vlan-list	Configure the permission VLAN list for this Trunk port. The parameter vlan-list can be either a VLAN or a series of VLAN, beginning with a small VLAN ID and ending with a large VLAN ID, with the (-) symbolic connection in the middle. Such as: 10-20. Segments can be separated by symbols, such as: 1-10,20-25,30,33. The meaning of all is that the permission VLAN list contains all supported VLAN; the add indicates that the specified VLAN list is added to the license VLAN list; the remove indicates that the specified VLAN list is removed from the license VLAN list.

Default Port default mode is access, default VLAN is VLAN 1.

Mode Interface configuration mode

Usage Enter a VLAN ID. If the input is an VLAN ID that is not created, the device will Indicate that the VLAN does not exist.

If the input is already existing VLAN ID, the VLAN member port is increased.

Example Configure port 1 belong to VLAN 3:

S2800S(config)# interface GigabitEthernet 0/1

S2800S(config-if-GigabitEthernet0/1)# switch trunk allowed vlan 3

Command

Command	Description
show vlan	Display configuration of VLAN information.

16.2.3 Trunk Native VLAN

Specify a native VLAN for a trunk port and a list of permissions to configure this Trunk port VLAN. Use the no option of this command to restore the trunk property of the interface to the default value.

switch trunk native vlan vlan-id

no switch trunk native vlan

Parameter

Parameter	Description
native vlan	Trunk port message received, if the message with VLAN mark, then put this message to the corresponding VLAN tag, if the message with no VLAN mark, then the message is forwarded to the port of native VLAN.

Default Default VLAN is VLAN 1.

Mode Interface configuration mode.

Usage To configure the Trunk native VLAN of a port, this port must be the trunk property.

Example configure gig0/1 belong to native vlan3

S2800S(config)# interface gig 0/1

S2800S(config-if-GigabitEthernet0/1)# switch trunk native vlan 3

Command

Command	Description
show vlan	Display configuration of VLAN information.

16.2.4 Hybrid VLAN

The permission VLAN list of Hybrid ports configured for a port. Use the no option of this command to restore the Hybrid property of the interface to the default value.

switch hybrid vlan vlan-id [**tagged** | **untagged**]

no switch hybrid vlan vlan-id [**tagged** | **untagged]**

Parameter

Parameter	Description
no	Restore the hybrid default output rule.

Default Untagged.

Mode Interface configuration mode.

Usage NULL

Example S2800S(config)# interface GigabitEthernet 0/1

S2800S(config-if-GigabitEthernet0/1)# switch hybrid vlan 3 untagged

Command

Command	Description
show vlan	Display configuration of VLAN information.

16.2.5 Hybrid Native VLAN

Specify a native VLAN for a hybrid port. Use the no option of this command to restore the Hybrid property of the interface to the default value.

switch hybrid native vlan vlan-id

no switch hybrid native vlan

Parameter

Parameter	Description
no	Restore Hybrid default VLAN.

Default Default native vlan is vlan 1.

Mode Interface configuration mode.

Usage To configure the Hybrid native VLAN of a port, this port must be the Hybrid property.

Example S2800S(config)# interface GigabitEthernet 0/1

S2800S(config-if-GigabitEthernet0/1)# switch hybrid native vlan 3

Command

Command	Description
show vlan	Display configuration of VLAN information.

16.3 Display Relevant Commands

16.3.1 Show VLAN

Display VLAN member ports and other information.

show vlan [**id** vlan-id]

Parameter

Parameter	Description
vlan-id	The number of VLAN ID.

Default Show all information by default.

Mode Privileged mode.

To return to privileged mode, enter the end command, or type the Ctrl+Z combination key.

Usage To return to global configuration mode, enter the exit command

Example S2800S# show vlan 3

```
 VID    | VLAN Name   | Untagged Ports     | Tagged Ports     | Type
---------+-------------------+------------------------+----------------------+---------------
 3      | VLAN0003    | gi0/1              |                  | Static
```

Command

Command	Description
show vlan vlan-id	Display configuration of VLAN information.

17. Voice VLAN

17.1 Configure Commands

17.1.1 Voice VLAN

First create a VLAN, and voice VLAN to specify a VLAN has been created to enable the voice VLAN ID. Use the "no" command to close voice VLAN. Voice VLAN is disable by default.

voice-vlan vlan id

voice-vlan

no voice-vlan

Parameter	Parameter	Description
	voice-vlan vlan id	The number of voice-vlan id Notice: The voice VLAN ID cannot be same as surveillance VLAN ID.

Default NULL

Mode Global configuration mode.

Usage Use **show voice-vlan** to view the configure of voice-vlan

Example S2800S(config)# voice-vlan vlan 2

S2800S(config)# voice-vlan

Command	Command	Description
	show voice-vlan	View global configuration information for voice VLAN.

17.1.2 Voice-VLAN Mode

Using this command specifies a two - layer interface (switch port) mode, which can be specified as autotag/autountag/manual for switch port. Use the voice-vlan mode autoTag option to revert the schema of the interface to default values. Notice: Ports cannot configure voice-vlan on the access port!

Voice-vlan mode [autoTag | autounTag | manual]

Parameter	Parameter	Description
	autoTag	The voice VLAN mode for configuring ports is autoTag.
	autounTag	The voice VLAN mode for configuring ports is autounTag.
	manual	The voice VLAN mode for configuring ports is manual.

Default The voice-vlan default mode is autoTag.

Mode Interface configuration mode.

Usage If the port set voice VLAN mode is autoTag, the port is automatically joined with voice VLAN, with tag. If the mode is autountag, the port is automatically added to the voice VLAN without tag. Note: when adding the voice VLAN mode to manually join the port, you need to forward the port to the voice VLAN in advance

Example Configure port 1 to join voice VLAN as autotag

S2800S(config)# interface GigabitEthernet 0/1

S2800S(config-if-GigabitEthernet0/1)# voice-vlan mode autoTag

Command

Command	Description
show voice-vlan	Display configuration of voice-vlan information.

17.1.3 Voice VLAN OUI

In global configuration mode, set OUI-table and note that the MAC address cannot be multicast and broadcast addresses. Mask cannot enter zero before F.

S2800S(config)# voice-vlan oui-table A:B:C:D:E:F mask

A:B:C:D:E:F

Parameter

Parameter	Description
voice-vlan oui-table	Match the filter's source MAC address for the incoming message.

Default The voice-vlan oui-table defaults to 8 rules.

Mode Global configuration mode.

Usage In global settings, oui-table adds the port to the voice VLAN when the port's source MAC address matches the address in the OUI list.

Example Configure voice VLAN OUI

S2800S(config)# voice-vlan oui-table 02:00:12:32:56:89 mask FF:FF:FF:FF:FF:00

Command

Command	Description
show voice-vlan interfaces GigabitEthernet 0/1	Display configuration of voice-vlan oui-table information.

17.1.4 Voice VLAN Aging-Time and CoS

In global configuration mode, set voice VLAN aging-time (1-65535) and cos (0-7).

S2800S(config)# voice-vlan aging-time X(1-65535)

S2800S(config)# voice-vlan cos X(0-7) remark

Parameter	Parameter	Description
	Aging-time	Specifies the aging time of the port in voice VLAN.
	cos	Specify the voice VLAN Class of Service.

Default The default aging-time is 720 minutes.

The default cos value is 5.

Mode Global configuration mode.

Usage The aging time and the cos value refer to the survival time and the priority of the voice message after the port is added to the voice VLAN.

Example Configure voice VLAN aging-time is 30 minutes and CoS value is 7.

S2800S(config)# voice-vlan aging-time 30

S2800S(config)# voice-vlan cos 7 remark

Command	Command	Description
	show voice-vlan	Display configuration of voice-vlan aging-time and CoS information.

17.2 Display Relevant Commands

17.2.1 Show Voice VLAN

Display VLAN member ports and other information.

Show vlan id

Show voice-vlan device

Parameter	Parameter	Description
	Vlan-id	The number of voice VLAN ID.
	Voice-vlan device	The ports in voice VLAN.

Default Show voice-vlan global information by default.

Show the ports in voice VLAN by default.

Mode Privileged mode.

Usage To return to privileged mode, enter the end command, or type the Ctrl+Z combination key.

To return to global configuration mode, enter the exit command.

Example

```
S2800S# show voice-vlan device
Interface |    MAC Address    | start-time
-------------+---------------------+--------------------------
 gi0/1       | 00E0.BB00.0000 | 2000-01-01 00:24:03


S2800S# show vlan 2
VID    | VLAN Name    | Untagged Ports     | Tagged Ports    | Type
-------+-----------------+-------------------------+-------------------+----------
 2     | VLAN0002       |                          | gi0/1               | Static
```

Command

Command	Description
show vlan vlan-id	Display configuration of voice-vlan information.
Show voice-vlan device	Display the information of ports join voice-vlan.

18. Surveillance VLAN

18.1 Configure Commands

18.1.1 Surveillance VLAN

First create a VLAN, and surveillance VLAN to specify a VLAN has been created to enable the surveillance VLAN ID. Use the "no" command to close surveillance VLAN. surveillance VLAN is disable by default.

surveillance-vlan vlan id

surveillance-vlan

no surveillance-vlan

Parameter	Parameter	Description
	surveillance-vlan vlan id	The number of surveillance-vlan id. Notice: The surveillance VLAN ID cannot be same as voice VLAN ID.

Default NULL

Mode Global configuration mode.

Usage Use **show surveillance-vlan** to view the configure of surveillance-vlan

Example S2800S(config)# surveillance-vlan vlan 3

S2800S(config)# surveillance-vlan

Command	Command	Description
	show surveillance-vlan	View global configuration information for surveillance VLAN.

18.1.2 Surveillance-VLAN Mode

Using this command specifies a two - layer interface (switch port) mode, which can be specified as auto/manual for switch port. Use the surveillance-vlan mode auto option to revert the schema of the interface to default values. Ports cannot configure surveillance-vlan on the access port!

surveillance-vlan mode [auto | manual**]**

Parameter	Parameter	Description
	auto	The surveillance VLAN mode for configuring ports is autoTag.
	manual	The surveillance VLAN mode for configuring ports is manual.

Default The surveillance-vlan default mode is auto.

Mode Interface configuration mode.

Usage If the port set surveillance VLAN mode is auto, the port is automatically joined with surveillance VLAN. Note: when adding the surveillance VLAN mode to manually join the port, you need to forward the port to the surveillance VLAN in advance

Example Configure port 1 to join surveillance VLAN as auto

S2800S(config)# interface GigabitEthernet 0/1

S2800S(config-if-GigabitEthernet0/1)# surveillance-vlan mode auto

Command

Command	Description
show surveillance-vlan interfaces GigabitEthernet 0/1	View configuration information for voice VLAN.

18.1.3 Surveillance VLAN OUI

In global configuration mode, set OUI-table and note that the MAC address cannot be multicast and broadcast addresses. Mask cannot enter zero before F.

S2800S(config)# surveillance-vlan oui-table A:B:C:D:E:F

mask A:B:C:D:E:F

Parameter

Parameter	Description
surveillance-vlan oui-table	Match the filter's source MAC address for the incoming message.

Default NULL

Mode Global configuration mode.

Usage In global settings, oui-table adds the port to the surveillance VLAN when the port's source MAC address matches the address in the OUI list.

Example Configure voice VLAN OUI.

S2800S(config)# surveillance-vlan oui-table 04:10:12:32:56:89 mask

FF:FF:FF:FF:FF:00 componentType video_encoder

Command

Command	Description
Show surveillance-vlan	Display configuration of surveillance-vlan oui-table information.

18.1.4 Surveillance VLAN Aging-time and CoS

In global configuration mode, set surveillance VLAN aging-time (1-65535) and cos (0-7).

S2800S(config)# surveillance-vlan aging-time X(1-65535)

S2800S(config)# surveillance--vlan cos X(0-7) remark

Parameter	Parameter	Description
	Aging-time	Specifies the aging time of the port in surveillance VLAN.
	cos	Specify the surveillance VLAN Class of Service.

Default The default aging-time is 720 minutes.

The default cos value is 5.

Mode Global configuration mode.

Usage The aging time and the cos value refer to the survival time and the priority of the surveillance message after the port is added to the voice VLAN.

Example Configure surveillance VLAN aging-time is 20 minutes and cos value is 7

S2800S(config)# surveillance-vlan aging-time 20

S2800S(config)# surveillance-vlan cos 7 remark

Command	Command	Description
	show surveillance-vlan	Display configuration of surveillance-vlan aging-time and CoS information.

18.2 Display Relevant Commands

18.2.1 Show Surveillance VLAN

Display VLAN member ports and other information.

Show vlan id

Show surveillance-vlan device

Parameter	Parameter	Description
	vlan-id	The number of surveillance VLAN ID.
	surveillance-vlan device	The ports in surveillance VLAN.

Default Show surveillance-vlan global information by default.

Show the ports in surveillance VLAN by default.

Mode Privileged mode.

Usage To return to privileged mode, enter the end command, or type the Ctrl+Z combination key.

To return to global configuration mode, enter the exit command

Example

```
S2800S# show surveillance-vlan device
Interface  | Component Type                | Description            | MAC Address          | start-time
-----------+------------------------------ | ---------------------- | ---------------------+-------------------
 gi0/1     | Other IP Surveillance Device |                        | 0410.1232.5689       | 2000-01-01 17:31:03
S2800S# show vlan 3
VID | VLAN Name | Untagged Ports | Tagged Ports |  Type
----+-----------+----------------+--------------+----------
3   | VLAN0003  |                |     gi0/1    |  Static
```

Command

Command	Description
show vlan vlan-id	Display configuration of surveillance-vlan information.
show surveillance-vlan device	Display the information of ports join surveillance-vlan.

19. DHCP-Snooping

19.1 Configure Commands

19.1.1 DHCP-Snooping

Enable DHCP-Snooping. If a port is a non-trusted port, then the port discards the service message (DHCP_OFFE, DHCP_ACK, DHCP_NCK). If a port is a trusted port, then the port can forward the service message normally.

dhcp-snooping

no dhcp-snooping

Parameter

Parameter	Description
dhcp-snooping	Enable dhcp-snooping.
no dhcp-snooping	Disable dhcp-snooping.

Default Disable

Mode Global configuration mode.

Usage In the global configuration mode, after opening the DHCP-snooping function, you can effectively prevent illegal servers from being established.

Example S2800S(config)# dhcp-snooping

Command

Command	Description
show dhcp-snooping	Displays the current configuration.

19.1.2 DHCP-Snooping Trust

Open the DHCP-Snooping trust function, if a port is a non-trusted port, then the port service

message received will be discarded if a port to port the port trust can normal forwarding service

Message.

dhcp-snooping trust

no dhcp-snooping trust

Parameter

Parameter	Description
dhcp-snooping trust	Configure the port is dhcp-cnooping trust.
no dhcp-snooping trust	Configure the port is dhcp-cnooping untrust.

Default Untrust

Mode Interface configuration mode.

Usage In port mode, when the port is opened, the port can forward the service message. If this port is a non-trusted port, then the port cannot forward the service message.

Example S2800S(config-if-GigabitEthernet0/2)# dhcp-snooping trust

Command

Command	Description
show dhcp-snooping	Displays the current configuration.

19.1.3 DHCP Snooping for VLAN

Enable DHCP snooping information 82 for VLAN.

Parameter

Parameter	Description
dhcp snooping vlan	Enable the DHCP snooping VLAN.

Default Enable

Mode Global configuration mode.

Usage there be DHCP snooping information 82 for VLANs enabled.

Example S2800S(config)# dhcp-snooping vlan 1-4094

Command

Command	Description
show dhcp-snooping	Display DHCP snooping information.

19.1.3 Enable DHCP Snooping Option 82

Enable DHCP snooping information 82.

Parameter

Parameter	Description
dhcp-snooping option	Enable the DHCP snooping option.

Default Disable.

Mode Interface configuration mode.

Usage There will be DHCP snooping information 82 enabled.

Example S2800S(config-if-GigabitEthernet0/1)# dhcp-snooping option

Command	Command	Description
	show dhcp-snooping	Display DHCP snooping information.

19.1.4 Option 82 of Remote-ID

Configure DHCP snooping information 82 of remote-ID

Parameter	Parameter	Description
	STRING	ID string (1~63

Default DUT's mac address.

Mode Global configuration mode.

Usage A "remote ID" containing the switch's information as a trusted identifier for the remote high-speed modem.

Example S2800S(config)# dhcp-snooping option remote-id 192.168.1.254

Command	Command	Description
	show dhcp-snooping	Display DHCP snooping information.

19.1.5 Option 82 of CID

Configure DHCP snooping information 82 of circuit-ID.

Parameter	Parameter	Description
	STRING	ID string (1~63

Default NULL

Mode Interface configuration mode.

Usage It indicates that the received DHCP request message is from the link identifier.

Example S2800S(config-if-GigabitEthernet0/1)# dhcp-snooping

option circuit-id 192.168.1.254

Command	Command	Description
	show dhcp-snooping interfaces GigabitEthernet 0/x	Display DHCP snooping of CID Information.

19.1.6 DHCP Snooping Policy

Configure global DHCP snooping policy

dhcp-snooping option action (drop | keep | replace)

Parameter	Parameter	Description
	drop	Drop packets with option82.
	keep	Keep original option82.
	replace	Replace option82 content by switch setting.

Default The global DHCP relay policy shall be drop.

Mode Global configuration mode.

Usage DHCP snooping information 82 policy

Example S2800S(config-if-GigabitEthernet0/1)# dhcp-snooping option

action drop

Command	Command	Description
	show dhcp-snooping interfaces GigabitEthernet 0/x	Display DHCP snooping information.

19.2 Display Relevant Commands

19.2.1 Show DHCP-Snooping

Displays the current DHCP-Snooping open, shutdown, and configuration information.

show DHCP-Snooping

Show DHCP-Snooping interface GigabitEthernet 0/x

Parameter	Parameter	Description
	show dhcp-snooping interfaceGigabitEthernet 0/x	Displays the current DHCP-Snooping configuration on port or Aggregateport(1-8).

Default NULL

Mode Privileged mode.

Usage View the current DHCP-snooping information.

Example

```
S2800S# show dhcp-snooping
DHCP Snooping                 : enabled
Enable on following Vlans     : 1-4094
circuit-id default format     : vlan-port
remote-id                     : 00:e0:4c:00:00:00 (Switch Mac in Byte Order)

S2800S# show dhcp-snooping interfaces GigabitEthernet 0/1
Interfaces | Trust State | Rate (pps) | hwaddr Check | Insert Option82  |
-------------+-----------------+--------------+--------------------+---------------------+
gi0/1        | Untrusted    | None         | disabled          | disabled           |
```

Command

Command	Description
show dhcp-snooping	Displays the current DHCP-Snooping configuration information.
show dhcp-snooping interfaceGigabitEthernet 0/x	Displays the current DHCP-Snooping configuration on port or Aggregateport(1-8).

20. Loopback-Detection

20.1 Configure Commands

20.1.1 Loopback-Detection

Configure loop detection, activate this function, and when loop appears on the network, the loop port is directly link-down or issued a warning.

Loopback-detection [enable | ctp-interval | resume-interval | snmp-trap]

Parameter	Parameter	Description
	enbale	Enable loop detection function defaults is disable.
	ctp-interval	ctp sending interval (1-32767).
	resume-interval	Port automatic recovery time interval (0,60-1000000) default '60', set '0' means no auto-resume.
	snmp-trap	Decide whether to send an alarm message, you need to start the SNMP function and SNMP trap first.

Default NULL

Mode Global configuration mode.

Usage In the global mode, configuration loopback-detection.

Example Configure the loopback-detection enable, ctp-interval, resume-interval, resume-interval, snmp-trap.

```
S2800S(config)# loopback-detection enable
S2800S(config)# loopback-detection ctp-interval 1
S2800S(config)# loopback-detection resume-interval 60
S2800S(config)# loopback-detection snmp-trap
```

Command	Command	Description
	show loopback-detection	View the current loop detection status and configuration information.

20.2 Display Relevant Commands

20.2.1 Show Loop-Detection

Use the following command to see loop detection information.

show loopback-detection

Parameter

Parameter	Description
show loopback-detection	View the current port loop detection status and configuration information.

Default NULL

Mode Privileged mode.

Usage In privileged mode, view configuration status information. Do not select parameters, display all.

Example Check loop-detection port configuration and status.

```
S2800S# show loopback-detection

Loopback detection configuration
Loopback detection                  : enabled
CTP tx interval                     : 10
Port resume interval                : 60
Loopback detection trap: enabled
Interfaces |   State   |    Result     |
-------------+-----------+----------------+
    gi0/1    | enabled | NORMAL      |
    gi0/2    | enabled | NORMAL      |
    gi0/3    | enabled | NORMAL      |
    gi0/4    | enabled | NORMAL      |
    gi0/5    | enabled | NORMAL      |
    gi0/6    | enabled | LOOP-SHUTDOWN  |
    gi0/7    | enabled | NORMAL      |
    gi0/8    | enabled | NORMAL      |
    gi0/9    | enabled | NORMAL      |
   gi0/10    | enabled | NORMAL      |
    agg1     | enabled | LOOP-SHUTDOWN
```

Command

Command	Description
show loopback-detection	View the current port loop detection status and configuration information.

21. Spanning-Tree

21.1 Configure Commands

21.1.1 Spanning-Tree Enable

Enable spanning-tree function, that is to avoid the loop, enable spanning tree function switch will block loop port according to the port role.

spanning-tree enable

No spanning-tree enable

Parameter

Parameter	Description
enable	Enable spanning-tree, the default is disable.
no	Disable spanning-tree.

Default Disable.

Mode Global configuration mode.

Usage In the global mode, configuration spanning-tree

Example Configuring the spanning tree to turn on and off.

S2800S(config)# spanning-tree enable

S2800S(config)# no spanning-tree enable

Command

Command	Description
show spanning-tree	View the current spanning tree status and configuration information.

21.1.2 Spanning-Tree Mode

Configure spanning-tree mode, there are three versions: STP, RSTP, MSTP

spanning-tree mode [rstp | stp | mstp]

Parameter

Parameter	Description
stp	Running the STP protocol.
rstp	Running the RSTP protocol.
mstp	Running the RSTP protocol.

Default RSTP

Mode Global configuration mode.

Usage Set the spanning tree protocol version of the switch running in global mode.

Example Set the protocol version of the switch running to RSTP.

S2800S(config)# spanning-tree mode rstp

Command

Command	Description
show spanning-tree	View the current spanning tree status and configuration information.

21.1.3 Spanning-Tree Forward-Time

Configure spanning-tree forward-time, default 15s.

spanning-tree forward-time [4-30s]

Parameter

Parameter	Description
forward-time	Forwarding delay, the time interval in which a port switches from one state to another.

Default 15

Mode Global configuration mode.

Usage Configuring forwarding delay in global mode.

Example Configuring spanning-tree forwarding delay

S2800S(config)# spanning-tree forward-time 17

Command

Command	Description
show spanning-tree	View the current spanning tree status and configuration information.

21.1.4 Spanning-Tree Hello-Time

Configure the spanning tree to send BPDU messages to neighbor

devices at intervals, that is, the transmission frequency of BPDU.

spanning-tree hello-time [1-10s]

Parameter

Parameter	Description

	hello-time	This command is used to set the time interval for the switch to send BPDU to neighbor devices.

Default 2

Mode Global configuration mode.

Usage Set the transmit frequency of the BPDU in the switch in global mode.

Example Configuring the spanning tree BPDU transmission interval

S2800S(config)# spanning-tree hello-time 5

Command	Command	Description
	show spanning-tree	View the current spanning tree status and configuration information.

21.1.5 Spanning-Tree Max-Age

Configure port BPDU aging time. Exchange the opportunity to maintain a timer aging, every time after receipt of BPDU from the new timing, when participating in compute a spanning tree port (root port and port blocking) in a max-age BPDU message is not received after a timeout, the switch will recalculate the topology.

spanning-tree max-age [6-40s]

Parameter	Parameter	Description
	max-age	This command is used to set the switch BPDU timeout time, default 20s.

Default 20

Mode Global configuration mode.

Usage Set the BPDU timeout time of the switch in global mode.

Example Set the BPDU timeout of the switch to 30 seconds.

S2800S(config)# spanning-tree max-age 30

Command	Command	Description
	show spanning-tree	View the current spanning tree status and configuration information.

21.1.6 Spanning-Tree Max-Hops

The maximum BPDU hops of the switch-port, BPDU, is reduced by 1 per passing device. If the switch receives a hops value of 0, the BPDU message will be discarded, and the switch will control the spanning tree size by that value.

spanning-tree max-hops [1-40]

Parameter

Parameter	Description
max-hops	This command is used to set the maximum hop count of the switch BPDU, thus controlling the size of the spanning tree by default 20 times.

Default 20

Mode Global configuration mode.

Usage Sets the maximum hops count of the switch BPDU in global mode.

Example Set the BPDU maximum hops count to 30 times

S2800S(config)# spanning-tree max-hops 30

Command

Command	Description
show spanning-tree	View the current spanning tree status and configuration information.

21.1.7 Spanning-Tree Pathcost method

By default, the port automatically calculates path consumption based on port rate and specifies the criteria used when calculating path consumption. There are two calculation criteria: **dot1D-1998** and **dot1T-2001**.

spanning-tree pathcost method [dot1D-1998 | dot1T-2001]

Parameter

Parameter	Description
dot1D-1998	Use the dot1D-1998 port path consumption calculation criteria.
dot1T-2001	Use the dot1T-2001 port path consumption calculation criteria.

Default dot1T-2001

Mode Global configuration mode.

Usage In global mode, set the calculation method of switch port path consumption value.

Example Configure the port consumption value is calculated as dot1D-1998

S2800S(config)# spanning-tree pathcost method dot1D-1998

Command

Command	Description
show spanning-tree	View the current spanning tree status and configuration information.

21.1.8 Spanning-Tree Priority

The bridge priority setting spanning-tree, select one of the highest priority switches as the root

Bridge.

spanning-tree priority [0-61440]

Parameter

Parameter	Description
priority [0-61440]	Configure the bridge priority of the switch, range 0-61440, and must be a multiple of 4096, default 32768.

Default 32768

Mode Global configuration mode.

Usage Set switch bridge priority in global mode.

Example Set the switch bridge priority to 4096.

S2800S(config)# spanning-tree priority 4096

Command

Command	Description
show spanning-tree	View the current spanning tree status and configuration information.

21.1.9 Spanning-Tree MST Configuration

Configure the MSTP parameters.

spanning-tree mst configuration [cr | instance | name | revision | no]}

spanning-tree mst instance (0-15) priority (0-61440)

Parameter	Parameter	Description
	spanning-tree mst configure	Enter the MSTP configuration mode Note that "cr" means no arguments are entered.
	Instance (1-15) vlan (1-4094)	Configure the mapping relationship between the MSTP instance and the VLAN.
	name	Configuration Bridge name (Max.32 charactor).
	revision	MSTP revision level (0-65535).
	No instance x	Delete the exit instance.
	No name	Delete the instance name.
	No revision	Delete the revision.
	panning-tree mst instance (1-15) priority(0-61440)	Configure the MSTP instance priority, it must multiples of 4096.

Default NULL

Mode Global configuration mode.

Usage Set MSTP information, if create a same as other devices region, you should ensure that the MSTP version, name, instance mapping relationship of the 2 devices are the same.

Set the switch MST instance is 5, name is nihao, revision is 33 and configure the instance 5 priority is 4096.

Example

```
S2800S(config)# spanning-tree mst configuration
S2800S(config-mst)# instance 5 vlan 5
S2800S(config-mst)# name nihao
S2800S(config-mst)# revision 33
S2800S(config)# spanning-tree mst instance 5 priority 4096
```

Command	Command	Description
	show spanning-tree mst configuration	View the current spanning-tree MSTP status and configuration information.

21.1.10 Spanning-Tree Enable

[no] Enable spanning-tree on switch-port

spanning-tree [enable]

no spanning-tree enable

Parameter	Parameter	Description

	enable	Enabled port spanning tree function, the default all ports open the spanning tree function.

Default NULL

Mode Port configuration mode.

Usage Enter the port configuration mode and open/close the spanning tree function of the port.

Example Open and close the spanning tree function of GigabitEthernet0/1

S2800S(config-if-GigabitEthernet0/1)# spanning-tree enable

S2800S(config-if-GigabitEthernet0/1)# no spanning-tree enable

Command	Command	Description
	ow spanning-tree interface GigabitEthernet 0/1	Display the spanning tree status and configuration information of GigabitEthernet0/1.

21.1.11 Spanning-Tree BPDU

Configuring ports to handle BPDU.

spanning-tree bpdu [filter | guard]

Description	Parameter	Description
	filter	Configuration port neither receives nor sends BPDU messages
	guard	Do not receive BPDU messages.

Default NULL

Mode Port configuration mode.

Usage Enter the port configuration mode and set the port's BPDU processing mode.

Example The BPDU setting GigabitEthernet0/1 is handled as guard.

S2800S(config-if-GigabitEthernet0/1)# spanning-tree bpdu guard

Command	Command	Description
	ow spanning-tree interface GigabitEthernet 0/1	Display the spanning tree status and configuration information of GigabitEthernet 0/1.

21.1.12 Spanning-Tree Cost

Configure the port external path cost, and the switch sends BPDU to the downstream switch, which adds the cast value of the transmit port to the cast field of the BPDU.

spanning-tree cost [1-200000000]

Parameter

Parameter	Description
cost [1-200000000]	The value of external path cost.

Default 19

Mode Port configuration mode.

Usage Enter the port configuration mode and set the cost value of the port.

Example Set the cost value of GigabitEthernet0/1 to 2000

S2800S(config-if-GigabitEthernet0/1)# spanning-tree cost 2000

Command

Command	Description
ow spanning-tree interface GigabitEthernet 0/1	Display the spanning tree status and configuration information of GigabitEthernet0/1.

21.1.13 Spanning-Tree Guard

Set port protection function.

spanning-tree guard [loop | none | root]

Parameter

Parameter	Description
loop	Set the loop to avoid the port configured with this command. The BPDU continues to remain blocked, and the loop is avoided.
root	Ports that enable this function to do not re-select the root bridge after receiving a higher priority BPDU.
none	Turn off the guard function.

Default None

Mode Port configuration mode.

Usage Enter the port configuration mode and set the port protection function.

Example Set the loop guard on GigabitEthernet0/1

S2800S(config-if-GigabitEthernet0/1)# spanning-tree guard loop

Command	Command	Description
	ow spanning-tree interface GigabitEthernet 0/1	Display the spanning tree status and configuration information of GigabitEthernet0/1.

21.1.14 Spanning-Tree Link-Type

Sets the link type of the port. By default, the switch automatically selects the link type based on the duplex mode of the port, the full duplex port is point-to-point, and the half duplex port is shared.

spanning-tree link-type [point-to-point | shared]

Parameter	Parameter	Description
	point-to-point	Set the link type is point-to-point.
	shared	Set the link type is shared.

Default The switch automatically selects the link type, the full duplex port is point-to-point, and the half duplex port is shared.

Mode Port configuration mode.

Usage Enter the port configuration mode and set the spanning-tree link-type.

Example Set the link type of GigabitEthernet0/1 to shared

S2800S(config-if-GigabitEthernet0/1)# spanning-tree link-type shared

Command	Command	Description
	ow spanning-tree interface GigabitEthernet 0/1	Display the spanning tree status and configuration information of GigabitEthernet0/1.

21.1.15 Spanning-Tree Portfast Edgeport

Some port is directly connected with PC, and the port is not possible loop, so these ports do not need to participate in the spanning tree operations, configured as edge port port linkup directly to the forwarding state, will not experience learn, listen.

spanning-tree portfast [edgeport | network]

Parameter	Parameter	Description
	edgeport	Sets the edge-port for specified port.
	network	Sets the network port for specified port.

Default Network port.

Mode Port configuration mode

Usage Enter the port configuration mode and set the port mode is edgeport

Example Set GigabitEthernet0/1 for the edgeport.

S2800S(config-if-GigabitEthernet0/1)# spanning-tree portfast edgeport

Command	Command	Description
	ow spanning-tree interface GigabitEthernet 0/1	Display the spanning tree status and configuration information of GigabitEthernet0/1.

21.1.16 Spanning-Tree Priority

Configure the bridge priority of the port. If the user wants to specify a port as the root port, the bridge priority of the port can be increased.

spanning-tree port-priority [0-240]

Parameter	Parameter	Description
	port-priority [0-240]	Sets the bridge priority of the port, with a range of 0-240 and must be a multiple of 16, default 128.

Default 128

Mode Port configuration mode.

Usage Enter the port configuration mode and set the bridge priority of the port.

Example Set the priority of GigabitEthernet0/1 to 112

S2800S(config-if-GigabitEthernet0/1)# spanning-tree port-priority 112

Command	Command	Description
	ow spanning-tree interface GigabitEthernet 0/1	Display the spanning tree status and configuration information of GigabitEthernet0/1.

21.1.17 Spanning-Tree BPDU [filtering | flooding]

BPDU packets are filtered or flood when STP is disabled on ports

spanning-tree bpdu [filtering | flooding]

Parameter	Parameter	Description
	filtering	BPDU packets are filtered when STP is disabled on ports.
	flooding	BPDU packets are flooded to all ports with STP disabled and flooding mode.

Default BPDU flooding

Mode Global configuration mode.

Usage In global mode, configure the way BPDU messages are handled.

Example When the spanning tree is closed, set the BPDU packet to filtering.

S2800S(config)# spanning-tree bpdu filtering

Command	Command	Description
	show spanning-tree	Display the spanning tree status and configuration information.

21.1.18 Spanning-Tree Trap

Spanning tree trap information.

spanning-tree trap [new-root | topology-change]

Parameter	Parameter	Description
	new-root	New root trap.
	topology-change	Topology change trap.

Default NULL

Mode Global configuration mode.

Usage In global mode, configure the spanning-tree trap information.

Example Enable the spanning-tree trap of new-root

S2800S(config)# spanning-tree trap new-root

Command	Command	Description
	show spanning-tree trap new-root	Display the spanning tree trap new-root status and configuration information.

21.2 Display Relevant Commands

21.2.1 Show Spanning-Tree

Displays the current spanning tree status and configuration information.

Spanning-tree [cr | interface GigabitEthernet 0/x | link-aggregation]

Parameter	Parameter	Description
	Interface GigabitEthernet 0/x	Display the current port spanning tree status and configuration information Note that "cr" means no arguments are entered.

Default NULL

Mode Privileged mode.

Usage In privileged mode, view the spanning tree status. Show global status without parameters

Example The following commands, from top to bottom, are to display the global state information of

the spanning tree, display the spanning tree status information of the Gi 0/1.

S2800S# show spanning-tree

S2800S# show spanning-tree interfaces GigabitEthernet 0/1

Command	Command	Description
	show spanning-tree	View the current spanning tree global state and configuration information.
	show spanning-tree interface GigabitEthernet 0/x	View the spanning tree status and configuration information for Gi0/1.

22. DHCP v4 Server

22.1 Configure Commands

22.1.1 DHCP v4 Server

Configure the DHCP server parameter, then open DHCP sever, and the downstream device gets IP from the switch.

ip dhcpserver pool

ip dhcpserver mask

ip dhcpserver gate-way

ip address

ip dhcp server

dhcp-snooping

Parameter	Parameter	Description
	ip dhcpserver pool	Configure the v4 server pool.
	ip dhcpserver mask	Configure the v4 server mask.
	ip dhcpserver gate-way	Configure the v4 server gate-way.
	ip address	The IP address of the device must be in the same network segment as the address pool of the sever .
	ip dhcp server	Enable the IP DHCP server function. Use “no” command, you can disable the function.
	dhcp-snooping	Enable the dhcp-snooping.

Default Disable.

Mode Global configuration mode.

Usage In the global configuration mode, the first parameter configuration server, to enable IPv4 server, Lower establishment access to switch in the IP address pool.

Example

```
S2800S(config)# ip dhcpserver pool 192.168.1.2-192.168.1.253
pt1:192.168.1.100, pt2:192.168.1.200
S2800S(config)# ip dhcpserver mask 255.255.255.0
S2800S(config)# ip dhcpserver gate-way 192.168.1.254
S2800S(config)# ip address 192.168.1.1
S2800S(config)# ip dhcp server
S2800S(config)# dhcp-snooping
```

Command	Command	Description
	show ip dhcp server	Displays the IP DHCP server configuration.

22.2 Display Relevant Commands

22.2.1 Show IP DHCP Server

Configure the DHCP server parameter, then open DHCP sever, and the downstream device gets IP from the switch.

Show ip dhcp server

Parameter	Parameter	Description
	show ip dhcp server	Display the configure of IP DHCP server.

Default NULL

Mode Privileged mode.

Usage View the IP DHCP server information.

Example show ip dhcp server

Command	Command	Description
	show ip dhcp server	Displays the IP DHCP server configuration.

23. IPv4 Client

23.1 Configure Commands

23.1.1 IPv4 Client

Configure the ipv4 client parameter, the switch can get IP from DHCP server

ip dhcp

no ip dhcp

Parameter	Parameter	Description
	ip dhcp	Enable IP DHCP client.
	no ip dhcp	Disable IP DHCP client.

Default Disable.

Mode Global configuration mode.

Usage In the global configure mode, enable the IP DHCP, the switch can get IP from DHCP server.

Example S2800S(config)# ip dhcp

S2800S# show ip dhcp

DHCP Status: enabled

Command	Command	Description
	show ip dhcp	Displays the IP DHCP client configuration.

23.2 Display Relevant Commands

23.2.1 ShowIPDHCP

Enable the IP DHCP , the switch can get IP from DHCP server.

Show ip dhcp

Show ip

Parameter	Parameter	Description
	show ip dhcp	Display the configure of IP DHCP.
	Show ip	Display the switch get IP from the DHCP server.

Default NULL

Mode Privileged mode.

Usage View the IP DHCP information.

Example S2800S# show ip

IP Address: 192.168.1.1

Subnet Netmask: 255.255.255.0

Default Gateway: 192.168.1.254

S2800S# show ip dhcp

DHCP Status: enabled

Command

Command	Description
show ip dhcp	Displays the IP DHCP information.
show ip	Displays the switch get IP from the DHCP server.

24. IPv6 Client

24.1 Configure Commands

24.1.1 IPv6 Client

Configure the ipv4 client parameter, the switch can get IP from DHCP server.

ipv6 dhcp

no ipv6 dhcp

ipv6 autoconfiguration

no ipv6 autoconfiguration

Parameter	Parameter	Description
	Ipv6 dhcp	Enable IPv6 DHCP client.
	no ipv6 dhcp	Disable IPv6 DHCP client.
	autoconfiguration	Enable Ipv6 auto-configuration.
	No ipv6 autoconfiguration	Disable Ipv6 auto-configuration.

Default Disable.

Mode Global configuration mode.

Usage In the global configure mode, enable the IPv6 DHCP, the switch can get IPv6 from IPv6 DHCP server.

Example

S2800S(config)# ipv6 dhcp

S2800S(config)# ipv6 autoconfiguration

Command	Command	Description
	show ipv6 dhcp	Displays the IPv6 DHCP client configuration.

24.2 Display Relevant Commands

24.2.1 Show IPv6 DHCP

Enable the ipv6 DHCP, the switch can get IP from DHCP server.

Show ip dhcp

Show ipv6

Parameter	Parameter	Description
	show ipv6 dhcp	Display the configure of IPv6 DHCP.
	Show ipv6	Display the switch get ipv6 from the IPv6 DHCP server.

Default NULL

Mode Privileged mode.

Usage View the IP DHCP information.

Example

```
S2800S# show ipv6 dhcp
DHCPv6 Status                   : enabled
S2800S# show ipv6
IPv6 DHCP Configuration         : Enabled
IPv6 DHCP DUID                  : 00:01:00:01:00:00:00:5a:00:e0:4c:00:00:00
IPv6 Auto Configuration         : Enabled
IPv6 Link Local Address         : fe80::2e0:4cff:fe00:0/64
IPv6 static Address             :
IPv6 static Gateway Address     :
IPv6 in use Address             : fd00::2e0:4cff:fe00:0/64
IPv6 in use Address             : fe80::2e0:4cff:fe00:0/64
```

Command	Command	Description
	show ipv6 dhcp	Displays the IP DHCP information.
	Show ipv6	Displays the switch get IPv6 from the IPv6 server.

25. IGMP Snooping

25.1 Command Related to Configuration

25.1.1 IP IGMP Snooping

Enable IGMP snooping in global configuration mode and add "no" to the command will disable IGMP snooping.

ip igmp snooping

no ip igmp snooping

Parameter	Parameter	Description
	None	None

Default Default is enabled.

Mode Global configuration.

Usage Use command **ip igmp snooping** to enable IGMP snooping function.

Use the **no** form of this command to disable.

You can verify settings by the **show ip igmp snooping** command.

Example S2800S(config)# **ip igmp snooping**

S2800S(config)# **no ip igmp snooping**

Command	Command	Description
	show ip igmp snooping	Verify settings of IGMP snooping.

25.1.2 IP IGMP Snooping Version

Set IGMP snooping version in global configuration mode.

ip igmp snooping version (2 | 3)

Parameter	Parameter	Description
	(2 | 3)	IGMP version 2 or version 3 mode.

Default Default is version 3.

Mode Global configuration.

Usage Use the **ip igmp snooping version** command to change IGMP support version.

You can verify settings by the **show ip igmp snooping** command.

Example The following example specifies that set IP IGMP snooping version 2.

Switch(config)#**ip igmp snooping version 2**

Command

Command	Description
Show ip igmp snooping	Verify settings of IGMP snooping.

25.1.3 IP IGMP Snooping VLAN

Enable IGMP snooping of specific VLAN, please input IP IGMP snooping vlan vlan-list in Global configuration mode. and add "no" to the command will disable the IGMP snooping function of the VLAN.

ip igmp snooping vlan VLAN-LIST

Parameter

Parameter	Description
VLAN-LIST	Specifies VLAN ID list to set.

Default Default is disable for all VLANs.

Mode Global configuration.

Usage Disable will clear all IP IGMP snooping dynamic group and dynamic router port and make all static IP IGMP invalid of this VLAN. Will not learn dynamic group and router port by IGMP message anymore.

Use the **ip igmp snooping vlan** command to enable IGMP on VLAN.

Use the **no** form of this command to disable

You can verify settings by the **show ip igmp snooping vlan** command.

Example The following example specifies that set IP IGMP snooping VLAN test：

S2800S(config)# **ip igmp snooping vlan 2**

Command

Command	Description
Show ip igmp snooping vlan	Verify settings of IGMP snooping.

25.1.4 IP IGMP Snooping Fast-Leave

Enable IGMP snooping fast-leave function, If there is only one member of the group, and device receive leave report from the member, the group will leave immediately.

ip igmp snooping fast-leave

Parameter

Parameter	Description
None	None

Default Default is disable.

Mode Global configuration.

Usage Use the **ip igmp snooping fast-leave enable** command to enable fast-leave function.

Use the **no** form of this command to disable

You can verify settings by the **show ip igmp snooping vlan** command.

Example The following example specifies that set IP IGMP snooping fast-leave test：

S2800S(config)# **ip igmp snooping fast-leave**

Command

Command	Description
Show ip igmp snooping vlan	Verify settings of IGMP snooping.

25.1.5 IP IGMP Snooping Suppression

Enable IGMP snooping of suppression function, router port will just forward one report packet when received many the same group join packet. and the function is invalid in IGMP snooping v3.

ip igmp snooping suppression

Parameter

Parameter	Description
None	None.

Default Default is disable.

Mode Global configuration.

Usage Use the **ip igmp snooping suppression** command to enable suppression function.

Use the **no** form of this command to disable

You can verify settings by the **show ip igmp snooping vlan** command.

Example The following example specifies that set ip igmp snooping suppression test：

S2800S(config)# **ip igmp snooping suppression**

Command	Command	Description
	Show ip igmp snooping vlan	Verify settings of IGMP snooping.

25.1.6 IP IGMP Snooping Unknown-Multicast Action

Set the action when received unknown-multicast.

ip igmp snooping unknown-multicast action (drop | flood | router-port)

Parameter	Parameter	Description
	(drop | flood | router-port)	Drop/flood in VLAN or forward to router port of unknown multicast packet.

Default Default is drop.

Mode Global configuration.

When IGMP and MLD snooping disable, it can't set action router port.

Usage When disable IGMP snooping & MLD snooping, it set unknown multicast action flood. When action is router-port to flood or drop, it will delete the unknown multicast group entry.

Use the **ip igmp snooping unknown-multicast action** command to change action.

You can verify settings by the **show ip igmp snooping vlan** command.

Example The following example specifies the set IP IGMP unknown-multicast test：

S2800S(config)# **ip igmp snooping unknown-multicast action drop**

Command	Command	Description
	Show ip igmp snooping vlan	Verify settings of IGMP snooping.

25.1.7 IP IGMP Snooping VLAN Mrouter

Add static router port for vlan.

ip igmp snooping vlan VLAN-LIST **mrouter interfaces GigabitEthernet | Aggregateport IF_PORTS**

No ip igmp snooping vlan VLAN-LIST **mrouter interfaces GigabitEthernet | Aggregateport IF_PORTS**

Parameter	Parameter	Description

	VLAN-LIST	Specifies VLAN ID list to set.
	IF-PORTS	Specifies a port list to set or remove.

Default None static router ports by default.

Mode Global configuration.

Usage Use the **ip igmp snooping vlan mrouter** command to add static router port. All query packets will forward to this port.

Use the **no** form of this command to delete static router port.

You can verify settings by the **show ip igmp snooping vlan** command.

Example The following example specifies that set ip igmp snooping static router port test:

S2800S(config)# ip igmp snooping vlan 2 mrouter interfaces GigabitEthernet 0/5

Command

Command	Description
show ip igmp snooping vlan	Verify the IP IGMP snooping Information.

25.1.8 IP IGMP Snooping VLAN Mrouter Learn

Enable learning router port by routing protocol packets such as PIM/PIMv2, DVMRP, MOSPF. Use the no form of this command to disable.

ip igmp snooping vlan VLAN-LIST **mrouter learn pim-dvmrp**

No ip igmp snooping vlan VLAN-LIST **mrouter learn pim-dvmrp**

Parameter

Parameter	Description
VLAN-LIST	Specifies VLAN ID list to set.
IF-PORTS	Specifies a port list to set or remove.

Default Default is enabled.

Mode Global configuration.

Usage Use the **ip igmp snooping vlan mrouter learn pim-dvmrp** command to Enable learning router port by routing protocol packets such as PIM/PIMv2, DVMRP, MOSPF.

Use the **no** form of this command to disable.

You can verify settings by the **show ip igmp snooping vlan** command.

Example The following example specifies that enable learning router port test:

S2800S(config)# **ip igmp snooping vlan 2 mrouter learn pim-dvmrp**

Command	Command	Description
	show ip igmp snooping vlan	Verify the IP IGMP snooping Information.

25.1.9 IP IGMP Snooping VLAN Static

Add a static group.

ip igmp snooping vlan VLAN-LIST **static** group-address **interfaces GigabitEthernet** | **Aggregateport IF_PORTS**

no ip igmp snooping vlan VLAN-LIST **static** group-address **interfaces GigabitEthernet** | **Aggregateport IF_PORTS**

Parameter	Parameter	Description
	Ip-addr	Specifies multicast group IPv4 address.
	IF-PORTS	Specifies a port list to set or remove.

Default No static group by default.

Mode Global configuration.

Usage Use the **ip igmp snooping vlan static** command to add a static group. The static group will not learn other dynamic ports. If the dynamic group exist, then the static group will overlap the dynamic group. The static group set to valid unless IGMP snooping VLAN enable.

Use the **no** form of this command to delete static group. If remove the last member of static group, the static group will be deleted.

You can verify settings by the **show ip igmp snooping group** command.

Example The following example specifies that set ip igmp snooping static group test：

S2800S(config)# **ip igmp snooping vlan 2 static 239.1.1.1 interfaces GigabitEthernet 0/6**

Command	Command	Description
	show ip igmp snooping group	Verify the static group.

25.1.10 IP IGMP Snooping VLAN Querier

Enable querier for vlan. and add "no" to the command will disable querier function.

ip igmp snooping vlan VLAN-LIST **querier**

no ip igmp snooping vlan VLAN-LIST **querier**

Parameter

Parameter	Description
VLAN-LIST	Specifies VLAN ID list to set.

Default No IP IGMP snooping querier by Default.

Mode Global configuration.

Usage When enable IP IGMP VLAN querier, there will process router select, the select successful will send general and specific query.

Use the **ip igmp snooping vlan querier** command to add querier.

Use the **no** form of this command to delete querier.

You can verify settings by the **show ip igmp snooping querier** command.

Example The following example specifies that enable VLAN querier test：

S2800S(config)# **ip igmp snooping vlan 2 querier**

Command

Command	Description
show ip igmp snooping querier	Verify the querier information.

25.1.11 IP IGMP Snooping VLAN Querier Version

Set IGMP snooping querier version in global configuration mode.

ip igmp snooping vlan VLAN-LIST **querier version** (2 | 3)

Parameter

Parameter	Description
VLAN-LINST	Specifies VLAN ID list to set.
(2 | 3)	Query version 2 or 3.

Default Enable IP IGMP snooping querier, the default querier version is 2.

Mode Global configuration.

Usage Use the **ip igmp snooping vlan querier version** command to set querier version.

You can verify settings by the **show ip igmp snooping querier** command.

Example The following example specifies that set IP IGMP snooping querier version test:

S2800S(config)# **ip igmp snooping vlan 2 querier version 3**

Command

Command	Description
show ip igmp snooping querier	Verify the querier.

25.1.12 IP IGMP Snooping VLAN Querier Last-Member-Query-Count

Set IGMP snooping querier last-member-query-count.

ip igmp snooping vlan VLAN-LIST **querier last-member-query-count** <1-7>

no ip igmp snooping vlan VLAN-LIST **querier last-member-query-count**

Parameter

Parameter	Description
VLAN-LINST	Specifies VLAN ID list to set.
last-member-query-count<1-7>	Specifies last member query count to set.

Default Default is 2.

Mode Global configuration.

Usage Use the **ip igmp snooping vlan querier last-member-query-count** command to change how many query packets will be sent.

Use the **no** form of this command to restore to default.

You can verify settings by the **show ip igmp snooping vlan** command.

Example The following example specifies that set IP IGMP snooping querier last-member-query-count test:

S2800S(config)# **ip igmp snooping vlan 2 querier last-member-query-count 5**

Command

Command	Description
show ip igmp snooping vlan	Verify the querier information.

25.1.13 IP IGMP Snooping VLAN Querier Last-Member-Query-Interval

Set IGMP snooping querier last-member-query-interval.

ip igmp snooping vlan VLAN-LIST **querier last-member-query-interval** <1-25>

no ip igmp snooping vlan VLAN-LIST **querier last-member-query-interval**

Parameter

Parameter	Description
VLAN-LIST	Specifies VLAN ID list to set.
last-member-query-interval <1-25>	Specifies last member query interval to set.

Default Default is 1.

Mode Global configuration.

Usage Use the **ip igmp snooping vlan querier last-member-query-interval** command to set interval between each query packet.

Use the **no** form of this command to restore to default.

You can verify settings by the **show ip igmp snooping vlan** command.

Example The following example specifies that set ip igmp snooping querier last-member-query-interval test:

S2800S(config)# **ip igmp snooping vlan 2 querier last-member-query-interval 10**

Command

Command	Description
show ip igmp snooping vlan	Verify the querier information.

25.1.14 IP IGMP Snooping VLAN Querier Max-Response-Time

Set IGMP snooping querier max-response-time.

ip igmp snooping vlan VLAN-LIST **querier max-response-time** <5-20>

no ip igmp snooping vlan VLAN-LIST **querier max-response-time**

Parameter

Parameter	Description
VLAN-LIST	Specifies VLAN ID list to set.
last-member-query-interval <5-20>	Specifies a response time to set.

Default Default is 10.

Mode Global configuration.

Usage Use the **ip igmp snooping vlan querier max-response-time** command to set

response-time.

Use the **no** form of this command to restore to default.

You can verify settings by the **show ip igmp snooping vlan** command.

Example The following example specifies that set IP IGMP snooping querier max-response-time

Test:

S2800S(config)# **ip igmp snooping vlan 2 querier max-response-time 20**

Command

Command	Description
show ip igmp snooping vlan	Verify the querier information.

25.1.15 IP IGMP Snooping VLAN Querier Query-Interval

Set IGMP snooping querier Interval between each query.

ip igmp snooping vlan VLAN-LIST **querier query-interval** <30-18000>

no ip igmp snooping vlan VLAN-LIST **querier query-interval**

Parameter

Parameter	Description
VLAN-LIST	Specifies VLAN ID list to set.
query-interval <5-20>	Specifies a response time to set.
VLAN-LIST	Specifies VLAN ID list to set.

Default Default is 125.

Mode Global configuration.

Usage Use the **ip igmp snooping vlan querier query-interval** command to set

Interval between each query.

Use the **no** form of this command to restore to default.

You can verify settings by the **show ip igmp snooping vlan** command.

Example The following example specifies that set IP IGMP snooping querier version test：

S2800S(config)# **ip igmp snooping vlan 2 querier query-interval 200**

Command

Command	Description
show ip igmp snooping vlan	Verify the querier information.

25.1.16 IP IGMP Snooping VLAN Robustness-Variable

Set IGMP snooping querier robustness-variable.

ip igmp snooping vlan VLAN-LIST **robustness-variable** <1-7>

no ip igmp snooping vlan VLAN-LIST **robustness-variable**

Parameter	Parameter	Description
	VLAN-LIST	Specifies VLAN ID list to set.
	robustness-variable <1-7>	Specifies a robustness value to set.

Default Default is 2.

Mode Global configuration.

Usage Use the **ip igmp snooping vlan robustness-variable** command to times to retry.

Use the **no** form of this command to restore to default.

You can verify settings by the **show ip igmp snooping vlan** command.

Example The following example specifies that set IP IGMP snooping querier robustness-variable

Test:

S2800S(config)# **ip igmp snooping vlan 1 robustness-variable 5**

Command	Command	Description
	show ip igmp snooping vlan	Verify the querier information.

25.1.17 IP IGMP Profile

Add IGMP profile if you want to permit or deny some groups.

ip igmp profile <1-128>

no Ip igmp profile <1-128>

Parameter	Parameter	Description
	<1-128>	Specifies profile ID.

Default No profile exists by default.

Mode Global configuration.

Usage Use the **ip igmp profile** command to enter profile configuration.

Use the **no** form of this command to delete profile.

You can verify settings by the **show ip igmp profile** command.

Example The following example specifies that set IP IGMP snooping profile test:

S2800S(config)# **ip igmp profile 1**

Command	Command	Description
	show ip igmp profile	Verify the IP IGMP profile information.

25.1.18 Profile Range

Configure IGMP profile if you want to permit or deny some groups.

Profile rang ip <ip-addr> [ip-addr] **action (permit** | **deny)**

Parameter	Parameter	Description
	<ip-addr>	Start ipv4 multicast address.
	[ip-addr]	End ipv4 multicast address.
	(permit | **deny)**	Permit: allow Multicast address rang IP address learning Deny: do not allow Multicast address rang IP address learning.

Default None.

Mode IGMP profile configuration mode.

Usage Use the **profile** command to generate IGMP profile.

You can verify settings by the **show ip igmp profile** command.

Example The following example specifies that set IP IGMP snooping profile test:

S2800S(config)# **ip igmp profile 1**

S2800S(config)# **profile range ip 225.1.1.1 225.1.2.1 action permit**

Command	Command	Description

Show ip igmp profile	Verify the IP IGMP profile information.

25.1.19 IP IGMP Filter

Use IP IGMP filter command to bind a profile for port.

ip igmp filter <1-128>

no Ip igmp filter

Parameter

Parameter	Description
<1-128>	Specifies profile ID.

Default None.

Mode Port configuration.

Usage Use the **ip igmp filter** command to bind a profile for port. When the port bind a profile. Then the port learning group will update, if the group is not matching the profile rule it will remove the port from the group. Static group is excluded.

Use the **no** form of this command to delete profile.

You can verify settings by the **show running-config** command.

Example The following example specifies that set IP IGMP filter test.

```
S2800S(config)# interface GigabitEthernet 0/1
S2800S(config-if-GigabitEthernet0/1)# ip igmp filter 1
```

Command

Command	Description
Show running-config	Verify the IP IGMP profile information.

25.2 Command Related to Display and Monitoring

25.2.1 Clear IP IGMP Snooping Statistics

Clear IGMP snooping statistics.

clear ip igmp snooping statistics

Parameter

Parameter	Description

None	Clear all IGMP packets statistics.

Default NULL

Mode Privileged EXEC.

Usage This command will clear all the IGMP packets statistics.

You can verify settings by the **show ip igmp snooping statistics** command.

Example The following example specifies that show IP IGMP snooping statistics test.

```
S2800S#clear ip igmp snooping statistics
S2800S#show ip igmp snooping statistics
S2800S#show ip igmp snooping statistics
Packet Statistics
Total RX                    : 0
Valid RX                    : 0
Invalid RX                  : 0
Other RX                    : 0
Leave RX                    : 0
Report RX                   : 0
General Query RX            : 0
Special Group Query RX      : 0
Special Group & Source Query RX : 0
Leave TX                    : 0
Report TX                   : 0
General Query TX            : 0
Special Group Query TX      : 0
Special Group & Source Query TX : 0
```

Command

Command	Description
Show ip igmp snooping statistics	Verify IGMP snooping statistics info.

25.2.2 Clear IP IGMP Snooping Groups

Clear IGMP snooping groups.

clear ip igmp snooping groups [(dynamic | static)]

Parameter	Parameter	Description
	None	Clear IP IGMP groups include dynamic and static.
	(dynamic | static)	IP IGMP group is dynamic and static.

Default NULL.

Mode Privileged EXEC.

Usage This command will clear the IGMP groups for dynamic or static or all of type.

You can verify settings by the **show ip igmp snooping groups** command.

Example The following example specifies that show snooping groups test.

S2800S#**clear ip igmp snooping groups**

S2800S#**show ip igmp snooping groups**

VLAN | Group IP Address | Type | Life(Sec) | Port

--------+----------------------+---------+------------+-----------------

Total Number of Entry = 0

Command	Command	Description
	Show ip igmp snooping groups	Verify IGMP snooping groups info.

25.2.3 Show IP IGMP Snooping

View IGMP snooping global info.

show ip igmp snooping

Parameter	Parameter	Description
	None	None

Default None.

Mode Privileged EXEC.

Usage This command will display IP IGMP snooping global info.

Example The following example specifies that show IP IGMP snooping test.

S2800S#**show ip igmp snooping**

IGMP Snooping state : Enable

IGMP Snooping Version : v3

IGMP Fast-Leave : Disable

IGMP Report Suppression : Disable

IGMP Forward Method : mac

IGMP Unknown IP Multicast Action : Drop

IGMP Multicast router learning mode : pim-dvmrp

vlan 1

IGMP Snooping state : enabled

IGMP Fast-Leave : disabled

IGMP Multicast router learning mode : pim-dvmrp

IGMP VLAN querier : disabled

Command

Command	Description
Show ip igmp snooping	Verify settings of IGMP snooping.

25.2.4 Show IP IGMP Snooping VLAN

View IGMP snooping VLAN info.

show ip igmp snooping vlan [VLAN-LIST]

Parameter

Parameter	Description
None	Show all IP IGMP snooping VLAN info.
[VLAN-LIST]	Show specifies VLAN IP IGMP snooping info.

Default None.

Mode Privileged EXEC.

Usage This command will display IP IGMP snooping VLAN info.

Example The following example specifies that show IP IGMP snooping VLAN test.

S2800S#**show ip igmp snooping vlan**

IGMP Snooping global state : enabled

IGMP Global IGMPv2 fast-leave : disabled

IGMP Global multicast router learning mode : pim-dvmrp

vlan 1

IGMP Snooping state : enabled

IGMP Fast-Leave : disabled

IGMP Multicast router learning mode : pim-dvmrp

IGMP VLAN querier : disabled

Command

Command	Description
Show ip igmp snooping vlan	Verify settings of IGMP snooping VLAN.

25.2.5 Show IP IGMP Snooping Forward-All

Display IGMP snooping forward-all info.

show ip igmp snooping forward-all [**vlan**VLAN-LIST]

Parameter

Parameter	Description
None	Show all IP IGMP snooping VLAN forward-all info.
[VLAN-LIST]	Show specifies VLAN IP IGMP snooping forward-all info.

Default NULL

Mode Privileged EXEC.

Usage This command will display IP IGMP snooping forward-all info.

Example The following example specifies that show IP IGMP snooping forward-all test.

S2800S#**show ip igmp snooping forward-all**

lGMP Snooping VLAN : 1

IGMP Snooping static port : None

IGMP Snooping forbidden port : None

Command	Command	Description
	Show ip igmp snooping forward-all	Verify settings of IGMP snooping forward-all.

25.2.6 Show IP IGMP Snooping Groups

Display IGMP snooping groups info.

show ip igmp snooping groups [counters | dynamic | static]

Parameter	Parameter	Description
	None	Show all IP IGMP groups include dynamic and static info.
	Counters	Show dynamic and static groups counters.
	(dynamic | static)	Show dynamic or static IGMP groups.

Default None.

Mode Privileged EXEC.

Usage This command will display IP IGMP snooping groups for dynamic or static or all of type.

Example The following example specifies that show IP IGMP snooping groups test.

S2800S#**show ip igmp snooping groups**

```
VLAN |  Group IP Address |  Type  |  Life(Sec)    |      Port
-------+-----------------------+-----------+----------------+-----------------
1     |       239.1.1.1       | Static  |               |      gi0/3
1     | 239.255.255.250 | Dynamic |        253      |      gi0/1

Total Number of Entry = 2
```

Command	Command	Description
	Show ip igmp snooping groups	Verify IGMP snooping groups info.

25.2.7 Show IP IGMP Snooping Mrouter

Display IGMP snooping mrouter info.

show ip igmp snooping mrouter [counters | dynamic | static]

Parameter

Parameter	Description
None	Show all IP IGMP mrouter include dynamic and static info.
(dynamic | static)	Show dynamic or static IGMP mrouter.

Default NULL

Mode Privileged EXEC.

Usage This command will display IP IGMP snooping mrouter for dynamic or static or all of type.

Example The following example specifies that show IP IGMP snooping mrouter test.

S2800S#**show ip igmp snooping mrouter**

```
VID    | Port    | type     | Expiry Time(Sec)
-------+---------+----------+-----------------------
 1     | gi0/8   | Static   |
Total Entry 1
```

Command

Command	Description
Show ip igmp snooping mrouter	Verify IGMP snooping mrouter info.

25.2.8 Show IP IGMP Snooping Querier

Display IGMP snooping querier info.

show ip igmp snooping querier

Parameter

Parameter	Description
None	Show all VLAN IP IGMP querie info.

Default NULL

Mode Privileged EXEC.

Usage This command will display all the static VLAN IP IGMP mrouter info.

Example The following example specifies that show IP IGMP snooping querier test.

S2800S#**show ip igmp snooping querier**

```
 VID   | State       | Status           | Version   | Querier IP
-------+-------------+------------------+-----------+-------------------
 1     | Disabled    | Non-Querier      | No        |

Total Entry 1
```

Command	Command	Description
	Show ip igmp snooping querier	Verify IGMP snooping querier info.

26. MLD Snooping

26.1 Command Related to Configuration

26.1.1 IPv6 MLD Snooping

Enable MLD snooping in global configuration mode, and add "no" to the command will disable MLD snooping.

ipv6 mld snooping

no ipv6 mld snooping

Parameter	Parameter	Description
	None	None

Default Default is enabled.

Mode Global configuration.

Usage Use command **ipv6 mld snooping** to enable IGMP snooping function.

Use the **no** form of this command to disable. Disable will clear all ipv6 MLD snooping

dynamic groups and dynamic router port and make the static ipv6 MLD group invalid. No more

dynamic group and router port by MLD message will be learned

You can verify settings by the **show ipv6 mld snooping** command.

Example S2800S(config)# **ipv6 mld snooping**

S2800S(config)# **no ipv6 mld snooping**

Command	Command	Description
	show ipv6 mld snooping	Verify settings of ipv6 MLD snooping.

26.1.2 IPv6 MLD Snooping Version

Set MLD snooping version in global configuration mode.

ipv6 mld snooping version (1 | 2)

Parameter	Parameter	Description

(1 | 2)	MLD version 1 or version 2 mode.

Default Default is version 1

Mode Global configuration.

Usage Use the **ipv6 mld snooping version** command to change MLD support version. Version 2 packet won't be processed if choose version 1.

You can verify settings by the **show ipv6 mld snooping** command.

Example The following example specifies that set ipv6 MLD snooping version 2.

Switch(config)#**ipv6 mld snooping version 2**

Command

Command	Description
Show ipv6 mld snooping	Verify settings of MLD snooping.

26.1.3 IPv6 MLD Snooping VLAN

Enable MLD snooping of specific VLAN, please input IPv6 mld snooping vlan vlan-list in Global configuration mode. And add "no" to the command will disable the MLD snooping function of the VLAN.

ipv6 mld snooping vlan VLAN-LIST

Parameter

Parameter	Description
VLAN-LIST	Specifies VLAN ID list to set.

Default Default is disable for all VLANs.

Mode Global configuration.

Usage Disable will clear all IPv6 MLD snooping dynamic group and dynamic router port and make all static ipv6 MLD invalid of this VLAN. Will not learn dynamic group and router port by MLD message anymore.

Use the **ipv6 mld snooping vlan** command to enable MLD on VLAN.

Use the **no** form of this command to disable.

You can verify settings by the **show ipv6 mld snooping vlan** command.

Example The following example specifies that set ipv6 MLD snooping VLAN test：

S2800S(config)# **ipv6 mld snooping vlan 2**

Command	Command	Description
	Showipv6 mld snooping vlan	Verify settings of MLD snooping.

26.1.4 IPv6 MLD Snooping VLAN Immediate-Leave

Enable MLD snooping VLAN immediate-leave function. If there is only one member of the group, and device receive leave packet from the member, the group will leave immediately.

ipv6 mld snooping vlan immediate-leave

Parameter	Parameter	Description
	VLAN-LIST	Specifies VLAN ID list to set.

Default Default is disable.

Mode Global configuration.

Usage Use the **ipv6 mld snooping vlan immediate-leave** command to enable VLAN immediate-leave function. Group will remove port immediately when receive leave packet.

Use the **no** form of this command to disable.

You can verify settings by the **show ipv6 mld snooping vlan** command.

Example The following example specifies thaT set IPv6 MLD snooping VLAN immediate-leave test：

S2800S(config)# **ipv6 mld snooping vlan 1 immediate-leave**

Command	Command	Description
	Show ipv6 mld snooping vlan	Verify settings of MLD snooping.

26.1.5 IPv6 MLD Snooping Report-Suppression

Enable MLD snooping of report-suppression function, router port will just forward one report packet when received many the same group join packet. And the function is invalid in MLD snooping v2.

ipv6 mld snooping report-suppression

no ipv6 mld snooping report-suppression

Parameter	Parameter	Description
	None	None

Default Default is enabled.

Mode Global configuration.

Usage Use the **ipv6 mld snooping report-suppression** command to enable report-suppression function.

Use the **no** form of this command to disable. Disable report -suppression will forward all received reports to the VLAN router ports.

You can verify settings by the **show ipv6 mld snooping** command.

Example The following example specifies that disable IPv6 MLD snooping report-suppression test：

S2800S(config)# **no ipv6 mld snooping report-suppression**

Command	Command	Description
	Show ipv6 mld snooping	Verify settings of MLD snooping.

26.1.6 IPv6 MLD Snooping Unknown-Multicast Action

Set the action when received unknown-multicast.

ipv6 mld snooping unknown-multicast action (drop | flood | router-port)

Parameter	Parameter	Description
	(drop | flood | router-port)	Drop/flood in VLAN or forward to router port of unknown multicast packet.

Default Default is flood.

Mode Global configuration.

Usage When MLD and MLD snooping disable, it can't set action router port.

When disable MLD snooping & MLD snooping, it set unknown multicast action flood. When action is router-port to flood or drop, it will delete the unknown multicast group entry.

Use the IPv6 MLD **snooping unknown-multicast action** command to change action.

You can verify settings by the **show ipv6 mld snooping** command.

Example The following example specifies the set IPv6 MLD unknown-multicast VLAN test：

S2800S(config)# **ipv6 mld snooping unknown-multicast action drop**

Command	Command	Description
	Show ipv6 mld snooping vlan	Verify settings of MLD snooping.

26.1.7 IPv6 mld Snooping VLAN Static-Router-Port

Add static router port for VLAN.

ipv6 mld snooping vlan VLAN-LIST **static-router-port GigabitEthernet** | **Aggregateport IF_PORTS**

No ipv6 mld snooping vlan VLAN-LIST **static-router-port GigabitEthernet** | **Aggregateport IF_PORTS**

Parameter	Parameter	Description
	VLAN-LIST	Specifies VLAN ID list to set.
	IF-PORTS	Specifies a port list to set or remove.

Default None static router ports by default.

Mode Global configuration.

Usage Use the IPv6 MLD snooping VLAN static-router-port command to add static router port.

All query packets will forward to this port.

Use the **no** form of this command to delete static router port.

You can verify settings by the **show ipv6 mld snooping router** command.

Example The following example specifies that set IPv6 MLD snooping static router port test：

S2800S(config)# **ipv6 mld snooping vlan 2 static-router-port GigabitEthernet 0/5**

Command	Command	Description
	show ipv6 mld snooping router	Verify the ipv6 MLD snooping router Information.

26.1.8 IPv6 MLD Snooping VLAN Router Learn

Enable learning router port by routing protocol packets such as PIM/PIMv2, DVMRP, MOSPF. Use the no form of this command to disable.

ipv6 mld snooping vlan VLAN-LIST **mrouter learn pim-dvmrp**

No ipv6 mld snooping vlan VLAN-LIST **mrouter learn pim-dvmrp**

Parameter	Parameter	Description
	VLAN-LIST	Specifies VLAN ID list to set.
	IF-PORTS	Specifies a port list to set or remove.

Default Default is enabled.

Mode Global configuration.

Usage Use the **ipv6 mld snooping vlan mrouter learn pim-dvmrp** command to Enable learning router port by routing protocol packets such as PIM/PIMv2, DVMRP, MOSPF.

Use the **no** form of this command to disable.

You can verify settings by the **show ipv6 mld snooping vlan** command.

Example The following example specifies that Enable learning router port test:

S2800S(config)# **ipv6 mld snooping vlan 2 mrouter learn pim-dvmrp**

Command	Command	Description
	show ipv6 mld snooping vlan	Verify the IPv6 MLD snooping information.

26.1.9 IPv6 MLD Snooping VLAN Static-Group

Add a static group.

ipv6 mld snooping vlan VLAN-LIST **static-group** group-address **interfaces GigabitEthernet** | **Aggregateport IF_PORTS**

no ipv6 mld snooping vlan VLAN-LIST **static-group** group-address **interfaces GigabitEthernet** | **Aggregateport IF_PORTS**

Parameter	Parameter	Description
	Ip-addr	Specifies multicast group IPv6 address.
	IF-PORTS	Specifies a port list to set or remove.

Default No static group by default.

Mode Global configuration.

Usage Use the **ipv6 mld snooping vlan static-group** command to add a static group. The static group will not learn other dynamic ports. If the dynamic group exist, then the static group will overlap the dynamic group. The static group set to valid unless MLD snooping VLAN

enable.

Use the **no** form of this command to delete static group. If remove the last member of static group, the static group will be deleted.

You can verify settings by the **show ipv6 mld snooping groups** command.

Example The following example specifies that set IPv6 MLD snooping static group test：

S2800S(config)# **ipv6 mld snooping vlan 1 static-group ff08::9 interfaces Aggregateport 0/6**

Command

Command	Description
show ipv6 mld snooping groups	Verify the static group.

26.2 Command Related to Display and Monitoring

26.2.1 Clear IPv6 MLD Snooping Statistics

Clear IPv6 MLD statistics.

clear ipv6 mld snooping statistics

Parameter

Parameter	Description
None	Clear all IGMP packets statistics.

Default None.

Mode Privileged EXEC.

Usage This command will clear all the IPv6 MLD packets statistics.

You can verify settings by the **show ipv6 mld snooping statistics** command.

Example The following example specifies that show IPv6 MLD snooping statistics test.

S2800S#**clear ipv6 mld snooping statistics**

S2800S#**show ipv6 mld snooping**

Snooping : Enabled

Report Suppression : Enabled

Operation Version : v1

Forward Method : mac

```
Unknown IPv6 Multicast Action                : Flood
Packet Statistics
Total RX                                     : 0
Valid RX                                     : 0
Invalid RX                                   : 0
Other RX                                     : 0
Leave RX                                     : 0
Report RX                                    : 0
General Query RX                             : 0
Specail Group Query RX                       : 0
Specail Group & Source Query RX              : 0
Leave TX                                     : 0
Report TX                                    : 0
General Query TX                             : 0
Specail Group Query TX                       : 0
Specail Group & Source Query TX              : 0
```

Command	Command	Description
	Show ipv6 mld snooping	Verify IPv6 MLD statistics info.

26.2.2 Clear IPv6 MLD Snooping Groups

Clear MLD snooping groups.

clear ipv6 mld snooping groups [(dynamic | static)]

Parameter	Parameter	Description
	None	Clear IPv6 MLD groups include dynamic and static .
	(dynamic | static)	Ipv6 MLD group is dynamic and static.

Default None

Mode Privileged EXEC.

Usage This command will clear the MLD groups for dynamic or static or all of type.

You can verify settings by the **show ipv6 mld snooping groups** command.

Example The following example specifies that show IPv6 MLD snooping groups test.

S2800S#**clear ipv6 mld snooping groups**

S2800S#**show ipv6 mld snooping groups**

VLAN | Group IP Address | Type | Life(Sec) | Port

-------+-------------------------+--------+-----------+------------------

Total Number of Entry = 0

Command

Command	Description
Show ipv6 mld snooping groups	Verify MLD snooping groups info.

26.2.3 Show IPv6 MLD Snooping

View MLD snooping global info.

show ipv6 mld snooping

Parameter

Parameter	Description
None	None

Default None.

Mode Privileged EXEC.

Usage This command will display IPv6 MLD snooping global info.

Example The following example specifies that show IPv6 MLD snooping test.

S2800S#**show ipv6 mld snooping**

MLD Snooping Status

Snooping : Enabled

Report Suppression : Enabled

Forward Method : mac

```
Unknown IPv6 Multicast Action     : Flood


Packet Statistics
Total RX                          : 121
Valid RX                          : 121
Invalid RX                        : 0
Other RX                          : 0
Leave RX                          : 0
Report RX                         : 121
General Query RX                  : 0
Specail Group Query RX            : 0
Specail Group & Source Query RX   : 0
Leave TX                          : 0
Report TX                         : 0
General Query TX                  : 0
Specail Group Query TX            : 0
Specail Group & Source Query TX   : 0
```

Command	Command	Description
	Show ipv6 mld snooping	Verify settings of MLD snooping.

26.2.4 Show IPv6 MLD Snooping VLAN

View MLD snooping VLAN info.

show ipv6 mld snooping vlan [VLAN-LIST]

Parameter	Parameter	Description
	None	Show all MLD snooping VLAN info.
	[VLAN-LIST]	Show specifies VLAN MLD snooping info.

Default NULL

Mode Privileged EXEC.

Usage This command will display ipv6 MLD snooping VLAN info.

Example The following example specifies that show IPv6 MLD snooping VLAN test.

S2800S#**show ipv6 mld snooping vlan 1**

MLD Snooping state disabled

MLD Global MLD fast-leave : disabled

MLD Snooping automatic learning of multicast router ports : enabled

vlan 1

MLD Snooping VLAN 1 admin : disabled

MLD Snooping oper mode : disabled

MLD Snooping robustness : admin 2 oper 2

MLD Snooping immediate leave : disabled

MLD VLAN querier : disabled

Command

Command	Description
Show ipv6 mld snooping vlan	Verify settings of MLD snooping VLAN.

26.2.5 Show IPv6 MLD Snooping Forward-All

Display mld snooping forward-all info.

show ipv6 mld snooping forward-all [**vlan**VLAN-LIST]

Parameter

Parameter	Description
None	Show all IPv6 MLD snooping VLAN forward-all info.
[VLAN-LIST]	Show specifies VLAN IPv6 MLD snooping forward-all info.

Default Show all VLAN IPv6 MLD forward all info.

Mode Privileged EXEC.

Usage This command will display ipv6 MLD snooping forward-all info.

Example The following example specifies that show IPv6 MLD snooping forward-all test.

S2800S#**show ipv6 mld snooping forward-all**

MLD Snooping VLAN : 1

MLD Snooping static port : None

MLD Snooping forbidden port : None

MLD Snooping VLAN : 2

MLD Snooping static port : None

MLD Snooping forbidden port : None

MLD Snooping VLAN : 3

MLD Snooping static port : None

MLD Snooping forbidden port : None

Command	Command	Description
	Show ipv6 mld snooping forward-all	Verify settings of MLD snooping forward-all.

26.2.6 Show IPv6 MLD Snooping Groups

Display MLD snooping groups info.

show ipv6 mld snooping groups [counters | dynamic | static]

Parameter	Parameter	Description
	None	Show all IPv6 MLD groups include dynamic and static info.
	Counters	Show dynamic and static groups counters.
	(dynamic | static)	Show dynamic or static IGMP groups.

Default None.

Mode Privileged EXEC.

Usage This command will display IPv6 MLD snooping groups for dynamic or static or all of type.

Example The following example specifies that show IPv6 MLD snooping groups test.

S2800S#**show ipv6 mld snooping groups**

VLAN | Group IP Address | Type | Life(Sec) | Port

-------+-----------------------+----------+-----------+-----------------

1 | ff02::c | Dynamic | 259 | gi0/1

1 | ff02::fb | Dynamic | 259 | gi0/1

1 | ff02::1:3 | Dynamic | 260 | gi0/1

1 | ff02::1:ff0d:3c99 | Dynamic | 259 | gi0/1

1 | ff02::1:ffc5:6583 | Dynamic | 259 | gi0/1

Total Number of Entry = 5

Command	Command	Description
	Show ipv6 mld snooping groups	Verify MLD snooping groups info.

26.2.7 Show IPv6 MLD Snooping Router

Display MLD snooping router info.

show ipv6 mld snooping router [counters | dynamic | static]

Parameter	Parameter	Description
	None	Show all IPv6 MLD router include dynamic and static info.
	(dynamic | static)	Show dynamic or static MLD router.

Default None.

Mode Privileged EXEC.

Usage This command will display IPv6 MLD snooping router for dynamic or static or all of type

Example The following example specifies that show IPv6 MLD snooping router test.

S2800S#**show ipv6 mld snooping router**

Dynamic Router Table

VID | Port | Expiry Time(Sec)

--------+--------+--------------------

Total Entry 0

Static Router Table

VID | Port Mask

----------+----------

1 | gi0/5

Total Entry 1

Forbidden Router Table

VID | Port Mask

--------+----------

Total Entry 0

Command

Command	Description
Show ipv6 mld snooping router	Verify MLD snooping router info.

27. Path Detection

27.1 Ping

Detect host is reachable or not. Includes IPv4 address, IPv6 address and domain name.

ping [HOSTNAME]

Parameter

Parameter	Description
[HOSTNAME]	Host name info.

Default None.

Mode Privileged EXEC.

Usage This command will detect host is reachable or not.

Example The following example specifies that ping test.

S2800S#**ping fe80::1104:72ba:d80d:3c99**

PING fe80::1104:72ba:d80d:3c99 (fe80::1104:72ba:d80d:3c99): 56 data bytes

64 bytes from fe80::1104:72ba:d80d:3c99: icmp6_seq=0 ttl=64 time=10.0 ms

64 bytes from fe80::1104:72ba:d80d:3c99: icmp6_seq=1 ttl=64 time=0.0 ms

64 bytes from fe80::1104:72ba:d80d:3c99: icmp6_seq=2 ttl=64 time=0.0 ms

64 bytes from fe80::1104:72ba:d80d:3c99: icmp6_seq=3 ttl=64 time=0.0 ms

Command

Command	Description
Ping	Add the host name after the command will check the host is reachable or not.

27.2 Traceroute

Trace route to network hosts. And record the routing information to the host, includes IPv4 address,

IPv6 address and domain name.

traceroute [HOSTNAME]

Parameter

Parameter	Description
[HOSTNAME]	Host name info.

Default NULL

Mode Privileged EXEC.

Usage This command will record the routing information to the host.

Example The following example specifies that traceroute test.

S2800S#**traceroute www.google.com**

Command

Command	Description
traceroute	Add the host name after the command will display the routing information to the host.

28. Access Control List

28.1 Configure Commands

28.1.1 Standard IP Access-List

Configure the standard IP access-list. By a series of match rules, we can filter network data.

ip access-list standard {ACL-name}

no ip access-list standard {ACL-name}

Parameter	Parameter	Description
	ACL-name	The name of the ACL (0-9).

Default	NULL
Mode	Configuration mode
Usage	Configuration access control list
Example	ip access-list standard 0

Command	Command	Description
	show access-list	Display access control list information.

28.1.2 Extended IP Access-List

Configure the extended ip access-list. By a series of match rules, we can filter network data.

ip access-list extended {ACL-name}

no ip access-list extended {ACL-name**}**

Parameter	Parameter	Description
	ACL-name	The name of the ACL (10-19).

Default	NULL
Mode	Configuration mode
Usage	Configuration access control list
Example	ip access-list extended 10

Command	Command	Description
	show access-list	Display access control list information.

28.1.3 ACE Configuration

Under the IP access-list, config the specific rules.

ip access-list {standard | extended} {0-9 | 10-19}

[0-9 | deny | end | exit | help | no | permit**]**

Parameter	Parameter	Description
	0-9	Config ace number, optional, Default value is 0.
	deny	Deny assignable data type, parameter has [any | host | sip].
	end	Quit.
	exit	Back to Previous Level.
	no	Delete the rules.
	permit	Permit assignable data type, parameter has [any | host | sip].

Default NULL

Mode ACL configuration mode

Usage Configuration ACE

Example **ip access-list standard** 0

permit any

ip access-list extended 10

permit ip any any

Command	Command	Description
	show access-list	Display access control list information.

28.1.4 Standard IP Access-List Deny | Permit

Under the standard IP access-list, config the deny or permit rules.

ip access-list standard {0-9}

[ace_id] {**deny** | **permit**} {any | host | sip}

ip access-list standard {0-9}

no {ace_id}

Parameter	Parameter	Description
	any	Any source IP address.
	host	Host IP address.
	sip	Assignable source IP address and mask.
	ace_id	ACE number (0-9).

Default NULL

Mode ACL configuration mode.

Usage Configuration ACE

Example **ip access-list standard** 0

permit any

Command	Command	Description
	show access-list	Display access control list information.

28.1.5 Extended IP Access-List Deny | Permit

Under the extended ip access-list, config the deny or permit rules.

ip access-list extended {10-19}

[ace_id] {**deny** | **permit**} {ip | tcp | udp} {any | host | sip} [eq] {any | host | dip} [eq]

ip access-list extended {10-19}

no {ace_id}

Parameter	Parameter	Description
	ip	**tcp**	**udp**	Protocol type.
	any	Any source IP address.
	host	Host IP address.
	sip	Assignable source IP address and mask.
	dip	Assignable dest IP address and mask.

	eq	TCP/UDP port filtering.

Default NULL

Mode ACL configuration mode.

Usage Configuration ACE.

Example **ip access-list extended** 10

permit ip any any

Command

Command	Description
show access-list	Display access control list information.

28.1.6 IP Access-List Commit

Use this command, will be ACL Apply to the interface. We can filter rx data.

interface GigabitEthernet {port_id}

ip access-list {ACL-name} **commit**

interface GigabitEthernet {port_id}

no ip access-list {ACL-name} **commit**

Parameter

Parameter	Description
port_id	Interface ID.
ACL-name	The name of the ACL.

Default NULL

Mode Interface configuration mode.

Usage Apply the ACL.

Example **interface GigabitEthernet 0/1**

ip access-list 0 commit

Command **NULL**

28.1.7 Standard IPv6 Access-List

Configure the standard ipv6 access-list. By a series of match rules, we can filter network ipv6 data.

ipv6 access-list standard {ACL-name}

no ipv6 access-list standard {ACL-name}

Parameter

Parameter	Description
ACL-name	The name of the ACL (26-35).

Default NULL

Mode Configuration mode.

Usage Configuration access control list.

Example **ipv6 access-list standard** 26

Command

Command	Description
show access-list	Display access control list information.

28.1.8 Extended IPv6 Access-List

Configure the extended IPv6 access-list. By a series of match rules, we can filter network IPv6 data.

ipv6 access-list extended {ACL-name}

no ipv6 access-list extended {ACL-name**}**

Parameter

Parameter	Description
ACL-name	The name of the ACL (36-45).

Default NULL

Mode Configuration mode

Usage Configuration access control list

Example **ip access-list extended 36**

Command

Command	Description
show access-list	Display access control list information.

28.1.9 IPv6 ACE Configuration

Under the ipv6 access-list, config the specific rules.

ipv6 access-list {standard | extended**} {**26-35 | 36-45**}**

[0-9 | deny | end | exit | help | no | permit]

Parameter	Parameter	Description
	0-9	Config ace number, optional, Default value is 0.
	deny	Deny assignable data type, parameter has [any | host | sip].
	end	Quit.
	exit	Back to Previous Level.
	no	Delete the rules.
	permit	Permit assignable data type, parameter has [any | host | sip].

Default NULL

Mode IPv6 ACL configuration mode.

Usage Configuration ACE.

Example **ipv6 access-list standard** 26

permit any

ipv6 access-list extended 36

permit ip any any

Command	Command	Description
	show access-list	Display access control list information.

28.1.10 Standard IPv6 Access-List Deny | Permit

Under the standard ip access-list, config the deny or permit rules.

ipv6 access-list standard {26-35**}**

[ace_id**] {deny** | **permit**} [any | host | sip]

ipv6 access-list standard {26-35**}**

no {ace_id**}**

Parameter	Parameter	Description
	any	Any source IP address.
	host	Host IP address.
	sip	Assignable source IP address and mask.
	ace_id	ACE number (0-9).

Default NULL

Mode ACL configuration mode.

Usage Configuration ACE.

Example **ipv6 access-list standard** 26

permit any

Command	Command	Description
	show access-list	Display access control list information.

28.1.11 Extended IPv6Access-List Deny | Permit

Under the extended ip access-list,config the deny or permit rules.

ip access-list extended {36-45}

[ace_id] {**deny** | **permit**} {ip | tcp | udp} {any | host | sip} [eq] {any | host | dip} [eq]

ip access-list extended {36-45}

no {ace_id}

Parameter	Parameter	Description
	ip	**tcp**	**udp**	Protocol type.
	any	Any source IP address.
	host	Host IP address.
	sip	Assignable source IP address and mask.
	dip	Assignable dest IP address and mask.
	eq	TCP/UDP port filtering.

Default NULL

Mode ACL configuration mode.

Usage Configuration ACE.

Example **ipv6 access-list extended 36**

permit ip any any

Command

Command	Description
show access-list	Display access control list information.

28.1.12 IPv6 Access-List Commit

Use this command, will be ipv6 ACL Apply to the interface. We can filter rx data.

interface GigabitEthernet {port_id}

ipv6 access-list {ACL-name} **commit**

interface GigabitEthernet {port_id}

no ipv6 access-list {ACL-name} **commit**

Parameter

Parameter	Description
port_id	Interface ID.
ACL-name	The name of the ACL .

Default NULL

Mode Interface configuration mode.

Usage Apply the ACL

Example **interface GigabitEthernet 0/1**

ipv6 access-list 26 commit

Command **NULL**

28.1.13 Mac Access-List Extended

Configure the MAC access-list. By a series of match rules, we can filter network data.

mac access-list extended {ACL-name}

no mac access-list extended {ACL-name}

Parameter	Parameter	Description
	ACL-name	The name of the ACL (20-25).

Default NULL

Mode Configuration mode.

Usage Configuration access control list.

Example **mac access-list extended 20**

Command	Command	Description
	show access-list	Display access control list information.

28.1.14 MAC ACE Configuration

Under the mac access-list,config the specific rules.

mac access-list extended {20-25}

[0-9 | deny | end | exit | hlep | no | permit]

Parameter	Parameter	Description
	0-9	Config ace number, optional, Default value is 0.
	deny	Deny assignable data type, parameter has [any | host | sip].
	end	Quit.
	exit	Back to Previous Level.
	no	Delete the rules.
	permit	Permit assignable data type, parameter has [any | host | sip]

Default NULL

Mode ACL configuration mode

Usage Configuration ACE

Example **mac access-list extended 20**

permit any any

Command	Command	Description

	show access-list	Display access control list information.

28.1.16 MAC Access-List Deny | Permit

Under the extended mac access-list, config the deny or permit rules.

mac access-list extended {20-25}

[ace_id] {**deny** | **permit**} {any | host} {any | host} [ethtype]

mac access-list extended {20-25}

no {ace_id}

Parameter	Parameter	Description
	any	Any source/dest mac address.
	host	Host mac address.
	ethtype	Ethernet frame type.
	ace_id	-

Default	NULL
Mode	ACL configuration mode.
Usage	Configuration ACE.
Example	**ip access-list extended** 10 **permit ip any any**

Command	Command	Description
	show access-list	Display access control list information.

28.1.17 MAC Access-List Commit

Use this command, will be mac ACL Apply to the interface. We can filter rx data.

interface GigabitEthernet {port_id}

mac access-list {ACL-name} commit

interface GigabitEthernet {port_id}

no mac access-list {ACL-name} commit

Parameter	Parameter	Description
	port_id	Interface ID.
	ACL-name	The name of the ACL.

Default NULL

Mode Interface configuration mode.

Usage Apply the ACL.

Example interface GigabitEthernet 0/1

mac access-list 20 commit

Command NULL

28.2 Display Commands

28.2.1 Show Access-List

Show access-list information.

show access-lists

Parameter	Parameter	Description
	show access-lists	Display access control list information.

Default NULL

Mode Privileged mode

Usage display access control list information.

Example show access-list

mac access-list extended 20

0 permit any any

ip access-list standard 0

0 permit any

ip access-list extended 10

0 permit ip any any

ipv6 access-list standard 26

0 permit any

ipv6 access-list extended 36

Command NULL

29. 802.1X

If you want this function to take effect, please configure the 802.1X server of RADIUS first.

29.1 Configure Commands

29.1.1 Authentication dot1x

global switches, if you want to use this function, you must config this command.

authentication dot1x

no authentication dot1x

Parameter	Parameter	Description
	NULL	NULL

Default NULL

Mode Configuration mode

Usage Configuration 802.1X

Example authentication dot1x

Command	Command	Description
	show authentication	Display 802.1x information.

29.1.2 Authentication dot1x

Under the interface, we use this command open port's 802.1X function.

interface GigabitEthernet {port_id}

authentication dot1x

interface GigabitEthernet {port_id}

no authentication dot1x

Parameter	Parameter	Description
	port_id	Interface ID

Default NULL

Mode Interface configuration mode

Usage Configuration 802.1X

Example interface GigabitEthernet 0/3

authentication dot1x

Command

Command	Description
show authentication interface	Display 802.1x port information.

29.1.3 Authentication Port-Control

Under the interface, we use this command config 802.1X port-control mode.

interface GigabitEthernet {port_id}

authentication port-control {auto | force-auth | force-unauth}

interface GigabitEthernet {port_id}

no authentication port-control

Parameter

Parameter	Description
port_id	Interface ID.
auto	Auto mode.
force-auth	Force-auth mode.
force-unauth	Force unauth mode.

Default NULL

Mode Interface configuration mode.

Usage Configuration 802.1X port-control mode.

Example interface GigabitEthernet 0/3

authentication port-control auto

Command

Command	Description
show authentication interface	Display 802.1x port information.

29.1.4 Authentication Host-Mode

Under the interface, we use this command config 802.1X host-mode.

interface GigabitEthernet {port_id}

authentication host-mode {single-host | multi-host | multi-auth}

interface GigabitEthernet {port_id}

no authentication host-mode

Parameter	Parameter	Description
	port_id	Interface ID.
	single-host	Single Host Mode.
	multi-host	Multiple Host Mode.
	multi-auth	Multiple Authentication Mode.

Default multi-auth

Mode Interface configuration mode

Usage Configuration 802.1X port-control mode.

Example interface GigabitEthernet 0/3

authentication host-mode multi-host

Command	Command	Description
	show authentication interface	Display 802.1x port information.

29.2 Display Commands

29.2.1 Show Authentication

Show 802.1X information.

show authentication {**interfaces GigabitEthernet** port_id}

Parameter	Parameter	Description
	port_id	Interface ID.

Default NULL

Mode Privileged mode

Usage Display 802.1X information.

Example show authentication

Autentication dot1x state : enabled

Autentication mac state : disabled

Autentication web state : disabled

Guest VLAN : disabled

Show authentication interface GigabitEthernet0/3

Interface Configurations

Interface GigabitEthernet0/3

Admin Control : force-unauth

Host Mode : multi-host

Type dot1x State : enabled

Type mac State : disabled

Type web State : disabled

Type Order : dot1x

MAC/WEB Method Order : radius

Guest VLAN : disabled

Reauthentication : disabled

Max Hosts : 256

VLAN Assign Mode : static

Common Timers

Reauthenticate Period : 3600

Inactive Timeout : 60

Quiet Period : 60

802.1x Parameters

EAP Max Request : 2

EAP TX Period : 30

Supplicant Timeout : 30

Server Timeout : 30

Web-auth Parameters

Login Attempt : 3

Command NULL

30. AAA

30.1 Configure Commands

30.1.1 Radius Host

Configure all the parameters that switch connect to the radius sever.

radius host {host_name**} [auth-port**] {port_id**} [key**] {key**} [priority**] {pri_value**} [retransmit**] {retransmit_times**} [timeout**] {timeout_vlaue**} [type**] {auth_type**}**

no radius host {ip_addr**}**

Parameter	Parameter	Description
	host_name	Radius sever IP address or domain name.
	port_id	TCP/UDP port number, default is 1812. (0-65535).
	key	Radius server key.
	priority	Priority value (1-65534).
	retransmit_times	The number of retransmit, default is 3. (1-10).
	timeout_vlaue	Timeout value in seconds to wait for server to reply. (1-30)
	auth_type	Usage type. [802.1x | login | all]

Default port_id: 1812

retransmit_times: 3

Mode Configuration mode

Usage Configuration radius

Example radius host 192.168.1.254 auth-port 1812 key public priority 1 retransmit 1 timeout 1 type all

Command	Command	Description
	show radius	Display radius information.

30.1.2 AAA Authentication Enable

Configure enable authentication method.

aaa authentication {enable} {list_name**} {**auth_method_list**}**

no aaa authentication {enable} {list_name**}**

Parameter	Parameter	Description
	list_name	Auth Method List Name.
	auth_method_list	Enable Authentication Method List. [radius | enable].

Default NULL

Mode Configuration mode.

Usage Configure enable authentication method.

Example aaa authentication enable Xn enable radius

Command	Command	Description
	show aaa authentication enable lists	Display enable authentication information.

30.1.3 AAA Authentication Login

Configure login authentication method. Login include console, telnet and SSH.

aaa authentication {login} {list_name} {auth_method_list}

no aaa authentication {login} {list_name}

Parameter	Parameter	Description
	list_name	Auth Method List Name.
	auth_method_list	Login Authentication Method List. [radius | locaol].

Default NULL

Mode Configuration mode.

Usage Configure login authentication method.

Example aaa authentication login Xn local radius

Command	Command	Description
	show aaa authentication login lists	Display login authentication information.

30.1.4 Line Console

If you want to login by console and need AAA authentication, you must config this command.

line console

login authentication {Login_auth_list_name}

enable authentication {enable_auth_list_name}

line console

no login authentication

no enable authentication

Parameter

Parameter	Description
Login_auth_list_name	Login auth Method List Name.
enable_auth_list_name	Enable auth Method List Name.

Default NULL

Mode Configuration mode.

Usage Configure login authentication method.

Example line console

login authentication Xn

enable authentication Xn

Command

Command	Description
show line lists	Display login authentication information.

30.1.5 Line Telnet

If you want to login by telnet and need AAA authentication, you must config this command.

line telnet

login authentication {Login_auth_list_name}

enable authentication {enable_auth_list_name}

line telnet

no login authentication

no enable authentication

Parameter	Parameter	Description
	Login_auth_list_name	Login auth Method List Name.
	enable_auth_list_name	Enable auth Method List Name.

Default NULL

Mode Configuration mode.

Usage Configure telnet authentication method.

Example line telnet

login authentication Xn

enable authentication Xn

Command	Command	Description
	show line lists	Display telnet authentication information.

30.1.6 Line SSH

If you want to login by SSH and need AAA authentication, you must config this command.

line ssh

login authentication {Login_auth_list_name}

enable authentication {enable_auth_list_name}

line ssh

no login authentication

no enable authentication

Parameter	Parameter	Description
	Login_auth_list_name	Login auth Method List Name.
	enable_auth_list_name	Enable auth Method List Name.

Default NULL

Mode Configuration mode

Usage Configure SSH authentication method.

Example line SSH

login authentication Xn

enable authentication Xn

Command	Command	Description
	show line lists	Display SSH authentication information.

30.2 Display Commands

30.2.1 Show Radius

Show radius information.

show radius

Parameter	Parameter	Description
	NULL	NULL

Default NULL

Mode Privileged mode

Usage display radius information.

Example show radius

```
Prio   | IP Address     | Auth-Port| Retries | Timeout | Type     | Key
-------+----------------+----------+---------+---------+----------+---------
1      |192.168.1.254  |1812      |1        |1        | All      |public
```

Command NULL

30.2.2 Show AAA Authentication Enable List

Show aaa authentication information.

show aaa authentication enable list

Parameter	Parameter	Description
	NULL	NULL

Default NULL

Mode Privileged mode.

Usage Display aaa authentication information.

Example show aaa authentication enable list

Enable List Name Authentication Method List

---------- | ----------

default | enable

Xn | enable radius

Command NULL

30.2.3 Show AAA Authentication Login List

Show aaa authentication information.

show aaa authentication login list

Parameter

Parameter	Description
NULL	NULL

Default NULL

Mode Privileged mode.

Usage Display aaa authentication information.

Example show aaa authentication login lists

Login List Name Authentication Method List

---------- | ----------

default | local

Xn | local radius

Command NULL

31. SSH

31.1 Configure Commands

31.1.1 IP SSH

Enable ssh function

ip ssh [all | v1 | v2]

no ip ssh [all | v1 | v2]

Parameter	Parameter	Description
	[all | v1 | v2]	SSH version number.

Default NULL

Mode Configuration mode

Usage Configuration radius

Example ip ssh

Command NULL

32. SSL

32.1 Configure Commands

32.1.1 SSL

Generate ssl digital certificate

ssl

Parameter	Parameter	Description
	NULL	NULL

Default NULL

Mode Privileged mode

Usage generates new certificate

Example ssl

Command NULL

32.1.2 SSL Replace

Make the new SSL digital certificate work.

ssl replace

Parameter -

Default NULL

Mode Privileged mode

Usage Make the new SSL digital certificate work

Example ssl replace

Command NULL

33. QoS

33.1 Configure Commands

33.1.1 QoS Trust

Config QoS classify mode.

qos trust {classify_mode}

no qos trust

Parameter	Parameter	Description
	classify_mode	QoS Classify mode. [cos | dscp].

Default NULL

Mode Config mode

Usage Config qos classify mode

Example qos queue trust dscp

Command	Command	Description
	show qos	Display QoS information.

33.1.2 QoS Queue Schedule

Config qos schedule algorithm.

qos queue schedule {schedule_mode}

Parameter	Parameter	Description
	schedule_mode	Qos schedule mode. [sp | wrr | hybird]

Default NULL

Mode Config mode

Usage Config qos schedule algorithm

Example qos queue schedule wrr

Command	Command	Description

	show qos queueing	Display QoS queue information.

33.1.3 QoS Map CoS-Queue

Config qos queue mapping relationship.

qos map cos-queue {cos_value} **to** {queue_num}

Parameter	Parameter	Description
	cos_value	Cos value.
	queue_num	Queue number (1-8).

Default NULL

Mode Config mode.

Usage Config QoS queue mapping relationship.

Example qos map cos-queue 1 to 1

Command	Command	Description
	show qos map cos-queue	Display QoS map information.

33.1.4 QoS Map DHCP-Queue

Config qos queue mapping relationship.

qos map dscp-queue {dscp_value} **to** {queue_num}

Parameter	Parameter	Description
	dscp_value	DSCP value.
	queue_num	Queue number (1-8).

Default NULL

Mode Config mode.

Usage Config QoS queue mapping relationship.

Example qos map dscp-queue 1 to 8

Command	Command	Description
	show qos map dscp-queue	Display QoS map information.

33.1.5 QoS Map Weight

When you use WRR mode, you need config every queue weight value. you must use this command.

qos map weight {weight_values}

Parameter	Parameter	Description
	weight_values	Weight_values. (1-127)

Default NULL

Mode Config mode.

Usage Config qos queue weight.

Example qos queue weight 1 1 1 50 50 50 100 100

Command	Command	Description
	show qos map queueing	Display QoS queue information.

33.1.6 QoS Queue Strict-Priority-Num

When you use hybrid mode, you need config SP schedule queue's number. You must use this command.

qos queue strict-priority-num {SP_num}

Parameter	Parameter	Description
	weight_values	Weight values. (1-127)

Default NULL

Mode Config mode.

Usage Config QoS queue weight.

Example qos queue weight 1 1 1 50 50 50 100 100

Command NULL

33.2 Display Commands

33.2.1 Show QoS

Show QoS information.

show qos

Parameter	Parameter	Description
	NULL	NULL

Default NULL

Mode Privileged mode

Usage Display QoS information.

Example
```
show qos
QoS Mode                : enable
Basic trust             : cos
```

Command NULL

33.2.2 Show QoS Queueing

Show QoS queue information.

show qos queueing

Parameter	Parameter	Description
	NULL	NULL

Default NULL

Mode Privileged mode

Usage Display QoS queueing information.

Example
```
show qos queueing
queue Schedule Alg      : hybrid
qid-weights Ef - Priority
```

1 - 1 dis- N/A

2 - 2 dis- N/A

3 - 3 dis- N/A

4 - 4 dis- N/A

5 - 5 dis- N/A

6 - 6 dis- N/A

7 - 10 dis- N/A

8 - N/A ena- 8

Command NULL

33.2.3 Show QoS Map CoS-Queue

Show QoS queue information.

show qos map cos-queue

Parameter

Parameter	Description
NULL	NULL

Default NULL

Mode Privileged mode

Usage Display QoS map information.

Show QoS map cos-queue

Example CoS to Queue mappings

CoS 0 1 2 3 4 5 6 7

Queue 2 1 1 2 3 3 4 4

Command NULL

33.2.4 Show QoS Map DHCP-Queue

Show QoS queue information.

show qos map dscp-queue

Parameter	Parameter	Description
	NULL	NULL

Default NULL

Mode Privileged mode.

Usage Display qos map information.

Example show qos map dscp-queue

DSCP to Queue mappings

d1: d2 0 1 2 3 4 5 6 7 8 9

0: 8 8 8 8 8 8 2 2 2 2

1: 2 2 2 2 2 2 2 2 2 2

2: 2 2 2 2 2 2 2 2 2 2

3: 2 2 2 2 2 2 2 2 2 2

4: 2 2 2 2 2 2 2 2 2 2

5: 2 2 2 2 2 2 2 2 2 2

6: 2 2 2 2

Command NULL

34. PoE Commands

34.1 Configure Commands

34.1.1 PoE Enable

Enable the power supply capability of the PoE port

poe enable

no poe enable

Parameter	Parameter	Description
	poe enable	Enable PoE power supply function, the default is on.
	no poe enable	Turn off POE power supply.

Default Enable PoE power supply

Mode Interface configuration mode

Usage Use this command to enable/disable the remote power supply capability of the port.

Example **S2800S(config-if-GigabitEthernet0/1)# poe enable**

S2800S(config-if-GigabitEthernet0/1)# no poe enable

Command	Command	Description
	-	-

34.1.2 PoE Mode

Configure the power management mode of the POE system

poe mode auto

poe mode energy-saving

poe mode static

Parameter	Parameter	Description
	auto	Set the power management mode to automatic mode, which is the default mode for POE devices.
	energy-saving	Set the power management mode to energy saving mode, which is an optional mode for POE devices.
	static	Set the power management mode to static mode, which is an optional mode for POE devices.

Default Energy-saving

Mode Global configuration mode

Usage Execute the following command to set the system power management mode

S2800S(config)# poe mode auto

Example S2800S(config)# poe mode energy-saving

S2800S(config)# poe mode static

Command

Command	Description
show poe powersupply	View the PoE system configuration information.

34.1.3 PoE Max-Power

Set the system maximum power.

poe max-power

no poe max-power

Parameter

Parameter	Description
int	Maximum power in the range <6,11,20,32,35W>.

Default 35W

Mode Interface configuration mode

Usage Use this command to configure the maximum power of the port.

Example S2800S(config)# interface GigabitEthernet 0/1

S2800S(config-if-GigabitEthernet0/1)# poe max-power 20

Command

Command	Description
show poe interfaces configuration	View the PoE interface configuration information.

34.1.4 PoE Alloc-Power

Set the system allocation power.

poe alloc-power

no poe alloc-power

Parameter	Parameter	Description
	int	Allocation power in the range <6,11,20,32,35W>.

Default 35W

Mode Interface configuration mode

Usage Use this command to configure the allocation power of the port in static mode.

Example
```
S2800S(config)# interface GigabitEthernet 0/1
S2800S(config-if-GigabitEthernet0/1)# poe alloc-power 20
```

Command	Command	Description
	show poe interfaces configuration	View the PoE interface configuration information.

34.1.5 PoE Timer Enable

Enable the POE timer

poe timer enable

no poe timer enable

Parameter	Parameter	Description
	poe timer enable	Enable PoE timer.
	no poe timer enable	Disable POE timer.

Default Disable PoE timer

Mode Global configuration mode

Usage Use this command to enable/disable the remote power supply capability of the port.

Example
```
S2800S(config)# poe timer enable
S2800S(config)# no poe timer enable
```

Command	Command	Description

	show poe timer	View the configuration information of current interface POE timer.

34.1.6 PoE Timer Configuration

Set the PoE timer mode

Parameter	Parameter	Description
	absolute	Set PoE power to the absolute time.
	periodic	Set the PoE power cycle time.

Default NULL

Mode Interface configuration mode

Usage Use the command to set the PoE power supply time

S2800S(config)# poe timer enable

S2800S(config)# interface GigabitEthernet 0/5

S2800S(config-if-GigabitEthernet0/5)# poe timer periodic everyday 8:30 to 19:30 Example mon to wed

S2800S(config-if-GigabitEthernet0/5)# poe timer absolute start 08:30 jul 25 2017 stop 18:30 sep 30 2017

Command	Command	Description
	show poe timer	View the configuration information of current interface PoE timer information.

34.2 Display Relevant Commands

34.2.1 Show PoE Interface

View the POE configuration and status information for the specified port.

show poe interface GigabitEthernet port-id

Parameter	Parameter	Description
	port-id	Allocation power in the range <6,11,20,32,35W>

Default NULL

Mode Privilege configuration mode.

Usage Execute this command to view the PoE status of the specified port.

Example

```
S2800S# show poe interfaces GigabitEthernet 0/1
Interface                 : gi0/1
Pd Description            :
Power control             : Normal
Power status              : Detecting
Max power                 : 35 W
Allocate power            : 35 W
Current power             : 0 W
Average power             : 0 W
Peak power                : 0 W
Voltage                   : 52.908 V
Current                   : 0 mA
PD class                  : NoPd
Trouble cause             : None
Trouble Recover Mode      : auto
Power management          : Energy-saving
S2800S#
```

34.2.2 Show PoE Interfaces

View the PoE status or configuration of all ports

show poe interfaces status

show poe interfaces configuration

Parameter

Parameter	Description
-	-

Default NULL

Mode Privilege configuration mode.

Usage Execute this command to view the PoE status or configuration of all ports.

Example

```
S2800S# show poe interfaces status
Interface Power Power Curr Avg Peak Curr Trouble PD Port
Control Status Power Power Power Current Cause Class Voltage
---------------------------------------------------------------------------------
gi0/1 Normal Detecting 0W 0W 0W 0mA 0 N/A 0V
gi0/2 Normal Detecting 0W 0W 0W 0mA 0 N/A 0V
gi0/3 Normal Detecting 0W 0W 0W 0mA 0 N/A 0V
gi0/4 Normal Detecting 0W 0W 0W 0mA 0 N/A 0V
gi0/5 Normal Detecting 0W 0W 0W 0mA 0 N/A 0V
gi0/6 Normal Detecting 0W 0W 0W 0mA 0 N/A 0V
gi0/7 Normal Detecting 0W 0W 0W 0mA 0 N/A 0V
gi0/8 Normal Detecting 0W 0W 0W 0mA 0 N/A 0V
S2800S#
```

34.2.3 Show PoE Powersupply

View the current power state of the PoE system.

show poe powersupply

Parameter

Parameter	Description
-	-

Default -

Mode Privilege configuration mode.

Usage Execute this command to view the power supply status of the current POE system.

Example

```
S2800S# show poe powersupply
Powerring Port List              :
Power Management Method          : Energy-saving
Poe uninterruptible power        : Disable
System Total Power               : 70 W
Power Consumption                : 0 W
```

Available power : 70 W [100%]

34.2.4 Show PoE Timer

View the PoE Timer.

show poe timer

Parameter

Parameter	Description
-	-

Default -

Mode Privilege configuration mode.

Usage Execute this command to view the current PoE timer information

Example

```
S2800S# show poe timer
PORT       | Timer mode |    Start timer      | Stop timer
-----------+------------+---------------------+-----------
1          |   Periodic    | Wednesday 8:0 | Friday 23:0
```

35. SNMP Commands

35.1 SNMP Configuration Commands

35.1.1 SNMP Enable

Enable the SNMP agent

snmp enable

Parameter

Parameter	Description
snmp enable	Enable the SNMP agent, the default is off.

Default Closes the SNMP agent.

Mode Global configuration mode

Usage Use this command to configure and enable the SNMP agent, Ipv6 SNMP is enabled at the same time.

Example S2800S(config)# snmp enable

Command

Command	Description
show snmp	View the current SNMP status.

35.1.2 No SNMP Enable

Close the SNMP agent

no snmp enable

Parameter

Parameter	Description
snmp enable	Enable the SNMP agent, the default is off.

Default Close the SNMP agent.

Mode Global configuration mode

Usage Use this command to configure and shut down the SNMP agent.

Example S2800S(config)# no snmp enable

Command

Command	Description

show snmp	View the current SNMP status.

35.1.3 SNMP Enable Traps

To enable SNMP to actively send trap messages to the NMS to report some urgent and important events, run the global configuration command snmp-server enable traps. The no form of this command disables SNMP from the NMS Send the Trap message proactively.

snmp-server enable traps

no snmp-server enable traps

Parameter

Parameter	Description
snmp-server enable traps	Open the trap function.
no snmp-server enable traps	Close the trap function.

Default Disable.

Mode Global configuration mode.

Usage The command must be used in conjunction with the global configuration command SNMP-

server host to send trap messages.

Example **S2800S(config)# snmp-server enable traps**

S2800S(config)# no snmp-server enable traps

Command

Command	Description
show snmp	View the current SNMP switch status.

35.1.4 SNMP-Server Community

To specify the access characters for the SNMP community, perform the global configuration command snmp-server community.

snmp-server community Community name **[ro** | **rw** | view**]**

Parameter

Parameter	Description
community name	Community name.

Default -

Mode Global configuration mode.

Usage This command is used with the global configuration command snmp-server enable traps to send trap messages to the NMS.

Example S2800S(config)# snmp-server community test rw

Command

Command	Description
show snmp community	View Community Information.

35.1.5 SNMP-Server Host

To specify the SNMP host (NMS) that sends trap messages, execute the global configuration command snmp-server host. The no form of the command deletes the specified SNMP host.

snmp-server host {host-addr [**traps**] [**version** { **1** | **2c** | **2**} community name}

no snmp-server host community name

Parameter

Parameter	Description
host-addr	Receive the Trap host IP address.
community name	Community name.
version	SNMP supported version, this device supports v1, V2c, v3.

Default There is no default SNMP host.

Mode Global configuration mode

Usage This command is used with the global configuration command snmp-server enable traps to send trap messages to the NMS.

Example

```
S2800S(config)# snmp-server host 192.168.1.254 traps
version 1 test
S2800S(config)# no snmp-server host 192.168.1.254 traps
version 1 test
```

Command

Command	Description
show snmp host	View the host information of the receiving trap configured by the user.

35.1.6 SNMP Trap Auth

In the device can be based on the interface configuration whether to send the interface LinkTrap, when the function is turned on, if the authentication fails, SNMP will issue authTrap, otherwise not made. Use the no option for this command SNMP will not issue authTrap.

snmp trap auth

no snmp trap auth

Parameter

Parameter	Description
snmp trap auth	Set SNMP authentication failure trap.

Default The function opens, and if the interface auth fails, SNMP will issue authTrap.

Mode Global configuration mode.

Usage When the function is turned on, if auth fails to change, SNMP will be issued AuthTrap

Example

```
S2800S(config)# snmp trap auth
S2800S(config)# no snmp trap auth
```

Command

Command	Description
show snmp trap	View the SNMP trap configuration.

35.1.7 SNMP Trap Link-Status

In the device can be based on the interface configuration whether to send the interface LinkTrap, when the function is turned on, if the interface Link status changes, SNMP will send LinkTrap, otherwise not made. Use the no option for this command SNMP will not send LinkTrap.

snmp trap linkUp

snmp trap linkDown

Parameter

Parameter	Description
linkUp	Set SNMP link up trap.

linkDown	Set SNMP link down trap.

Default This function is enabled. If the link status changes, SNMP will send LinkTrap.

Mode Global configuration mode.

Usage For the interface (Ethernet interface, Ap interface, SVI interface), the command configures whether to send the interface LinkTrap, when the function is turned on, if the interface changes Link state, SNMP will be issued LinkTrap,

Example
```
S2800S(config)# snmp trap linkUp
S2800S(config)# snmp trap linkDown
```

Command

Command	Description
show snmp trap	View the SNMP trap configuration.

35.1.8 SNMP Trap Restart

For warm-start and cold-start, open the trap function, after the success of the restart will send the relevant trap message

snmp trap cold-start

snmp trap warm-start

Parameter

Parameter	Description
cold-start	Set SNMP bootup cold start-up trap.
warm-star	Set SNMP bootup warm start-up trap.

Default This function is enabled. If the switch reboots or restarts, the trap message is sent after a successful reboot

Mode Global configuration mode.

Usage For warm-start and cold-start, open the trap function, after the success of the restart will send the relevant trap message

Example
```
S2800S(config)# snmp trap cold-start
S2800S(config)# snmp trap warm-start
```

Command	Command	Description
	show snmp trap	View the SNMP trap configuration.

35.1.9 SNMP Trap STP

When this function is enabled, when the topology changes or a new root bridge is created, the trap information of STP is sent and no trap information is sent.

snmp trap stp

no snmp trap stp

Parameter	Parameter	Description
	snmp trap stp	Set STP topology change or new root.

Default This function default is disabled. If he topology changes or a new root bridge is created, the trap information of STP is sent and no trap information is sent.

Mode global configuration mode.

Usage when the topology changes or a new root bridge is created, the trap information of STP is sent and no trap information is sent.

Example
S2800S(config)# snmp trap stp
S2800S(config)# no snmp trap stp

Command	Command	Description
	show snmp trap	View the SNMP trap configuration.

35.2 SNMP Display Relevant Commands

35.2.1 Show SNMP-Status

Displays the current SNMP on state.

show snmp

Parameter	Parameter	Description
	show snmp	View SNMP information.

Default -

Mode Privilege configuration mode.

Usage -

Example S2800S# show snmp

SNMP is enabled.

35.2.2 Show SNMP Trap

Displays the current SNMP trap status.

show snmp trap

Parameter

Parameter	Description
show snmp trap	View SNMP class of trap enable or disable.

Default -

Mode Privilege configuration mode.

Usage

Example

```
S2800S# show snmp trap
SNMP global trap          : Enable
SNMP auth failed trap     : Enable
SNMP linkUp trap          : Enable
SNMP linkDown trap        : Enable
SNMP cold-start trap      : Enable
SNMP warm-start trap      : Enable
SNMP stp trap             : Enable
```

35.2.3 Show Community

Displays the current SNMP community status.

show snmp community

Parameter	Parameter	Description
	show snmp community	View SNMP community entries.

Default -

Mode Privilege configuration mode.

Usage **-**

Example S2800S# show snmp community

Community Name Group Name View Access

private - all rw

public - all ro

35.2.4 Show SNMP Host

Displays the host that receives the trap information.

show snmp host

Parameter	Parameter	Description
	show snmp host	View all trap host entry.

Default -

Mode Privilege configuration mode.

Usage **-**

Example S2800S# show snmp host

Server Community/User Name Notification Version Notification Type UDP Port

Retries Timeout

192.168.1.254 test v1 trap 162 -- --

Total Entries: 1

36. LLDP Settings

36.1 LLDP Settings

36.1.1 LLDP Enable

LLDP is a Layer 2 protocol that allows network devices to advertise their own device identities and performance on the local subnet.

lldp

no lldp

Parameter	Parameter	Description
	lldp	Global LLDP configuration subcommands.

Default Default is disable.

Mode Global configuration mode.

Usage Use "lldp" command to enable LLDP RX/TX ability. The LLDP enable status is displayed b y "show lldp" command. Use the no form of this command to disable the LLDP.

Example

S2800S(config)# lldp

S2800S(config)# no lldp

Command	Command	Description
	show lldp	Display LLDP information.

36.1.2 LLDP RX

When the port works in Rx mode, the device only receives non-sending neighbor devices to send LLDP packets.

lldp rx

no lldp rx

Parameter	Parameter	Description
	lldp rx-	Enable LLDP reception on interface.

Default Default is disable

Mode Interface configuration mode

Usage Use "lldp rx" command to enable LLDP PDU RX ability. The configuration is displayed b y "show lldp" command.

Example S2800S(config-if-GigabitEthernet0/1)# lldp rx

S2800S(config-if-GigabitEthernet0/1)# no lldp rx

Command	Command	Description
	show lldp	Display LLDP information.

36.1.3 LLDP TX-Interval

Declare local capacity to send the message

lldp tx-interval <5-32767>

no lldp tx-interval

Parameter	Parameter	Description
	<5-32767>	Specify the LLDP PDU TX interval in unit of second.

Default Default tx-interval is 30s

Mode Global configuration mode.

Use "lldp tx-interval" command to enable LLDP TX interval. It should be

noticed that both "lldp tx-interval " and "lldp tx-delay" affects the LLDP PDU TX.

Usage time, the large value of the two configuration decides the TX interval, the configuration

is displayed by "show lldp" command.

Example S2800S(config)# lldp tx-interval 10

S2800S(config)# no lldp tx-interval

Command	Command	Description
	show lldp	Display LLDP information.

36.1.4 LLDP Reinit-Delay

LLDP module re-initialization delay.

lldp reinit-delay <1-10>

no lldp reinit-delay

Parameter

Parameter	Description
<1-10>	Specify the LLDP re-initial delay time in unit of second.

Default Default reinit-delay is 2s.

Mode Global configuration mode,

Usage Use "lldp reinit-delay" command to configure LLDP reinit-delay. The delay avoids LLDP generate too many pdu if the port up and down frequently. The delay starts to count when the port links down. The port would not generate LLDP PDU until the delay counts to zero. The configuration is displayed by "show lldp" command. Use the no form of this command to disable the LLDP.

Example S2800S(config)# lldp reinit-delay 5

S2800S(config)# no lldp reinit-delay

Command

Command	Description
show lldp	Display LLDP information.

36.1.5 LLDP Holdtime-Multiplier

The message time is multiples

lldp holdtime-multiplier <2-10>

no holdtime-multiplier

Parameter

Parameter	Description
<2-10>	Specify the LLDP hold time multiplier.

Default lldp holdtime-multiplier 4.

Mode Global configuration mode.

Use "lldp holdtime-multiplier" command to con figure the LLDP PDU hold multiplier that decides time-to-live (TTL) value sent in LLDP advertisements:

Usage TTL = (tx-interval * holdtime-multiplier). The configuration could be shown by "show lldp" command.

Example
```
S2800S(config)# lldp holdtime-multiplier 3
S2800S(config)# no lldp holdtime-multiplier
```

Command

Command	Description
show lldp	Display LLDP information.

36.1.6 LLDP LLDPDU

LLDPPDUs are LLDP payloads that carry messages to be sent.

lldp lldpdu (bridging | filtering | flooding)

Parameter

Parameter	Description
bridging	When LLDP is globally disabled, LLDP packets are bridging (bridging LLDP PDU to VLAN number ports)
filtering	When LLDP is globally disabled, lldp packets are filtered(deleted)
flooding	When lldp is globally disabled, lldp packets are flooded (forwarded to all interfaces)

Default Default LLDP PDU handling behavior when LLDP disabled is flooding.

Mode Global configuration mode.

Usage Use "lldp lldpdu" command to configure the LLDP PDU handling behavior. When LLDP is globally disabled it should be noticed that if LLDP is globally enabled and per port. LLDP RX status is configured to disabled, the received LLDP PDU would be dropped instead of taking the global disabled behavior. the configuration is displayed by "show lldp" command.

Example
```
S2800S(config)# lldp lldpdu bridging
```

Command

Command	Description
show lldp	Display LLDP information.

36.1.7 LLDP Med

LLDP module re-initialization delay.

lldp med

no lldp med

Parameter

Parameter	Description
lldp med-	Configure LLDP MED extension.

Default LLDP MED

Mode Interface configuration mode.

Usage Use "**lldp med**" to configure the LLDP MED enable status. If LLDP MED is enabled, LLDP MED capability TLV and other selected MED TLV would be attached. The configuration could be shown by "show lldp med" command. Use the no form of this command to restore the behavior to default.

Example S2800S(config-if-GigabitEthernet0/1)# lldp med

S2800S(config-if-GigabitEthernet0/1)# no lldp med

Command

Command	Description
show lldp	Display LLDP information.

36.1.8 LLDP Med Fast-Start-Repeat-Count

Configure LLDP MED fast start repeat count

lldp med f ast-start-repeat-count <1-10 >

no lldp med fast-start-repeat-count

Parameter

Parameter	Description
<1-10>	LLDP PDU fast start TX repeat counts.

Default Default fast start TX repeat count is 3

Mode Global Configuration.

Usage Use "lldp lldp med fast-start-repeat-count" command to configure the LLDP BPDU fast start TX repeat. when port links down, it will send LLDP PDU immediately to notify link partner, the number of LLDP PDU sends when it links up depends on fast-start-repeat-count configuration, the LLDP PDU fast-start transmits in interval of one second. the fast start behavior works no matter LLDP MED is enabled or

not attached. The configuration could be shown by "show lldp med"

command. Use the no form of this command to restore the behavior to default.

Example S2800S(config)# lldp med fast-start-repeat-count 3

Command

Command	Description
show lldp med	Display LLDP MED information.

36.1.9 LLDP Med TLV-Select

Configure the TLV and no commands to add LLDP packets to send TLV for LLDP packets.

lldp med tlv-select MEDTLV [MEDTLV] [MEDTLV] [MEDTLV]

no lldp med tlv-select

Parameter

Parameter	Description
MEDTLV	MED optional TLV. Available optional TLVs are network-policy, location, poe-pse, inventory.

Default Network-policy TLV.

Mode Interface configuration mode.

Usage Use "lldp med tlv-select" command to configure e the LLDP MED TLV selection. It should be noticed that even no MED TLV is selected, MED Capability TLV would be attached if LLDP MED is enable. The configuration could be shown by "show lldp med" command. Use the no form of this command to remove all selected MED TLV over the dedicated ports.

Example S2800S(config-if-GigabitEthernet0/1)# lldp med tlv-select network-policy

S2800S(config-if-GigabitEthernet0/1)# no lldp med tlv-s elect

Command

Command	Description
show lldp interfaces GigabitEthernet 0/1	Display LLDP information.

36.1.10 LLDP TLV-Select

Configure the TLV and no commands to add LLDP packets to send TLV for LLDP packets.

lldp tlv-select TLV [TLV] [TLV] [TLV] [TLV] [TLV] [TLV] [TLV]

no lldp tlv-select

Parameter	Parameter	Description
	TLV	LLDP optional TLV, pick from: port-desc, sys-name, sys-desc, sys-cap, mac-phy, lag, max-frame-size, management-addr.

Default Default is no selected optional TLV.

Mode Interface configuration mode

Usage Use "lldp tlv-select" command to attach selected TLV in PDU. The configuration could be shown by "show lldp" command. Use the no form of this command to remove all selected TLV. This example selects system name, system description, system capability.

Example S2800S(config-if-GigabitEthernet0/1)# lldp tlv-select sys- desc

S2800S(config-if-GigabitEthernet0/1)# no lldp tlv-select

Command	Command	Description
	show lldp interfaces GigabitEthernet 0/1	Display LLDP information.

36.1.11 Select PVID

Configure the TLV and no commands to add LLDP packets to send TLV for LLDP packets.

lldp tlv-select pvid (disable | enable)

no lldp tlv-select pvid

Parameter	Parameter	Description
	disable	Disable LLDP 802.1 PVID TLV attach state.
	enable	Enable lldp 802.1 PVID TLV attach state.

Default Default is enabled.

Mode Interface configuration mode.

Usage Use "lldp tlv-select pvid" command to configure the 802.1 PVID TLV attach

enable status. The configuration could be shown by "show lldp" command.

Example S2800S(config-if-GigabitEthernet0/1)# lldp tlv-select pvid enable

S2800S(config-if-GigabitEthernet0/1)# lldp tlv-select pvid disable

Command	Command	Description
	show lldp interfaces GigabitEthernet 0/1	Display LLDP information.

36.1.12 LLDP TLV-Select VLAN-Name

Configure the TLV and no commands to add LLDP packets to send TLV for LLDP packets.

lldp tlv-select vlan-name add (add | remove) vlan-list

no lldp tlv-select

Parameter	Parameter	Description
	VLAN-LIST	VLAN List (e.g., 3,6-8): The range of VLAN ID is 2 to 4094.

Default Default is no VLAN added.

Mode Interface configuration mode.

Usage Use "lldp tlv-select vlan-name" command to add or remove

VLAN list for 802.1 VLAN-NAME TLV. The configuration could be

shown by "show lldp" command.

Example S2800S(config-if-GigabitEthernet0/1)# lldp tlv-select vlan- name add 1

S2800S(config-if-GigabitEthernet0/1)# no lldp tlv-select

Command	Command	Description
	show lldp interfaces GigabitEthernet 0/1	Display LLDP information.

36.1.13 LLDP TX

When the port works in TX mode, the device only sends LLDP packets that do not accept neighbor devices to send LLDP packets.

lldp tx

no lldp tx

Parameter	Parameter	Description
	lldp tx-	Enable LLDP transmission on interface.

Default Default is disable.

Mode Interface configuration mode.

Usage Use "lldp tx" command to enable LLDP PDU TX ability. The configuration is displayed by "show lldp" command.

Example S2800S(config-if-GigabitEthernet0/1)# lldp tx

S2800S(config-if-GigabitEthernet0/1)# no lldp tx

Command

Command	Description
show lldp	Display LLDP information

36.1.14 LLDP TX-Delay

When the port works in TX mode, the device only sends LLDP packets that do not accept neighbor devices to send LLDP packets.

lldp tx

no lldp tx

Parameter

Parameter	Description
<1-8192>	Specify the LLDP TX delay in unit of seconds.

Default Default TX delay is 2s.

Mode Global Configuration.

Usage Use "lldp tx-delay" command to configure re the delay in seconds between successive LLDP frame transmissions. The delay starts to count in any case LLDP PDU is sent such as by LLDP PDU advertise routine, LLDP PDU content change, port link up, etc. The configuration could be shown by "show lldp" command. Use the no form of this command to restore the delay to default value.

Example S2800S(config)# lldp tx-delay 5

S2800S(config)# no lldp tx-delay

Command

Command	Description
show lldp	Display LLDP information.

36.1.15 Show LLDP

Display the current SNMP community status.

show lldp

show lldp interfaces GigabitEthernet <1-10>

Parameter

Parameter	Description
<1-10>	GigabitEthernet device number.

Default -

Mode Privilege configuration mode.

Usage Display LLDP information and port-related LLDP information.

Example

```
S2800S# show lldp interfaces GigabitEthernet 0/1
State                          : Enabled
Timer                          : 30 Seconds
Hold multiplier                : 4
Reinit delay                   : 2 Seconds
Tx delay                       : 2 Seconds
LLDP packet handling: Bridging
Port    | State | Optional TLVs | Address
-------- + ------ + ---------------- + --------
gi0/1  | Disable |  | 192.168.1.254
Port ID                        : gi0/1
802.3 optional TLVs            :
802.1 optional TLVs
PVID                           : Disabled
VLANs                          : 1
```

36.1.16 Show LLDP Local-Device

Displays the current SNMP community status.

show lldp

show lldp interfaces GigabitEthernet <1-10> local-device

Parameter	Parameter	Description
	<1-10>	GigabitEthernet device number.

Default -

Mode Privilege configuration mode.

Usage Use "**show lldp local-device** " command to show the local configuration of lldp pdu.

Example

```
S2800S# show lldp local-device
LLDP Local Device Information:
Chassis Type                    : Mac Address
Chassis ID                      : 00E0.4C01.7899
System Name                     : S2800S
System Description              :
System Capabilities Support     : Bridge
System Capabilities Enable      : Bridge
Management Address              : 192.168.1.1(IPv4)
Management Address              : fe80::2e0:4cff:fe01:7899(IPv6)
```

36.1.17 Show LLDP Med

Displays the current SNMP community status.

show lldp

show lldp interfaces GigabitEthernet <1-10> med

Parameter	Parameter	Description
	<1-10>	GigabitEthernet device number.

Default -

Mode Privilege configuration mode.

Usage Use "**show lldp med**" command to display LLDP MED configuration information.

Example

```
S2800S# show lldp med
Fast Start Repeat Count                 : 3
lldp med network-policy voice           : manual
```

Example

```
Port | Capabilities | Network Policy | Location | Inventory | PoE PSE
------ + ------------- + ------------------ + ---------- + ------------ + ----------
gi0/1 | No           | No             | No       | No         | N/A
gi0/2 | No           | Yes            | No       | No         | N/A
gi0/3 | No           | Yes            | No       | No         | N/A
gi0/4 | No           | Yes            | No       | No         | N/A
gi0/5 | No           | Yes            | No       | No         | N/A
gi0/6 | No           | Yes            | No       | No         | N/A
gi0/7 | No           | Yes            | No       | No         | N/A
gi0/8 | No           | Yes            | No       | No         | N/A
gi0/9 | No           | Yes            | No       | No         | N/A
gi0/10 | No          | Yes            | No       | No         | N/A
```

36.1.18 Show LLDP Neighbor

Displays the current SNMP community status.

show lldp neighbor

Parameter

Parameter	Description
show lldp neighbor	Display information about neighboring devices.

Default -

Mode Privilege configuration mode.

Usage Use "show lldp neighbor" command to display the received neighbor LLDP PDU information. When LLDP PDU is received on LLDP RX enable ports, system would store the PDU information in database until time to live of the PDU counts down to zero.

Example

```
S2800S# show lldp neighbor
Port |    Device ID         |    Port ID    |   SysName    |Capabilities | TTL
----- + -------------------- + ---------- + ---------- + ---------- + -----
gi0/4 | 00E0.4C01.7899  | gi0/1          |              |             | 100
```

36.1.19 Show LLDP Statistics

Displays the current SNMP community status.

show lldp statistics

Parameter

Parameter	Description
show lldp statistics-	View LLDP statistics information.

Default -

Mode Privilege configuration mode.

Usage Use "**show lldp statistics**" command to display the LLDP RX/TX statistics.

Example

```
S2800S# show lldp statistics
LLDP Global Statistics                :
Insertions                            : 1
Deletions                             : 0
Drops                                 : 0
Age Outs                              : 0
          | TX Frames |        RX Frames          |           RX TLVs           | RX Ageouts
Port    |    Total    | Total | Discarded | Errors | Discarded | Unrecognized |      Total
--------+-------------+-------+-----------+--------+-----------+--------------+----------
gi0/1  | 12          | 0     | 0         | 0      | 0         | 0            | 0
gi0/2 | 0           | 0     | 0         | 0      | 0         | 0            | 0
gi0/3 | 0           | 0     | 0         | 0      | 0         | 0            | 0
gi0/4 | 3           | 3     | 0         | 0      | 0         | 0            | 0
gi0/5 | 0           | 0     | 0         | 0      | 0         | 0            | 0
gi0/6 | 0           | 0     | 0         | 0      | 0         | 0            | 0
gi0/7 | 0           | 0     | 0         | 0      | 0         | 0            | 0
gi0/8 | 0           | 0     | 0         | 0      | 0         | 0            | 0
gi0/9 | 0           | 0     | 0         | 0      | 0         | 0            | 0
gi0/10 | 0          | 0     | 0         | 0      | 0         | 0            | 0
```

37. System Settings Commands

37.1 Basic System Settings

37.1.1 Management VLAN

Configure system management VLAN

management-vlan vlan vlanid

Parameter	Parameter	Description
	vlanid	The vlanid is in the rang of <1-4094>.

Default vlan1

Mode Global configuration mode.

Usage Use this command to configure the system management vlan.

Example S2800S(config)# management-vlan vlan 1

Command	Command	Description
	show management-vlan	Display management VLAN.

37.1.2 IP DHCP Command

Configure the IP DHCP

ipv6 dhcp

Parameter	Parameter	Description
	Ip dhcp	-

Default -

Mode Global configuration mode.

Usage Use this command to Configure the ip address of the switch.

Example S2800S(config)# ip dhcp

Command	Command	Description

	show interfaces vlan ip	Display management IP information.

37.1.3 Management IP

Configure system management IP

Ip address x.x.x.x

Parameter	Parameter	Description
	Ip address	The int is in the rang of <0-255>
	mask	The int is in the rang of <0-255>
	default-gateway	The int is in the rang of <0-255>

Default 192.168.1.1

Mode Global configuration mode.

Usage Use this command to configure the system management ip.

Example S2800S(config)# ip address 192.168.1.10 mask 255.255.255.0

S2800S(config)# ip default-gateway 192.168.1.254

Command	Command	Description
	show interfaces vlan ip	Display management IP information.

37.1.4 Location Command

Configure the system location

location

Parameter	Parameter	Description
	address	Set host location address.
	relation	Set host location relation.
	telephone	Set host location telephone.

Default NULL

Mode Global configuration mode.

Usage Use this command to configure the system location

S2800S(config)# location address 11111111

Example S2800S(config)# location relation switch

S2800S(config)# location telephone 1234567890

Command

Command	Description
show location	Display system location information.

37.1.5 IPv6

Configure the ipv6 address of the switch.

Ipv6 address X:X::X:X

IPv6 gateway X:X::X:X

Parameter

Parameter	Description
Ipv6 address	The int is In the rang of <0-255>.
prefix	<0-128>.
Ipv6 gateway	X:X::X:X IPv6 gateway.

Default -

Mode Global configuration mode

Usage Use this command to configure the ipv6 address of the switch

Example S2800S(config)# ipv6 address 2001::5 prefix 64

S2800S(config)# ipv6 default-gateway 2001::1

Command

Command	Description
show ipv6	Display management IPv6 information.

37.1.6 IPv6 DHCP Command

Configure the ipv6 DHCP

ipv6 dhcp

Parameter	Parameter	Description
	Ipv6 dhcp	-

Default -

Mode Global configuration mode.

Usage Use this command to configure the IPv6 address of the switch.

Example S2800S(config)# ipv6 dhcp

Command	Command	Description
	show ipv6	Display management IPv6 information.

37.1.8 Telnet

Configure the system to telnet.

ip telnet

Parameter	Parameter	Description
	Ip telnet	-

Default -

Mode Global configuration mode

Usage Use this command configure the system to telnet

Example S2800S(config)# ip telnet

S2800S(config)# no ip telnet

37.1.9 Log Export

Export the current configuration of the system.

copy flash://ram.log tftp://

Parameter	Parameter	Description
	flash://	Copy from flash: file system. flash://startup-config flash://running-config flash://backup-config flash://ram.log
	tftp://	Copy from tftp: file system. (tftp://serverip/filename)

Default -

Mode Privilege configuration mode.

Usage Use this command to Export the current configuration of the system.

Example S2800S# copy flash://ram.log tftp://192.168.1.254/8

37.1.10 System Restart

System restart.

reload

Parameter	Parameter	Description
	reload	-

Default -

Mode Privilege configuration mode.

Usage Use this command to restart the system.

Example S2800S# reload

37.1.11 Change Password

change Password

username web xx password xx

Parameter	Parameter	Description
	WORD	Username.
	password	User password.

Default admin.

Mode Global configuration mode.

Usage Use this command to change password

Example S2800S(config)# username web admin password admin

Command

Command	Description
show username	Display username information.

37.1.12 System Log

Display system log.

show logging buffered

Parameter

Parameter	Description
show logging buffered	View Buffered logging.

Default -

Mode Privilege configuration mode.

Usage Use this command to display system log.

Example

```
S2800S# show logging buffered
Log messages in buffer
5;Jan 01 2000 00:02:22;%SYSTEM-5-INFO: Logging is enabled
5;Jan 01 2000 00:02:22;%SYSTEM-5-RESTART: System restarted - Warm
Start
5;Jan 01 2000 00:02:24;%LINEPROTO-5-UPDOWN: Line protocol on
GigabitEthernet0/1, changed state to up
5;Jan 01 2000 00:46:06;%AAA-5-LOGIN: New console connection for
user admin, source async ACCEPTED
5;Jan 01 2000 00:47:34;%AAA-5-LOGIN: New telnet connection for
user admin, source 192.168.1.254 ACCEPTED
5;Jan 01 2000 00:47:43;%AAA-5-LOGIN: New telnet connection for
```

user admin, source 192.168.1.254 ACCEPTED

5;Jan 01 2000 00:50:45;%SYSTEM-5-INFO: Logging host is set to

enabled with host 192.168.1.254 (192.168.1.254), port 514,

severity emerg, alert, crit, error, warning, notice

5;Jan 01 2000 00:52:54;%SYSTEM-5-INFO: Logging host is set to

enabled with host 192.168.1.254 (192.168.100.149), port 514,

severity emerg, alert, crit, error, warning, notice

S2800S#

37.1.13 ARP Table

Display ARP table

show arp

Parameter

Parameter	Description
Show arp	-

Default -

Mode Privilege configuration mode.

Usage Use this command to configure the system management IP.

Example

S2800S# show arp

Address HWtype HWaddress Flags Mask Iface

192.168.1.254 ether 40:16:7E:B1:EB:6D C eth0

Command

Command	Description
show arp	Display ARP table.

37.1.14 Configure Static MAC Binding

Configure the MAC addresses of the server and other important equipment to the static MAC address table

mac-address static mac-address **vlan** vlan-id **interface GigabitEthernet** port-id

no mac-address static mac-address **vlan** vlan-id **interface GigabitEthernet** port-id

Parameter	Parameter	Description
	mac-address	Add the mac address
	vlan-id	Add the specified VLAN.
	port-id	The interface number bound to it.

Default -

Mode Global configuration mode.

Usage If you bind a MAC address to a designated port as a static address, it will not age with aging time.

Example
```
S2800S(config)# mac-address static 0001.7A55.E7D2 vlan 1
interfaces GigabitEthernet 0/1
S2800S(config)# no mac-address static 0001.7A55.E7D2 vlan 1
```

Command	Command	Description
	show mac-address static	Display static mac-address all in switch.

37.1.15 MAC Address Drop

When a MAC address is filtered out in a specified vlan, the MAC data cannot be forwarded through this switch. Use the no command to delete the configuration.

mac-address static mac-address **vlan** vlan-id **drop**

no mac-address static mac-address **vlan** vlan-id **drop**

Parameter	Parameter	Description
	drop	The mac address to filter.

Default -

Mode Global configuration mode

Usage If you will be a MAC address in a designated vlan filter out, then the MAC data cannot be forwarded through this switch

Example
```
S2800S(config)# mac-address static 0001.7A55.E7D5 vlan 1
```

Drop

Command	Command	Description
	show mac-address drop	Display drop mac-address all in switch.

37.1.16 Configure MAC-Address Aging-Time

Configure the aging time of the MAC address

mac-address aging-time

Parameter	Parameter	Description
	aging-time	<10-630> Aging time value.

Default 630s.

Mode Global configuration mode.

Usage Use this command to drop some MAC address.

Example S2800S(config)# mac-address aging-time 500

Command	Command	Description
	show mac-address aging-time	Display mac-address aging-time.

37.1.17 Show AMC-Address Count

Display the number of MAC addresses in the FDB table.

show mac-address count

Parameter	Parameter	Description
	count	Display the current number of mac addresses.

Default -

Mode Privilege configuration mode.

Usage -

Example

```
S2800S# show mac-address count
Static Mac Address Count          : 0
Drop Mac Address Count            : 0
Dynamic Mac Address Count         : 15
Total number of entries           : 15
```

Command	Command	Description
	show mac-address static	Display the static MAC address.
	show mac-address drop	Display the filtered MAC address.
	show mac-address dynamic	Display the dynamic MAC address.
	show mac-address interface	Display the MAC address of the specified port.
	show mac-address vlan	Display the MAC address of the specified VLAN.

37.1.18 Display MAC-Address

View information about all bound address tables.

show mac-address [drop | **dynamic** | **static** | **vlan** vlan-id **{dynamic** | **static}** | **interface** port-number **{drop** | **dynamic** | **static}]**

Parameter	Parameter	Description
	show mac-address static	Display the static MAC address.
	show mac-address drop	Display the filtered MAC address.
	show mac-address dynamic	Display the dynamic MAC address.
	show mac-address interface	Display the MAC address of the specified port.
	show mac-address vlan	Display the MAC address of the specified VLAN.

Default -

Mode Privilege configuration mode.

Usage Use this command to view all MAC address.

Example S2800S# show mac-address all

37.1.19 View the Current Configuration

View the current configuration.

show running-config

Parameter	Parameter	Description
	show running-config	View Running configuration.

Default -

Mode Privilege configuration mode.

Usage Use this command to view the current configuration.

Example S2800S# show running-config

37.1.20 Save Configuration

Save the current configuration of the switch

write

Parameter	Parameter	Description
	write	Save running configuration to flash.

Default -

Mode Privilege configuration mode.

Usage Use this command to save the current configuration of the switch.

Example S2800S# write

37.1.21 Restore-Defaults

Restore the switch configuration to the factory

restore-defaults

Parameter	Parameter	Description
	restore-defaults	Restore to default.

Default -

Mode Privilege configuration mode.

Usage Restore the switch configuration to the default.

Example S2800S# restore-defaults

37.1.22 Firmware Upgrade

Firmware upgrade.

Parameter

Parameter	Description
flash://	Copy from flash: file system. flash://startup config flash://running-config flash://backup-config flash://ram.log
tftp://	Copy from tftp: file system. (tftp://serverip/filename)

Default -

Mode Privilege configuration mode.

Usage Use this command to upgrade system

Example S2800S# copy tftp://192.168.1.254/vmlinux.bix flash://image.bin

37.1.23 Firmware Backup

Firmware backup

Parameter

Parameter	Description
flash://	Copy from flash: file system. flash://startup-config flash://running-config flash://backup-config flash://ram.log
tftp://	Copy from tftp: file system. (tftp://serverip/filename)

Default -

Mode Privilege configuration mode.

Usage Use this command to backup system

Example S2800S#copy flash://image.bin tftp://192.168.1.254

37.1.24 Uploading Configuration

Uploading configuration

Parameter	Parameter	Description
	flash://	Copy from flash: file system. flash://startup-config flash://running-config flash://backup-config flash://ram.log
	tftp://	Copy from tftp: file system. (tftp://serverip/filename)

Default -

Mode Privilege configuration mode.

Usage Use this command to Export the current configuration of the system

Example S2800S# copy flash://running-config tftp://192.168.1.254/xxx

37.1.25 Downloading Configuration

Downloading configuration

Parameter	Parameter	Description
	flash://	Copy from flash: file system. flash://startup-config flash://running-config flash://backup-config flash://ram.log
	tftp://	Copy from tftp: file system. (tftp://serverip/filename)

Default -

Mode Privilege configuration mode.

Usage Use this command import the current configuration of the system.

Example copy tftp://192.168.1.254/xxx running-config

37.1.26 Memory Information

Display Memory information

show memory

Parameter

Parameter	Description
show memory-	View Memory statistics.

Default -

Mode Privilege configuration mode.

Usage Use this command to Display Memory information.

Example

```
S2800S# show memory
total(KB) used(KB) free(KB) shared(KB) buffer(KB) cache(KB)
----------+----------+----------+----------+----------+----------
Mem: 127372 76764 50608 0 2740 24888
-/+ buffers/cache: 49136 78236
Swap: 0 0 0
S2800S#
```

37.1.27 CPU Information

Display CPU information

Parameter

Parameter	Description
Show cpu	View CPU utilization.

Default -

Mode Privilege configuration mode.

Usage Use this command to Display CPU information

Example S2800S# show cpu

CPU: 5% used, 95% free

37.1.28 Flash Information

Display flash information.

Parameter	Parameter	Description
	show flash	View Flash Operations.

Default -

Mode Privilege configuration mode.

Usage Use this command to Display flash information

Example

```
S2800S# show flash
File Name File Size Modified
------------------------ ---------------- ------------------------
startup-config 1691 2000-01-01 00:49:44
rsa1 976 2000-01-01 00:01:02
rsa2 1679 2000-01-01 00:01:37
dsa2 668 2000-01-01 00:02:04
ssl_cert 891 2000-01-01 00:02:08
image 7740274 2017-05-31 18:29:07
```

37.1.29 Cable Detection

Display cable information.

Parameter	Parameter	Description
	show cable-diag	View Cable Diagnostics.

Default -

Mode Privilege configuration mode.

Usage Use this command to display cable information

Example

```
S2800S# show cable-diag interfaces GigabitEthernet 0/1
Port    | Speed | Local pair | Pair length | Pair status
--------+--------+-------------+---------------+--------------
gi0/1  | auto   | Pair A       | 6.00            | Normal
Pair B | 6.00 | Normal
Pair C | 6.00 | Normal
Pair D | 6.00 | Normal
```

-

37.1.30 Web-Language

Configure switch web-language.

Parameter

Parameter	Description
web-language en	Set web language to English.

Default -

Mode Global configuration mode

Usage Use this command to configure the switch web-language

Example S2800S(config)# web-language en

Command

Command	Description
show web-language	Display the switch web-language.

37.1.31 Telnet

Configure system management IP.

Ip address x.x.x.x

Parameter

Parameter	Description

	Ip address	The int is in the rang of <0-255>.
	mask	The int is in the rang of <0-255>.
	default-gateway	The int is in the rang of <0-255>.

Default 192.168.1.1

Mode Global configuration mode.

Usage Use this command to configure the system management IP

Example S2800S(config)# ip address 192.168.1.10 mask 255.255.255.0

S2800S(config)# ip default-gateway 192.168.1.2554

Command

Command	Description
show ip	Display management IP information.

37.1.32 Show Version

Displays the current version of switch.

Parameter

Parameter	Description
show version	System hardware and software status.

Default -

Mode Privilege configuration mode.

Usage View the current version.

Example S2800S-8T2F-P Version Information

Hardware Version : v1.0

SN number : M41803000288

MAC Address : B89B.C9FA.1E4A

Loader Version : 1.00.002

Loader Date : Nov 03 2017 - 17:35:00

Firmware Version : S2800S-8T2F-P FSOS v1.0.2.9

Firmware Date : Jul 06 2021 - 09:27:35

System Uptime is 0 hour 2 minutes 55 seconds

37.1.33 DHCP Server Enable

Enable DHCP server

Parameter

Parameter	Description
Ip dhcp server	DHCP configuration.

Default Disabled

Mode Global configuration mode.

Usage Enable dhcp server

Example S2800S(config)# ip dhcp server

S2800S(config)# no ip dhcp server

Command

Command	Description
show ip dhcp server	Display IP DHCP server information.

37.1.34 DHCP Server Configuration

Configure DHCP server.

ip dhcpserver

Parameter

Parameter	Description
pool	IP pool is A.B.C.D-E.F.G.H.

Default -

Mode Global configuration mode.

Usage Set the DHCP server to assign IP to client.

Example S2800S(config)# ip dhcpserver pool 192.168.1.2-192.168.1.253

Command

Command	Description
show ip dhcp server	Display IP DHCP server information.

38. DHCP Relay

38.1 DHCP Relay

38.1.1 DHCP Relay Enable

Enable IP DHCP relay

Parameter

Parameter	Description
Ip dhcp relay	Enable the IP DHCP relay, the default is disable.

Default -

Mode Global configuration mode.

Usage Use this command to configure and enable the IP DHCP relay globally

Example S2800S(config)# ip dhcp relay

S2800S(config)# no ip dhcp relay

Command

Command	Description
show ip dhcp relay	Display IP DHCP relay information.

38.1.2 DHCP Relay for VLAN

Enable DHCP relay information 82 for VLAN.

Parameter

Parameter	Description
dhcp-relay vlan	Enable the dhcp-relay VLAN.

Default -

Mode Global configuration mode.

Usage There will be DHCP relay information 82 for VLANs enabled.

Example S2800S(config)# dhcp-relay vlan 1-4094

S2800S(config)# no dhcp-relay vlan 1-4094

Command

Command	Description
show ip dhcp relay	Display IP DHCP relay information.

38.1.3 DHCP Relay for Ports

Enable DHCP relay information 82 for ports.

Parameter

Parameter	Description
ip dhcp relay	Enable the IP DHCP relay, the default is disable.

Default -

Mode Interface configuration mode.

Usage There will be DHCP relay information 82 for VLANs enabled.

Example S2800S(config-if-GigabitEthernet0/1)# ip dhcp relay

S2800S(config-if-GigabitEthernet0/1)# no ip dhcp relay

Command

Command	Description
show dhcp-relay interfaces GigabitEthernet 0/1	Display IP DHCP relay information For ports.

38.1.4 Option 82 of Remote-ID

Configure DHCP relay information 82 of remote-ID.

Parameter

Parameter	Description
STRING	ID string (1~63

Default DUT's mac address.

Mode Global configuration mode.

Usage A "remote ID" containing the switch's information as a trusted identifier for the remote high-speed modem.

Example S2800S(config)# dhcp-relay option remote-id 192.168.1.10

Command

Command	Description
show dhcp-relay	Display DHCP relay information.

38.1.5 Option 82 of CID

Configure DHCP relay information 82 of circuit-ID.

Parameter	Parameter	Description
	STRING	ID string (1~63

Default CID in DHCP relay information 82 of L2 relay contains VLAN-unit-port.

Information from which the packet is received

Mode Interface configuration mode

Usage It indicates that the received DHCP request message is from the link identifier

Example S2800S(config-if-GigabitEthernet0/5)# dhcp-relay vlan 1 option circuit-id v5

Command	Command	Description
	show dhcp-relay	Display DHCP relay information.

38.1.6 DHCP Relay Policy

Configure global DHCP relay policy.

dhcp-relay option action (drop | keep | replace)

Parameter	Parameter	Description
	drop	Drop packets with option82.
	keep	Keep original option82.
	replace	Replace option82 content by switch setting.

Default The global DHCP relay policy shall be drop

Mode Global configuration mode

Usage DHCP relay information 82 of L2 relay policy

Example S2800S(config)# dhcp-relay option action drop

Command	Command	Description

	show dhcp-relay interfaces GigabitEthernet 0/5	Display DHCP relay of CID Information.

38.1.7 DHCP Relay Information TTL Remark

Set DHCP relay information of L2 relay remarked TTL value

ip dhcp relay ttl remark <0-120>

Parameter	**Parameter**	**Description**
	<0-120>	TTL remark value.

Default Global DHCP relay information TTL remark disabled.

Mode Global configuration mode.

Usage Set DHCP relay information of L2 relay remarked TTL value.

Example S2800S(config)# ip dhcp relay ttl remark 50

Command	**Command**	**Description**
	show ip dhcp relay	Display IP DHCP relay information.

38.1.8 DHCP Relay Server Address

Configure the server IP address

ip helper-address x.x.x.x

Parameter	**Parameter**	**Description**
	x.x.x.x	Server IP address.

Default The global DHCP relay server address shall be zero in system.

Mode Global configuration mode.

Usage Configure the server IP address.

Example S2800S(config)# ip helper-address 192.168.1.15

Command	**Command**	**Description**

show ip dhcp relay	Display IP DHCP relay information

39. ONVIF

39.1 Surveillance-VLAN-v2

39.1.1 ONVIF Enable

surveillance-vlan-v2

Parameter	Parameter	Description
	surveillance-vlan-v2	Activate NVR and IPC auto discovery.

Default -

Mode Global configuration mode.

Usage Use this command to configure and enable NVR and IPC auto discovery.

Example S2800S(config)# surveillance-vlan-v2

S2800S(config)# no surveillance-vlan-v2

Command	Command	Description
	show surveillance-vlan-v2 onvif discover-port	Display ONVIF information.

39.1.2 ONVIF VLAN

surveillance-vlan-v2 vlan

Parameter	Parameter	Description
	vlan id	<2-4094> Specifies the Surveillance VLAN v2 VLAN ID.

Default -

Mode Global configuration mode.

Usage Use this command to configure surveillance vlan id

Example S2800S(config)# surveillance-vlan-v2 vlan 2

Command	Command	Description
	show surveillance-vlan	Display ONVIF VLAN information.

39.1.3 ONVIF VLAN Priority

surveillance-vlan-v2 cos

Parameter

Parameter	Description
Cos	<0-7> Specify the Surveillance VLAN v2 Class of Service.

Default -

Mode Global configuration mode

Usage Use this command to configure surveillance VLAN priority

Example S2800S(config)# surveillance-vlan-v2 vlan 2

Command

Command	Description
show surveillance-vlan	Display ONVIF VLAN priority.

39.1.4 ONVIF Discover Port

surveillance-vlan-v2 onvif_discover_port

Parameter

Parameter	Description
Port	range <80,443,554,1025-65535>, default value is 554.

Default -

Mode Global configuration mode.

Usage Use this command to configure NVR and IPC discovery port.

Example S2800S(config)# surveillance-vlan-v2 onvif_discover_port 37777

Command

Command	Description
show surveillance-vlan-v2 onvif discover-port	Display ONVIF discover_port.

39.1.5 ONVIF Trap

surveillance-vlan-v2 trap enable

Parameter

Parameter	Description
enable	Enable SNMP trap.

Default -

Mode Global configuration mode.

Usage Send trap message to SNMP server if IPC drops line.

Example S2800S(config)# surveillance-vlan-v2 trap enable

Command

Command	Description
show surveillance-vlan	Display ONVIF trap state.

40. Static Route

40.1.1 Turn off Switch Management VLAN

management-vlan disable

Parameter	Parameter	Description
	disable	Disable management-vlan.

Default -

Mode Global configuration mode

Usage Turn off switch management VLAN

Example S2800S(config)# management-vlan disable

Command	Command	Description
	show management-vlan	Display ONVIF trap state.

40.1.2 Interface VLAN IP

Configure interface VLAN IP.

Ip address x.x.x.x

Parameter	Parameter	Description
	Ip address	The int is in the rang of <0-255>
	mask	The int is in the rang of <0-255>
	default-gateway	The int is in the rang of <0-255>

Default -

Mode Interface VLAN configuration mode.

Usage Use this command to configure the interface vlan ip.

Example S2800S(config)# interface vlan 100

S2800S(config-if-vlan)# ip add 20.1.1.1 mask 255.255.255.0

Command	Command	Description
	show interfaces vlan ip	Display management IP information.

40.1.3 Configure Static Route

Configure Static Route.

route-entry add ip x.x.x.x

Parameter	Parameter	Description
	Ip address	The int is in the rang of <0-255>.
	netmask	The int is in the rang of <0-255>.
	gw	The int is in the rang of <0-255>.

Default -

Mode Global configuration mode.

Usage Use this command to configure the interface VLAN IP.

Example S2800S(config)#route-entry add ip 30.1.1.0 netmask 255.255.255.0 gw 20.1.1.20

Command	Command	Description
	show staticroute	Display management IP information.

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