SWITCH Series Commands Configuration Manual

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

```
SWITCH(config)# mtu 10240
```

Command

command	description
show interfaces gigabitEthernet *id* ***mtu***	View the interface mtu status information.

Example

```
SWITCH# show interfaces GigabitEthernet 0/1 mtu
      Interface          |       MTU
------------------- --+--------------------
          gi0/1          |     10240
```

2 link-Aggregate Port Command

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 lgorithm
Example	SWITCH(config)# **link-aggregation load-balance ip**

Command

command	description
show link-aggregation group	Display link-aggregation settings

2.1.2 link-aggreation

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-aggregate 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 followingexample creates a link aggregation group 1 SWITCH(config)#**link-aggregation 1 mode manual**

2.1.3 Interface link-aggreation

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-aggregate port.

Mode	Interface configuration mode
Usage	All AGG member interfaces need to be in the same VLAN.
Example	SWITCH(config)# **interface GigabitEthernet /1** SWITCH(config-if-GigabitEthernet0/1)# **link-aggregation 1 active**

Command

parameter	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-aggregate group	Show all link aggregation groups
show link-aggregate 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：
SWITCH# **show link-aggregation group 1**

Command

command	description
Show link-aggregation group	Display the status of all link aggregation groups

3 Port mirroring command

3.1Configure 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 can not be both a source port and a destination port. Use the **show monitor** command to display the operating status of the SPAN session.

Example	The following example shows how to create a SPAN session: Session 1. If the session has already been set up,First clear the configuration of the current session 1, and then set the port 0 interface to the port interface 0/1. SWITCH(config)# **no monitor session 1** SWITCH(config)# **monitor session 1 source interfaces GigabitEthernet 0/2 both** SWITCH(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	The following example shows how to display the current state of a SPAN session by using the show monitor privilege command SWITCH# **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 command

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) can not be accessed from each other.
Example	The following is the isolation between port 0/1 and port 0/2. SWITCH(config)# **interface GigabitEthernet 0/1** SWITCH(config-if-GigabitEthernet0/1)# **switchport protected** SWITCH(config)# **interface GigabitEthernet 0/2** SWITCH(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

Displays the current port isolation configuration.
show interfaces port-id **protected**

parameter	parameter	description
	show interfaces port-id **protected**	Displays the current port isolation configuration.

Default	Null
Mode	Privilege mode
Usage	Null
Example	SWITCH#**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.
SWITCH(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-shap

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:

SWITCH# **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.
SWITCH(config-if-GigabitEthernet0/1)#**storm-control broadcast kbps 1024**
SWITCH(config-if-GigabitEthernet0/1)#**storm-control Unknown-multicas kbps 1024**
SWITCH(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

command	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

```
SWITCH# show storm-control
Interface        |  Broadcast   | Unkown-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	description
parameter	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 SWITCH(config-if-GigabitEthernet0/1)# **port-security address-limit 200 action discard**

	parameter	description
Command	**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:

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

```
  Port    |     Security     | CurrentAddr |      Action
----------+------------------+-------------+------------------
  gi0/1  |  Enabled (  200) |      13    |     Discard
```

Command	parameter	description
	Show port-security	View the port security global status

8 NTP/SNTP COMMAND

8.1 NTP Configure relevant commands

8.1.1 server

Configure the NTP/SNTP server IP address
{[**ntp|sntp**]} **server**{server-ip}

	parameter	description
parameter	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　SWITCH(config)# **ntp server 192.168.100.150**
SWITCH(config)# **sntp server 192.168.100.159**

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	description
Parameter	**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: SWITCH# **show ntp** NTP is Enabled NTP Server address: 192.168.100.150 NTP Server port: 123 Display SNTP configuration information: SWITCH# **show sntp** SNTP is Enabled SNTP Server address: 192.168.100.159 SNTP Server port: 123

9EEE

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: SWITCH(config)# **eee** Open the eee function for the specified port: SWITCH(config)# **eee interfaces GigabitEthernet** 0/1

Command	parameter	description
	Show eee	View the configuration information for the EEE function-

10DDOS PROTECTION

10.1 Configuration ddos protection

10.1.1Turn 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-sportl1024-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: SWITCH(config)# **dos land-deny**

10.1.2Turn off DDOS protection

no dos {attack-name}

Command	**no dos** {attack-name}

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: SWITCH(config)# **no dos land-deny**

10.2show DDOS protection

View the configuration information for DOS protection.

Show {dos**}**

Parameter	**Show dos**

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:

```
SWITCH# 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
```

11CPU Guard

11.1Configuration 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: SWITCH(config)# **cpu-protect cpu bandwidth 4000** Set the bandwidth of manage packets: SWITCH(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	description
Parameter	**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:
SWITCH# **show cpu-protect**
View the configuration information for CPU bandwidth:
SWITCH# **show cpu-protect cpu**
View the bandwidth of each type of packet:
SWITCH# **show cpu-protect sub-interface manage**

12Daul Configuration

12.1backup the configuration file

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

	parameter	description
Parameter	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: SWITCH# **copy running-config backup-config** backup the startup-config file: SWITCH# **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	restore the configuration file
Example	restore the running-config file: SWITCH# **copy backup-config running-config** restore the startup-config file: SWITCH# **copy backup-config startup-config**

13RMON

13.1rmon event

rmon eventt<1-65535>[log][trap COMMUNITY][description DESCRIPTION][owner NAME]

Parameter

parameter	description
<1-65535>	Specify event index to create or modify
log	Specify to show syslog
trap COMMUNITY	Specify SNMP community to show SNMP trap
description DESCRIPTION	Specify description of event
owner NAME	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.

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

13.2rmon 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>f**alling**<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 threshlod.

```
SWITCH(config)# rmon event 1 log
SWITCH(config)# rmon event 2 log
SWITCH(config)# rmon alarm 1 interface GigabitEthernet 0/1 pkts 300 delta
rising 1000 1 falling  100 1 startup rising-falling owner admin
SWITCH# show rmon alarm 1
Rmon Alarm Index            : 1
Rmon Alarm Sample Interval   : 300
Rmon Alarm Sample Interface  : gi0/1
Rmon Alarm Sample Variable   : Pkts
Rmon Alarm Sample Type       : delta
```

:mon 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

Example

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

13.3rmon 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.
SWITCH(config)# **rmon history 1 interface GigabitEthernet 0/1**
interval 60 owner admin
SWITCH# **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

SWITCH(config)# **rmon history 1 interface GigabitEthernet 0/1**
interval 30 owner admin
SWITCH# **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

13.4clear rmon interface statistics

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

	parameter	description
Parameter	port-id	Specify the interface to clear

Default Null

Mode privilege mode

Usage Use the **clear rmon interface statistics** command to clear RMON etherStati 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 etherStat Statistics on interface gig0/1.

```
SWITCH# clear rmon interfaces GigabitEthernet 0/1 statistics
SWITCH# 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
```

13.5show 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.

```
SMC# 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
```

13.6show 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.
	SWITCH(config)# **rmon event 1 log trap public description test owner admin**
	SWITCH(config)# **exit** //Returns the privilege mode
	SWITCH# **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

13.7show 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.
	SWITCH(config)# **SMC(config)# rmon alarm 1 interface GigabitEthernet 0/1 broadcast-pkts 300 delta rising 10000 1 falling 100 1 startup rising-falling owner admin**
	SWITCH(config)# **exit** //Returns the privilege mode
	SWITCH# **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

:mon 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

13.8show 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. SWITCH(config)# **rmon history 1 interface GigabitEthernet 0/1 interval 30 owner admin** SWITCH(config)# **exit** SWITCH# **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

14ARP Inspection

14.1arp inspection

arp-inspection
no arp-inspection

parameter	description

Parameter	-	-
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. **SWITCH(config)# arp-inspection** **SWITCH# 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	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. SWITCH(config)# **interface GigabitEthernet 0/1**	

SWITCH(config-if-GigabitEthernet0/1)# **arp-inspection rate-limit 30**
SWITCH(config-if-GigabitEthernet0/1)# **end** //Returns the privilege mode
SWITCH# **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

14.3arp 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. SWITCH(config)# **interface GigabitEthernet 0/1** SWITCH(config-if-GigabitEthernet0/1)# **arp-inspection trust** SWITCH(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

14.4arp 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 packetsThat 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 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

```
SWITCH(config)# interface GigabitEthernet 0/1
SWITCH(config-if-GigabitEthernet0/1)# arp-inspection validate src-mac
SWITCH(config-if-GigabitEthernet0/1)# arp-inspection validate dst-mac
SWITCH(config-if-GigabitEthernet0/1)# arp-inspection validate ip allow-zeros
SWITCH(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
```

14.5clear 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 interiface gig0/1t.You can Verify settings by the following **show arp-inspection interface statistics** command. SWITCH# **clear arp-inspection interfaces GigabitEthernet 0/1 statistics** SWITCH# **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

14.6show 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 SWITCH# **show arp-inspection** Dynamic ARP Inspection : enabled Enable on Vlans : 1-4094

14.7show 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 inferfaces** command to show settings or statistics of interface.
Example	The example shows how to show settings of interface gig0/1 SWITCH# **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 SWITCH# **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 Command

15.1 Flow Control Configuration Command

15.1.1 flowcontrol

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	SWITCH(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	SWITCH(config)# vlan 3

SWITCH(confi g-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	SWITCH(config)# vlan 5 SWITCH(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

Usage

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 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:
SWITCH(config)# interface GigabitEthernet 0/1
SWITCH(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 vlan vlan-id to inter configuration mode .Use the no option of the command to remove the create 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	SWITCH-SWITCH(config)# management-vlan vlan 4 SWITCH(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: SWITCH(config)# interface GigabitEthernet 0/1 SWITCH(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	description
Parameter	**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: SWITCH(config)# interface GigabitEthernet 0/1 SWITCH(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
SWITCH(config)# interface gig 0/1
SWITCH(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	SWITCH(config)# interface GigabitEthernet 0/1 SWITCH(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	SWITCH(config)# interface GigabitEthernet 0/1 SWITCH(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

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

```
SWITCH# 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 can not 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

SWITCH(config)# voice-vlan vlan 2
SWITCH(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 can not configure voice-vlan on the access port!

Voiece-vlan mode [autoTag | autounTag | manual]

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 SWITCH(config)# interface GigabitEthernet 0/1 SWITCH(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.

SWITCH(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 SWITCH(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).

SWITCH(config)# voice-vlan aging-time X(1-65535)
SWITCH(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 SWITCH(config)# voice-vlan aging-time 30 SWITCH(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

```
SWITCH# show voice-vlan device
Interface  |    MAC Address    |        start-time
-----------+-------------------+-------------------------
 gi0/1     |    00E0.BB00.0000 |    2000-01-01 00:24:03
SWITCH# 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 can not 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	SWITCH(config)# surveillance-vlan vlan 3 SWITCH(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 can not 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 SWITCH(config)# interface GigabitEthernet 0/1 SWITCH(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.

SWITCH(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 SWITCH(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).

SWITCH(config)# surveillance-vlan aging-time X(1-65535)
SWITCH(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
SWITCH(config)# surveillance-vlan aging-time 20
SWITCH(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

```
SWITCH# 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
SWITCH# 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_OFFER、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

SWITCH(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

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	SWITCH(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	
Mode	global configuration mode
Usage	there be DHCP snooping information 82 for VLANs enabled

Example

```
SWITCH-10T(config)# dhcp-snooping vlan 1-4094
```

Command

command	description
show dhcp-snooping	Display dhcp snooping information

command	description

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 be DHCP snooping information 82 enabled

Example

```
SWITCH-10T(config-if-GigabitEthernet0/1)# dhcp-snooping option
```

Command	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

```
SWITCH-10T(config)# dhcp-snooping option remote-id 192.168.100.145
```

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		
Mode	interface configuration mode	
Usage	It indicates that the received DHCP request message is from the link identifier	
Example	SWITCH-10T(config-if-GigabitEthernet0/1)# dhcp-snooping option circuit-id 192.168.100.145	

Command	command	description
	show dhcp-snooping interfaces GigabitEthernet 0/1	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

```
SWITCH-10T(config-if-GigabitEthernet0/1)# dhcp-snooping option
action drop
```

Command

command	description
show dhcp-snooping interfaces GigabitEthernet 0/5	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

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)

Default: NULL

Mode: Privileged mode

Usage: view the current DHCP-snooping information

Example

```
SWITCH# 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)

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

Command

parameter	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
SWITCH(config)# loopback-detection enable
SWITCH(config)# loopback-detection ctp-interval 1
SWITCH(config)# loopback-detection resume-interval 60
SWITCH(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
SWITCH# 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	description
Parameter	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. SWITCH(config)# spanning-tree enable SWITCH(config)# no spanning-tree enable

	command	description
Command	**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	description
Parameter	stp	Running the stp protocol
	rstp	Running the rstp protocol
	mstp	Running the mstp 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 SWITCH(config)# spanning-tree mode rstp

	command	description
Command	**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	description
Parameter	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 SWITCH(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 neighboring 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 neighboring 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 SWITCH(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	description
Parameter	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 SWITCH(config)# spanning-tree max-age 30

	command	description
Command	**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	description
Parameter	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

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 SWITCH(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	Using the dot1D-1998 port path consumption calculation criteria
dot1T-2001	Using 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 SWITCH(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	description
Parameter	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 SWITCH(config)# spanning-tree priority 4096

	command	description
Command	**show spanning-tree**	View the current spanning tree status and configuration information

21.1.9 spanning-tree mst configure

Configure the mstp parameters

spanning-tree mst configuration[cr|instance|name|revision|no]}
spanning-tree mst instance (0-15) priority (0-61440)

command	description

Parameter	anning-tree mst configure	Enter the MSTP configuration mode Note that "cr" means no arguments
	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
	Spanning-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 be ensure that the MSTP version, name, instance mapping relationship of the 2 devices are the same.
Example	Set the switch mst instance is 5,name is nihao,revision is 33 and configure the instance 5 priority is 4096 SWITCH(config)# spanning-tree mst configuration SWITCH(config-mst)# instance 5 vlan 5 SWITCH(config-mst)# name nihao SWITCH(config-mst)# revision 33 SWITCH(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 SWITCH(config-if-GigabitEthernet0/1)# spanning-tree enable SWITCH(config-if-GigabitEthernet0/1)# no spanning-tree enable

Command

command	description
show 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 SWITCH(config-if-GigabitEthernet0/1)# spanning-tree bpdu guard

Command

command	描述
show 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	description
Parameter	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 SWITCH(config-if-GigabitEthernet0/1)# spanning-tree cost 2000

	command	description
Command	**show 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	description
Parameter	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 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 SWITCH(config-if-GigabitEthernet0/1)# spanning-tree guard loop

Command

command	description
show 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 SWITCH(config-if-GigabitEthernet0/1)# spanning-tree link-type shared

Command

command	description
show 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 por

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

Command

command	description
show 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

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

Command

command	description
show 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 SWITCH(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

trap [new-root| toplogy-change]

Parameter	parameter	description
	new-root	new root trap
	toplogy-change	toplogy 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 SWITCH(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. SWITCH# show spanning-tree

Command

command	description
show spanning-tree	View the current spanning tree global state and configuration
Ruijie#show spanning-tree interface gigabitEthernet 0/x	View the spanning tree status and configuration information for Gi0/1

22 DHCP v4server

22.1 Configure commands

22.1.1 DHCP v4server

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	SWITCH(config)# ip dhcpserver pool 192.168.6.100-192.168.6.200 pt1:192.168.6.100, pt2:192.168.6.200 SWITCH(config)# ip dhcpserver mask 255.255.255.0 SWITCH(config)# ip dhcpserver gate-way 192.168.6.1 SWITCH(config)# ip address 192.168.6.1 SWITCH(config)# ip dhcp server SWITCH(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 serverl

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	Enbale 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
SWITCH(config)# ip dhcp
SWITCH# 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 show ip DHCP

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

```
SWITCH# show ip
IP Address: 192.168.0.143
Subnet Netmask: 255.255.255.0
Default Gateway: 192.168.0.177
SWITCH# 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	Enbale 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
SWITCH(config)# ipv6 dhcp
SWITCH(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

```
SWITCH# show ipv6 dhcp
DHCPv6 Status : enabled
SWITCH# 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	Disaplays 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

SWITCH(config)# **ip igmp snooping**
SWITCH(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 any more. 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 tha set ip igmp snooping vlan test： SWITCH(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 tha set ip igmp snooping fast-leave test：
SWITCH(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:
SWITCH(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.

Usage | When igmp and mld snooping disable,it can't set action router port.
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 i**p igmp snooping unknown-multicast action** command to change action.

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

Example

The following example specifies the set ip igmp unknown-multicast test:
SWITCH(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:
SWITCH(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 enable.

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：
SWITCH(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 delete.

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：
SWITCH(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**

p 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： SWITCH(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	Eable ip igmp snooping querier,the default querier verion 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：
SWITCH(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 send.
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：
SWITCH(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：
SWITCH(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：
SWITCH(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

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： SWITCH(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：
SWITCH(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 exist 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：
SWITCH(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：
SWITCH(config)# **ip igmp profile 1**
SWITCH(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 match 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. SWITCH(config)# interface GigabitEthernet 0/1 SWITCH(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	None.
Mode	Privileged EXEC.

Usage . his command will clear all of 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.

```
SWITCH#clear ip igmp snooping statistics
SWITCH#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 None.

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.

e following example specifies that show ip igmp snooping groups test.

```
SWITCH#clear  ip igmp snooping groups
SWITCH#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.

```
SWITCH#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
```

GMP 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.
SWITCH#**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

None.

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.
SWITCH#**show ip igmp snooping forward-all**

IGMP 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.

SWITCH#**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 — None.

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.
SWITCH#**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

None.

Mode

Privileged EXEC.

Usage

This command will display all of the static vlan ip igmp mrouter info.

Example

The following example specifies that show ip igmp snooping querier test.
SWITCH#**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

SWITCH(config)# **ipv6 mld snooping**
SWITCH(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 any more.
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 tha set ipv6 mld snooping vlan test：
SWITCH(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 tha set ipv6 mld snooping vlan immediate-leave test：
SWITCH(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 enable.

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 -supression 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：
SWITCH(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: SWITCH(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 ackets 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：
SWITCH(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 enable.

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：
SWITCH(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 delete.

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

following example specifies that set ipv6 mld snooping static group test：
SWITCH(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 of 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.
SWITCH#**clear ipv6 mld snooping statistics**
SWITCH#**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.

```
SWITCH#clear ipv6 mld snooping groups
SWITCH#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.

SWITCH#**show ipv6 mld snooping**

```
                MLD Snooping Status
              --------------------

  Snooping                    : Enabled
  Report Suppression          : Enabled
  Operation Version           : v1
 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

None.

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.
SWITCH#**show ipv6 mld snooping vlan 1**

MLD Snooping is globaly enabled
MLD Snooping VLAN 1 admin : enabled
MLD Snooping oper mode : enabled
MLD Snooping robustness: admin 2 oper 2
MLD Snooping query interval: admin 125 sec oper 125 sec
MLD Snooping query max response : admin 10 sec oper 10 sec
MLD Snooping last member query counter: admin 2 oper 2
MLD Snooping last member query interval: admin 1 sec oper 1 sec
MLD Snooping immediate leave: enabled
MLD Snooping automatic learning of multicast router ports: enabled

command	description

Command	**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.

SWITCH#**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.
SWITCH#**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	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.
SWITCH#**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.include 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.
SWITCH#**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,include ipv4 address、ipv6 address and domain name.

traceroute *[HOSTNAME]*

Parameter

parameter	description
[HOSTNAME]	Host name info

Default

None.

Mode

Privileged EXEC.

Usage

This command will record the routing information to the host.

Example

The following example specifies that traceroute test.
SWITCH#**traceroute www.baidu.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	descriptio
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

	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|hlep|no|permit**]**

Parameter

parameter	description
0-9	Config ace number，optional,Default vlaue is 0.
deny	Deny assignable data type， parameter has [any|host|sip]
end	Quit
exit	Back to Previous Level
no	Delete the rules
permit	Permint 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.

20.1.4 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.

ed 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
ace_id	ACE number(0-9)

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 fliter rx data.

interface GigabitEthernet {port_id**}**
ip access-list {ACL-name**} commit**
interface GigabitEthernet {port_id**}**
no ip access-list {ACL-name**} commit**

	parameter	description
Parameter	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	description
Parameter	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	descriptio
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|hlep|no|permit]

Parameter

parameter	descriptio
0-9	Config ace number，optional,Default vlaue is 0.
deny	Deny assignable data type ， parameter has [any|host|sip]
end	Quit
exit	Back to Previous Level
no	Delete the rules
permit	Permint 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 ipv6 access-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	description
Parameter	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
	ace_id	ACE number(0-9)

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 fliter rx data.

interface GigabitEthernet {port_id**}**
ipv6 access-list {ACL-name**} commit**
interface GigabitEthernet {port_id**}**
no ipv6 access-list {ACL-name**} commit**

	parameter	description
Parameter	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	descriptio
	show access-list	Display access control list information.

28.1.14 mac ACE configuration

Under the mac access-list,config the specific rules.

ess-list extended {20-25**}**
[0-9|deny|end|exit|hlep|no|permit]

Parameter

parameter	description
0-9	Config ace number，optional,Default vlaue is 0.
deny	Deny assignable data type， parameter has [any|host|sip]
end	Quit
exit	Back to Previous Level
no	Delete the rules
permit	Permint 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 fliter 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	descriptio
	show authentication	display 802.1x information.

29.1.2 authentication dot1x

Under the interface,we use this command open port's 802.1X fuction.

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 GigabitEthernet port_id	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 GigabitEthernet port_id	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 GigabitEthernet port_id	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 connnect 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
pri_value	priority vlaue,(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 192.168.100.1 auth-port 1812 key public priority 1 retransmit 1 timeout 1 type all

Command

command	descriptio
show radius	display radius information.

30.1.2 tacacs host

Configure all the parameters that switch connnect to the tacacs sever .

tacacs host {host_name**} [port] {**port_id**} [key] {**key**} [priority] {**pri_value**} [timeout] {**timeout_vlaue**}**
no tacacs host {ip_addr**}**

	parameter	description
Parameter	host_name	Tacacs sever ip address or domain name
	port_id	TCP/UDP port number,default is 49.(0-65535)
	key	Tacacs server key
	pri_value	priority vlaue,(1-65534)
	timeout_vlaue	Timeout value in seconds to wait for server to reply.(1-30)

Default	port_id:49
Mode	Configuration mode
Usage	Configuration tacacs
Example	tacacs host 192.168.100.1 port 49 key public priority 1 timeout 30

	command	descriptio n
Command	**show tacacs**	display tacacs information.

30.1.3 aaa authentication enable

Configure eable authentication method.

aaa authentication {enable} {list_name**} {**auth_method_list**}**
no aaa authentication {enable} {list_name**}**

	parameter	description
Parameter	list_name	Auth Method List Name
	auth_method_list	Enable Authentication Method List. [radius|tacacs+|enable]

Default	Null
Mode	Configuration mode
Usage	Configure eable authentication method.
Example	aaa authentication enable Xn enable tacacs+ radius

Command	command	descriptio
	show aaa authentication enable lists	display enable authentication information.

30.1.4 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|tacacs+|locaol]

Default	Null
Mode	Configuration mode
Usage	Configure login authentication method.
Example	aaa authentication login Xn local radius tacacs+

Command	command	descriptio
	show aaa authentication login lists	display login authentication information.

30.1.5 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	description
Parameter	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	descriptio
Command	**show line lists**	display login authentication information.

30.1.6 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	description
Parameter	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	descriptio n
show line lists	display telnet authentication information.

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	descriptio
	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 | 192.168.100.1 | 1812 | 1 | 1 | All | public	
Command	Null	

30.2.2 show tacacs

show tacacs information.

show radius

Parameter	parameter	description
	Null	Null
Default	Null	
Mode	Privileged mode	
Usage	display tacacs information.	
Example	show tacacs Prio | Timeout | IP Address | Port | Key ------+---------+-----------------+--------+---------- 1 | 30 | 192.168.100.1 | 49 | public	

Command	Null

30.2.4 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 tacacs+ radius	
Command	Null	

30.2.2 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	Jisplay aaa authentication information..
Example	show aaa authentication login lists Login List Name Authentication Method List ----------| ---------- default | local Xn | local radius tacacs+
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	description
Parameter	[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	generate 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	description
Parameter	classify_mode	Qos Classify mode. [cos|dscp]

Default	Null
Mode	config mode
Usage	config qos classify mode
Example	qos queue trust dscp

	command	descriptio
Command	**show qos**	display qos information.

33.1.2 qos queue schedule

Config qos schedule algorithm.

qos queue schedule {schedule_mode**}**

	parameter	description
Parameter	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	descriptio
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	configg mode
Usage	config qos queue mapping relationship
Example	qos map cos-queue 1 to 1

Command

command	descriptio
show qos map cos-queue	display qos map information.

33.1.4 qos map dscp-queue

Config qos queue mapping relationship.

qos map dscp-queue {dscp_value**} to {**queue_num**}**

	parameter	description
Parameter	dscp_value	DSCP value.
	queue_num	Queue number(1-8)

Default	Null
Mode	confifg mode
Usage	config qos queue mapping relationship
Example	qos map dscp-queue 1 to 8

	command	descriptio
Command	**show qos map dscp-queue**	display qos map information.

33.1.5 qos map weight

When you use WRR mode,you need config every queues weight value.you must use this command.

qos map weight {weight_values**}**

	parameter	description
Parameter	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	descriptio
Command	**show qos map queueing**	display qos queue information.

33.1.6 qos queue strict-priority-num

When you use hybird mode,you need config SP schedule queue's number.you must use this command.

qos queue strict-priority-num {SP_num}

	parameter	description
Parameter	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	description
Parameter	Null	Null
Default	Null	
Mode	Privileged mode	
Usage	display qos information.	

	show qos QoS Mode: enable Basic trust: cos
Command	Null

33.2.2 show qos queueing

show qos queue information.

show qos queueing

	parameter	description
Parameter	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.
Example	show qos map cos-queue 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 dscp-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 command

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

```
SWITCH(config-if-GigabitEthernet0/1)# poe enable
SWITCH(config-if-GigabitEthernet0/1)# no poe enable
```

Command

command	description
show poe interfaces configuration	View the configuration information of current interface POE

64.1.2 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

Example

```
SWITCH(config)# poe mode auto
SWITCH(config)# poe mode energy-saving
SWITCH(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-powe

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

```
SWITCH(config)# interface GigabitEthernet 0/1
SWITCH(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 allocatation 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

```
SWITCH(config)# interface GigabitEthernet 0/1
SWITCH(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

```
SWITCH(config)# poe timer enable
SWITCH(config)# no poe timer enable
```

Command

command	description
show poe timer	View the configuration information of current interface POE timer

64.19 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

Example

```
SWITCH(config)# poe timer enable
SWITCH(config)# interface GigabitEthernet 0/5
SWITCH(config-if-GigabitEthernet0/5)# poe timer periodic everyday 8:30 to 19:30
mon  to wed
SWITCH(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 -

Mode Privilege configuration mode.

Usage Execute this command to view the POE status of the specified port.

Example

```
SWITCH# 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
SWITCH#
```

64.2.2 show poe interfaces

View the PoE status or configuration of all ports

show poe interfaces status

show poe interfaces configuration

Parameter

Parameter	description
-	-

Default -

Mode Privilege configuration mode.

Usage Execute this command to view the POE status or configuration of all ports.

Example

```
SWITCH# 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
SWITCH#
```

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

```
SWITCH# 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

```
SWITCH# show poe timer
  PORT  | Timer mode|   Start timer |   Stop timer
--------+-----------+---------------+-------------
    1   |   Periodic|  Wednesday 8:0| Friday 23:0
```

35 SNMP command

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	close 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	SWITCH(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

```
SWITCH(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

```
SWITCH(config)# snmp-server enable traps
SWITCH(config)# no snmp-server enable traps
```

Command

command	description
show snmp	View the current SNMP switch status.

35.11.4 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

```
SWITCH(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

```
SWITCH(config)# snmp-server host 192.168.100.149 traps
version 1 test
SWITCH(config)# no snmp-server host 192.168.100.149 traps
version 1 test
```

Command

command	description
show snmp host	View the host information of the receiving trap configured by the user。

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

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

```
SWITCH(config)# snmp trap auth
SWITCH(config)# no snmp trap auth
```

Command

command	description
show snmp trap	View the snmp trap configuration

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

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

SWITCH(config)# snmp trap linkUp
SWITCH(config)# snmp trap linkDown

Command

command	description
show snmp trap	View the snmp trap configuration

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

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

SWITCH(config)# snmp trap cold-start
SWITCH(config)# snmp trap warm-start

Command

command	description
show snmp trap	View the snmp trap configuration

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

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

SWITCH(config)# snmp trap stp
SWITCH(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

Default

Mode Privilege configuration mode.

Usage

Example

SWITCH# show snmp
SNMP is enabled.

35.2.2 show snmp trap

Displays the current SNMP trap status.

show snmp trap

parameter

parameter	description

Default –

Mode Privilege configuration mode.

Usage –

Example

```
SWITCH# 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

Default –

Mode Privilege configuration mode.

Usage –

Example

```
SWITCH# 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

Default –

Mode Privilege configuration mode.

Usage –

Example

```
SWITCH# show snmp host
Server          Community/User Name   Notification Version    Notification Type    UDP Port
Retries     Timeout
-----------------------------------------------------------------------------------------------------------
192.168.100.139    test              v1                 trap             162        --          --

Total Entries: 1
```

36.1lldp 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
-	-

Default

default is disable

Mode

Global configuration mode

Usage

Use "**lldp**" command to enable LLDP RX/TX ability. The LLDP enable status is displayed by "**show lldp**" command. Use the **no** form of this command to disable the LLDP.

Example

```
SWITCH(config)# lldp
SWITCH(config)# no lldp
```

Command

command	description
show lldp	Display lldp information

36.1.2LLDP 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
-	-

Default

default is disable

Mode

Interface configuration mode

Usage

Use "**lldp rx**" command to enable LLDP PDU RX ability. The configuration is displayed by "**show lldp**" command.

Example

```
SWITCH(config-if-GigabitEthernet0/1)# lldp rx
SWITCH(config-if-GigabitEthernet0/1)# no lldp rx
```

Command

command	description
show lldp	Display lldp information

36.1.3LLDP 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

Usage

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 time,the large value of the two configuration decides the TX interval ,the configuration is displayed by “**show lldp**” command.

Example

```
SWITCH(config)# lldp tx-interval 10
SWITCH(config)# no lldp tx-interval
```

Command

command	description
show lldp	Display lldp information

36.1.4LLDP 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 .he configuration is displayed by "**show lldp**" command. Use the **no** form of this command to disable the LLDP.

Example

```
SWITCH(config)# lldp reinit-delay 5
SWITCH(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

Usage

Use "**lldp holdtime-multiplier**" command to configure the LLDP PDU hold multiplier that decides time-to-live (TTL) value sent in LLDP advertisements: TTL = (tx-interval * holdtime-multiplier). The configuration could be shown by "**show lldp**" command.

Example

```
SWITCH(config)# lldp holdtime-multiplier 3
SWITCH(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 briging(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 behaviour when lldp dsabled is flooding

Mode

Global configuration mode

Usage

Use “lldp lldpdu” command to configure the LLDP pdu handling behaviour When lldp is globally disabledit 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 disable behavior. the configuration is displayed b y “show lldp” command.

Example

```
SWITCH(config)# lldp lldpdu  bridging
```

Command

command	description
show lldp	Display lldp information

36.1.7LLDP med

LLDP module re-initialization delay.

lldp med
no lldp med

Parameter

Parameter	description
-	-

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.
.

MED.

Example

```
SWITCH(config-if-GigabitEthernet0/1)# lldp med
SWITCH(config-if-GigabitEthernet0/1)# no lldp med
```

Command

command	description
show lldp	Display lldp information

36.1.8lldp med fast-start-repeat-count

Configure LLDP MED fast start repeat count

lldp med fast-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 pdu f ast 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 f 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

```
SWITCH(config)# lldp med fast-start-repeat-count 3
```

Command

command	description
show lldp med	Display lldp med information

36.1.9lldp 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 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

```
SWITCH(config-if-GigabitEthernet0/1)# lldp med tlv-select network-policy
SWITCH(config-if-GigabitEthernet0/1)# no lldp med tlv-s elect
```

Command

command	description
show lldp interfaces GigabitEthernet 0/1	Display lldp information

36.1.10lldp 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 b y “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

```
SWITCH(config-if-GigabitEthernet0/1)# lldp tlv-select sys-desc
SWITCH(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 802.1pvid tlv attach state
enable	enable lldp 802.1pvid 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

```
SWITCH(config-if-GigabitEthernet0/1)# lldp tlv-select pvid
enable
SWITCH(config-if-GigabitEthernet0/1)# lldp tlv-select pvid
disable
```

Command

command	description
show lldp interfaces GigabitEthernet 0/1	Display lldp information

36.1.12lldp 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 VLANlist for 802.1 VLAN-NAME TLV. The configuration could be shown by “show lldp” Command

Example

```
SWITCH(config-if-GigabitEthernet0/1)# lldp tlv-select vlan-name
add 1
SWITCH(config-if-GigabitEthernet0/1)# no lldp tlv-select
```

Command

command	description
show lldp interfaces GigabitEthernet 0/1	Display lldp information

36.1.13LLDP 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
-	-

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

```
SWITCH(config-if-GigabitEthernet0/1)# lldp tx
SWITCH(config-if-GigabitEthernet0/1)# no lldp tx
```

Command

command	description
show lldp	Display lldp information

36.1.14LLDP 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 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

```
SWITCH(config)# lldp tx-delay 5
SWITCH(config)# no lldp tx-delay
```

Command

command	description
show lldp	Display lldp information

36.1.15show lldp

Displays 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

SWITCH# 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 | |192.168.100.151

Port ID: gi0/1
802.3 optional TLVs:
802.1 optional TLVs
PVID: Disabled
VLANs: 1

36.1.16show 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

SWITCH# show lldp local-device

LLDP Local Device Information:
 Chassis Type : Mac Address
 Chassis ID : 00E0.4C01.7899
 System Name : SWITCH
 System Description :
 System Capabilities Support : Bridge
 System Capabilities Enable : Bridge
 Management Address : 192.168.100.151(IPv4)
 Management Address : fe80::2e0:4cff:fe01:7899(IPv6)

36.1.17show 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 dusplay lldp med configuration information

Example

SWITCH# show lldp med

Fast Start Repeat Count: 3
lldp med network-policy voice: manual

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

show lldp neighbor

Displays the current SNMP community status.

show lldp neighbor

parameter

parameter	description
-	-

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

```
SWITCH# show lldp neighbor

Port |  Device ID      |    Port ID     |     SysName     | Capabilities | TTL
---- + ---------------- + ---------------- + ---------------- + ------------ + -----
gi0/4 |   00E0.4C01.7899 |         gi0/1 |                 |              |  100
```

]

36.1.19show lldp statistics

Displays the current SNMP community status.

show lldp statistics

parameter

parameter	description
-	-

Default –

Mode Privilege configuration mode.

Usage Use “**show lldp statistics**” command to display the LLDP RX/TX statistics.

Example

SWITCH# show lldp statistics

LLDP Global Statistics:
Insertions : 1
Deletions : 0
Drops : 0
Age Outs : 0

Port	TX Frames Total	RX Frames Total	RX Frames Discarded	RX Frames Errors	RX TLVs Discarded	RX TLVs Unrecognized	RX Ageouts 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 command

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 SWITCH(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 SWITCH(config)# ip dhcp

Command

command	description
show ip	Display management ip information

3.7.1.5 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	192.168.2.10
Mode	Global configuration mode
Usage	Use this command to configure the system management ip.
Example	SWITCH(config)# ip address 192.168.2.10 mask 255.255.255.0 SWITCH(config)# ip default-gateway 192.168.2.1

Command	command	description
	show 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

Example

```
SWITCH(config)# location address 11111111
SWITCH(config)# ocation relation switch
SWITCH(config)# location telephone 12345678901
```

Command

command	description
show location	Display system location information

37.1.3ipv6

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

192.168.2.10

Mode

Global configuration mode

Usage

Use this command to Configure the ipv6 address of the switch

Example

```
SWITCH(config)# ipv6 address 2001::5 prefix 64
SWITCH(config)# ipv6 default-gateway 2001::1
```

Command

command	description
show ip	Display management ip information

Parameter	description
Ipv6 dhcp	-

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

```
SWITCH(config)# ipv6 dhcp
```

Command

command	description
show ipv6	Display management ipv6 information

3.11.3 Telnet

Configure the system to telnet

ip telnet

Parameter	description
Ip telnet	-

Parameter	
Default	-
Mode	Global configuration mode
Usage	Use this command Configure the system to telnet
Example	SWITCH(config)# ip telnet SWITCH(config)# no ip telnet

57.1.3Log 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://
	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	SWITCH# copy flash://ram.log tftp://192.168.100.149/8

restart

System restart

reload

Parameter	Parameter	description
	reload	-

Default	-
Mode	Privilege configuration mode.
Usage	Use this command to restart the system
Example	SWITCH# reload

Password

change Password

username web xx password xx

Parameter

Parameter	description
WORD	User name
password	user password

Default admin

Mode Global configuration mode

Usage Use this command to change password

Example

```
SWITCH(config)# username web admin password admin
```

Command

command	description
show username	Display username information

5.1.1.12 System Log

Display system log

show logging buffered

Parameter	Parameter	description
	-	-

Default	-
Mode	Privilege configuration mode.
Usage	Use this command to Display system log

Example

```
SWITCH# 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 192.168.100.131  ACCEPTED
5;Jan 01 2000 00:47:43;%AAA-5-LOGIN: New telnet connection for
user admin, source 192.168.100.149  ACCEPTED
5;Jan 01 2000 00:50:45;%SYSTEM-5-INFO: Logging host is set to
enabled with host 192.168.100.149 (192.168.100.149), 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 192.168.100.149 (192.168.100.149), port 514,
severity emerg, alert, crit, error, warning, notice
SWITCH#
```

show 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

```
SWITCH# show arp
Address                  HWtype  HWaddress           Flags Mask      Iface
192.168.100.149          ether   40:16:7E:B1:EB:6D   C               eth0
```

Command

command	description
show arp	Display arp table

3.7.1.4 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

```
SWITCH(config)#  mac-address static 0001.7A55.E7D2 vlan 1
interfaces GigabitEthernet 0/1
SWITCH(config)# no mac-address static 0001.7A55.E7D2 vlan 1
```

Command

command	description
show mac-address static	Display static mac-address all in switch

37.1.15MAC address drop

When a MAC address is filtered out in a specified vlan, the MAC data can not 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 can not be forwarded through this switch

Example

```
SWITCH(config)#  mac-address static 0001.7A55.E7D5 vlan 1
drop
```

Command

command	description
show mac-address drop	Display drop mac-address all in switch

3.7.11 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

```
SWITCH(config)#  mac-address aging-time 500
```

Command

command	description
show mac-address aging-time	Display mac-address aging-time

show mac-address count

Display the number of MAC addresses in the FDB table.

show mac-address count

paremeter

parameter	description
count	Displays the current number of mac addresses

default

-

mode

Privilege configuration mode.

usage

-

example

```
SWITCH# 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	Displays the static MAC address.
show mac-address drop	Displays the filtered MAC address.
show mac-address dynamic	Displays the dynamic MAC address.
show mac-address interface	Displays the MAC address of the specified port
show mac-address vlan	Displays the MAC address of the specified VLAN

37.1.18display 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	Displays the static MAC address.
show mac-address drop	Displays the filtered MAC address.
show mac-address dynamic	Displays the dynamic MAC address.
show mac-address interface	Displays the MAC address of the specified port
show mac-address vlan	Displays the MAC address of the specified VLAN

Default –

Mode Privilege configuration mode.

Usage Use this command to view all MAC address

Example SWITCH# show mac-address all

3.1.1.1 view the current configuration

view the current configuration

```
show running-config
```

Parameter

Parameter	description
-	-

Default -

Mode Privilege configuration mode.

Usage Use this command to view the current configuration

Example

```
SWITCH# show running-config
```

3.7.1.2 save configuration

Save the current configuration of the switch

write

Parameter	Parameter	description
	write	-

Default	-
Mode	Privilege configuration mode.
Usage	Use this command to Save the current configuration of the switch
Example	SWITCH# write

restore-defaults

Restore the switch configuration to the factory

```
restore-defaults
```

Parameter

Parameter	description
restore-defaults	-

Default -

Mode Privilege configuration mode.

Usage Restore the switch configuration to the default

Example

```
SWITCH# restore-defaults
```

3.7.1.22. Firmware Upgrade

Firmware upgrade

Parameter	Parameter	description
	flash://	Copy from flash: file system. flash://startup-config flash://
	tftp://	Copy from tftp: file system.(tftp://serverip/filename)

Default	-
Mode	Privilege configuration mode.
Usage	Use this command to upgrade system
Example	SWITCH# copy tftp://192.168.100.149/vmlinux.bix flash://image.bin

3.11.20. Firmware backup

Firmware backup

Parameter	Parameter	description
	flash://	Copy from flash: file system. flash://startup-config flash://
	tftp://	Copy from tftp: file system.(tftp://serverip/filename)

Default	-
Mode	Privilege configuration mode.
Usage	Use this command to backup system
Example	SWITCH#copy flash://image.bin tftp://192.168.100.101

3.1.1.24uploading configuration

uploading configuration

Parameter	Parameter	description
	flash://	Copy from flash: file system. flash://startup-config flash://
	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	SWITCH# copy flash://running-config tftp://192.168.100.149/xxx

37.1.23downloading configuration

downloading configuration

Parameter	Parameter	description
	flash://	Copy from flash: file system. flash://startup-config flash://
	tftp://	Copy from tftp: file system.(tftp://serverip/filename)

Default	-
Mode	Privilege configuration mode.
Usage	Use this command inport the current configuration of the system
Example	copy tftp://192.168.100.149/xxx running-config

37.1.26 Memory information

Display Memory information

show memory

Parameter

Parameter	description
-	-

Default –

Mode Privilege configuration mode.

Usage Use this command to Display Memory information

Example

```
SWITCH# 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
SWITCH#
```

37.1.27 CPU information

Display CPU information

show cpu

Parameter

Parameter	description
-	-

Default –

Mode Privilege configuration mode.

Usage Use this command to Display CPU information

Example

```
SWITCH# show cpu

 CPU:      5% used,     95% free
```

37.1.20 flash information

Display flash information

show flash

Parameter

Parameter	description
-	-

Default -

Mode Privilege configuration mode.

Usage Use this command to Display flash information

Example

```
SWITCH# 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
```

37.11.2 Cable detection

Display cable information

show cable-diag

Parameter

Parameter	description
-	-

Default

-

Mode

Privilege configuration mode.

Usage

Use this command to Display cable information

Example

```
SWITCH# 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
```

web-language

Configure switch web-language

```
web-language en
```

Parameter	Parameter	description
	-	-

Default	-

Mode	Global configuration mode

Usage	Use this command to configure the switch web-language

Example	SWITCH(config)# web-language en

Command	command	description
	show web-language	Display the switch web-language

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	192.168.2.10
Mode	Global configuration mode
Usage	Use this command to configure the system management ip.
Example	SWITCH(config)# ip address 192.168.2.10 mask 255.255.255.0 SWITCH(config)# ip default-gateway 192.168.2.1

Command	command	description
	show ip	Display management ip information

3.1.1.62show version

Displays the current vesion of switch

show version

parameter

parameter	description
-	-

Default -

Mode Privilege configuration mode.

Usage View the current version

Example

```
SWITCH Operating System Software
SWITCH system image file (system-firmware.bin), version 17257,
Compiled on Jun 15 2017 - 18:52:19
Copyright@2016 SWITCH Systems, Inc.

SWITCH Version Information
      Hardware Version  : B1
      SN number         : 11000001
      MAC Address       : 00E0.4C00.0000
      Loader Version    : 1.00.002
      Loader Date       : Mar 09 2017 - 11:49:09
      Firmware Version  : v0.0.0.1
      Firmware Date     : Jun 15 2017 - 18:52:19
System Uptime is 8 hours 54 minutes 48 seconds
```

server enable

Enable dhcp server

Ip dhcp server

parameter

parameter	description
-	-

Default

disabled

Mode

global configuration mode.

Usage

Enable dhcp server

Example

```
SWITCH(config)# ip dhcp server
 SWITCH(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,Between addresses is '-

Default

Mode global configuration mode.

Usage set the dhcp server to assign ip to client

Example

```
SWITCH-10T(config)# ip dhcpserver pool 192.168.2.100-
192.168.2.200
```

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

```
SWITCH(config)# ip dhcp relay
SWITCH(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 be DHCP relay information 82 for VLANs enabled

Example

```
SWITCH(config)# dhcp-relay vlan 1-4094
SWITCH(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 be DHCP relay information 82 for VLANs enabled

Example

```
SWITCH(config-if-GigabitEthernet0/1)# ip dhcp relay
SWITCH(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

```
SWITCH(config)# dhcp-relay option remote-id 192.168.2.10
```

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

```
SWITCH(config-if-GigabitEthernet0/5)# dhcp-relay vlan 1 option
circuit-id v5
```

Command

command	description
show dhcp-relay interfaces GigabitEthernet 0/5	Display dhcp relay of cid information

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

```
SWITCH(config)# dhcp-relay option action drop
```

Command

command	description
show dhcp-relay	Display dhcp relay information

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

```
SWITCH(config)# ip dhcp relay ttl remark 50
```

Command

command	description
show ip dhcp relay	Display ip dhcp relay information

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	SWITCH(config)# ip helper-address 192.168.2.15

Command	command	description
	show ip dhcp relay	Display ip dhcp relay information