Edge-corE ®

ECS2020
10/28-Port Gigabit Web Smart
PoE & Non-PoE Switch
Software Release v1.0.2.11

CLI Reference Guide

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ECS2020-10T

Web-smart Gigabit Ethernet Switch
with 8 10/100/1000BASE-T (RJ-45)
and 2 Gigabit SFP Ports

ECS2020-10P

Web-smart Gigabit Ethernet Switch
with 8 10/100/1000BASE-T (RJ-45) 802.3af/at PoE Ports
and 2 Gigabit SFP Ports

ECS2020-28T

Web-smart Gigabit Ethernet Switch
with 24 10/100/1000BASE-T (RJ-45)
and 4 Gigabit SFP Ports

ECS2020-28P

Web-smart Gigabit Ethernet Switch
with 24 10/100/1000BASE-T (RJ-45) 802.3af/at PoE Ports
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About This Guide

This guide includes detailed information on the switch software, including how to operate and use the management functions of the switch. To deploy this switch effectively and ensure trouble-free operation, you should first read the relevant sections in this guide so that you are familiar with all of its software features.

Who Should Read This Guide? This guide is for network administrators who are responsible for operating and maintaining network equipment. The guide assumes a basic working knowledge of LANs (Local Area Networks), the Internet Protocol (IP), and Simple Network Management Protocol (SNMP).

Related Documentation This guide focuses on switch software configuration through the CLI.

For information on how to manage the switch through the Web management interface, see the following guide:

Web Management Guide

Documentation Notice This documentation is provided for general information purposes only. If any product feature details in this documentation conflict with the product datasheet, refer to the datasheet for the latest information.

Contents

1 MTU

In global configuration mode, use this command to set the MTU of the interface.
Mtu <1522-10240>

	Parameter	Description
Parameter	1522-10240	Can be set in the range

Default	The default configuration is 1522.

Mode	Global configuration mode

Usage	Null

Example	Set the mtu value `ECS2020-10P(config)# `**`mtu 10240`**

	Command	Description
Command	**show interfaces gigabitEthernet** *id* **mtu**	View the interface mtu status information.

Example	ECS2020-10P# **show interfaces GigabitEthernet 0/1 mtu**
	     Interface | MTU
	  --------------------+---------------------
	      gi0/1 | 10240

2 Link-Aggregate Port Commands

2.1 Configure relevant commands

2.1.1 link-aggregation load-balance

Configures a traffic balancing algorithm for link-aggregation ports (AGG). Use the **no** option of this command to set the traffic balance back to the default.
link-aggregation load-balance {mac|ip-mac}
no link-aggregation load-balance

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

Default	Null

Mode	Global configuration mode

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

Example	ECS2020-10P(config)# **link-aggregation load-balance ip**

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

2.1.2 link-aggreation

Creates a link-aggregation group.
link-aggregation {_group-number_ **mode { manual | lacp }}**
no link-aggregation {_group-number_}

	Parameter	Description
parameter	_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 group.

Mode	Global configuration mode

Usage	You can configure manual mode and lacp mode. The **no** command removes all interfaces from the aggregation group.

Example	The following example creates a link aggregation group 1 ECS2020-10P(config)#**link-aggregation 1 mode manual**

2.1.3 **Interface link-aggreation**

Sets a physical port as a member port of a link-aggregation group. Use the **no** option of the command to remove the link-aggregation port member from the group.

> **link-aggregation** *group-number* [active| passive|manual]
> **no link-aggregation** {*group-number*}

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

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

Mode	Interface configuration mode

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

Example	ECS2020-10P(config)# **interface GigabitEthernet /1** ECS2020-10P(config-if-GigabitEthernet0/1)# **link-aggregation 1 active**

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

2.2 Display relevant commands

2.2.1 **show link-aggregation**

Display link-aggregation settings.

> **show link-aggregation** [group|*group-number*]

parameter	Parameter	Description
	show link-aggregation group	Show all link aggregation groups
	show link-aggregation group *group-number*	Displays a specific link aggregation group

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： ECS2020-10P# **show link-aggregation group 1**

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

3 Port mirroring commands

3.1 Configure-relevant commands

3.1.1 monitor session

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

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

	Parameter	Description
Parameter	*session_number*	SPAN session number
	source interface GigabitEthernet *port-id*	Specifies the source port. For the interface-id, specify the corresponding interface number, only the physical port, not the SVI.
	destination interface GIgabit Ethernet *port-id*	Specifies the destination port. For interface-id, specify the corresponding interface number, only the physical port, not the SVI.
	both	Monitors input and output traffic.
	rx	Only monitors the input traffic.
	tx	Only monitors the output traffic.

Default	Null

Mode	Global configuration mode

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

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.

```
ECS2020-10P(config)# no monitor session 1
ECS2020-10P(config)# monitor session 1 source interfaces
                     GigabitEthernet 0/2 both
ECS2020-10P(config)# monitor session 1 destination interface
                     GigabitEthernet 0/1
```

	Command	Description
Command	**monitor session**	Creates a SPAN session and specifies 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 ECS2020-10P# **show monitor** Session 1 Configuration Source RX Port : gi0/9 Source TX Port : gi0/9 Destination port : gi0/10 Ingress State: disabled

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

4 Port isolation commands

4.1 Configure-relevant commands

4.1.1 isolate-port

Configures port isolation in interface mode. Use the **no** command to delete the configuration.
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	Interface configuration mode

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

Example	The following is the isolation between port 0/1 and port 0/2. ECS2020-10P(config)# **interface GigabitEthernet 0/1** ECS2020-10P(config-if-GigabitEthernet0/1)# **switchport protected** ECS2020-10P(config)# **interface GigabitEthernet 0/2** ECS2020-10P(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	ECS2020-10P#**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, enables/disables the port input/output rate.
rate-limit {input | output}
no rate-limit {input | output}

parameter	Parameter	Description
	rate-limit {input | output}	Enable the port speed limit function, limiting the input and output speed.
	no rate-limit {input | output}	Disable the port speed limit function, limiting the input and output speed.

Default	Turn off the 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 the port 0/1 uplink rate limit.
	ECS2020-10P(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

Displays the current port rate limit configuration.
show rate-limit
Show rate-limit interfaces {port-id}

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

Default	Null

Mode	Privilege mode

Usage	Displays the upstream rate limit configuration information for all the ports

Example	ECS2020-10P# **show rate-limit interfaces GigabitEthernet 0/1** Interface |Ingress |Egress |kbps |kbps --------------------+--------------------+-------------------- gi0/1 |IGR-UNLIMIT |10000

	Command	Description
Command	**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 interface 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	Description
Parameter	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 command enables storm control for port 0/1. ECS2020-10P(config-if-GigabitEthernet0/1)#**storm-control broadcast kbps 1024** ECS2020-10P(config-if-GigabitEthernet0/1)#**storm-control Unknown-multicas kbps 1024** ECS2020-10P(config-if-GigabitEthernet0/1)#**storm-control Unknown-unicast kbps 1024**

	Command	Description
Command	**show storm-control**	Displays storm control information
	show interface	The storm control information is displayed in the interface attributes

6.2 Display-relevant commands

6.2.1 Show storm-control

show storm-control

<table>
<tr><td rowspan="3">Command</td><td>Command</td><td>Description</td></tr>
<tr><td>**show storm-control**</td><td>Display storm control information</td></tr>
<tr><td>**show interface**</td><td>The storm control information is displayed in the interface attributes</td></tr>
</table>

Default	Null

Mode	Privilege mode

Usage	View storm control configuration information

<table>
<tr><td rowspan="14">Example</td></tr>
</table>

```
ECS2020-10P# 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 MAC address limit for the port. The **no** form of the command disables 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 the limit is reached.

Default	The port security function on the switch is disabled by default.

Mode	Interface configuration mode

Usage	Enable port security. When the port has learned MACs up to the limit number, packets are then discarded.

Example	The following example configures port gig0 / 1 with the maximum MAC learning number of 200. Packets with MACs over the limit are discarded. ECS2020-10P(config-if-GigabitEthernet0/1)# **port-security address-limit 200 action discard**

	Command	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	Description
Parameter	**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: ECS2020-10P# **show port-security interfaces GigabitEthernet** 0/1 Port | Security | CurrentAddr | Action ----------+------------------+----------------+------------------ gi0/1 | Enabled (200) | 13 | Discard

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

8 NTP/SNTP COMMANDS

8.1 NTP Configure-relevant commands

8.1.1 server

Configure the NTP/SNTP server IP address.

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

	Parameter	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	ECS2020-10P(config)# **ntp server 192.168.100.150** ECS2020-10P(config)# **sntp server 192.168.100.159**

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

8.1.2 show ntp/sntp status

Display the NTP/SNTP function status, server address, and 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, and port number.

Example	Display NTP configuration information: ECS2020-10P# **show ntp** NTP is Enabled NTP Server address: 192.168.100.150 NTP Server port: 123 Display SNTP configuration information: ECS2020-10P# **show sntp** SNTP is Enabled SNTP Server address: 192.168.100.159 SNTP Server port: 123

9 EEE

Enable the EEE function and the switch will automatically turn off part of the idle circuit, effectively reducing power consumption and saving energy.

eee
eee interfaces GigabitEthernet {port-id}

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

Default	Turn on the EEE function

Mode	Global configuration mode

Usage	Effectively reduces the switch power consumption, saves energy.

Example	Turn on all port EEE functions: ECS2020-10P(config)# **eee** Open the EEE function for the specified port: ECS2020-10P(config)# **eee interfaces GigabitEthernet** 0/1

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

10 DDOS PROTECTION

10.1 Configuration ddos protection

10.1.1 Turn on DDOS protection

Enable the DDOS protection function to defend against DDOS attacks.

Dos{[land-deny | smurf-deny | nullscan-deny | xma-deny | synfin-deny | syn-sportl1024-deny | pod-deny**]}**

<table>
<tr><td rowspan="8">Parameter</td><td>Parameter</td><td>Description</td></tr>
<tr><td>land-deny</td><td>Source IP equals the destination IP</td></tr>
<tr><td>smurf-deny</td><td>Smurf-attack messages</td></tr>
<tr><td>nullscan-deny</td><td>Null scan attacks</td></tr>
<tr><td>xma-deny</td><td>Xmascan:sequence number is zero and the FIN, URG and PSH bits are set</td></tr>
<tr><td>synfin-deny</td><td>SYN and FIN bits set in the packet</td></tr>
<tr><td>syn-sportl1024-deny</td><td>SYN packets with port less than 1024</td></tr>
<tr><td>pod-deny</td><td>Ping of death attacks</td></tr>
</table>

Default	Turn off the DDOS protection function

Mode	Global configuration mode

Usage	Prevent DDOS attacks.

Example	Turn on land-deny attack protection: ECS2020-10P(config)# **dos land-deny**

10.1.2 **Turn off DDOS protection**

no dos {attack-name}

	Command	description
Command	**no dos** {attack-name}	Turn off a specific 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: ECS2020-10P(config)# **no dos land-deny**

10.2   show DDOS protection

View the configuration information for DOS protection.

Show {dos**}**

	Parameter	Description
Parameter	**Show dos**	View the configuration information for DOS protection

Default	Null

Mode	privilege mode

Usage	View the DDOS protection.

	View the configuration information for DOS protection:
Example	ECS2020-10P# **show dos**

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

11 CPU Guard

11.1 Configuration CPU Guard

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

cpu-protect {[**cpu**]}{**bandwidth**}pps_vaule
cpu-protect {[**sub-interface**]}{[Message_type]}**pps** pps_value

	Parameter	Description
Parameter	**cpu bandwidth**	Set cpu bandwidth (pps)
	Sub_interface	Set the type of cpu protected packets
	cpu bandwidth pps_value	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_value	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	Configures each type of packet bandwidth to inhibit a high rate of attack packets in the network.

Example	Set the total bandwidth of the cpu: ECS2020-10P(config)# **cpu-protect cpu bandwidth 4000** Set the bandwidth of manage packets: ECS2020-10P(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: ECS2020-10P# **show cpu-protect** View the configuration information for CPU bandwidth: ECS2020-10P# **show cpu-protect cpu** View the bandwidth of each type of packet: ECS2020-10P# **show cpu-protect sub-interface manage**

12 Dual Configuration

12.1 Backup the configuration file

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

	Parameter	Description
	running-config	Backup the current configuration file to backup-config
Parameter	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: ECS2020-10P# **copy running-config backup-config** Backup the startup-config file: ECS2020-10P# **copy startup-config backup-config**

12.2 Restore Configuration

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

	Parameter	Description
	running-config	restore the current configuration file from backup-config
Parameter	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: ECS2020-10P# **copy backup-config running-config** Restore the startup-config file: ECS2020-10P# **copy backup-config startup-config**

13 RMON

13.1 rmon event

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

<table>
<tr><td rowspan="6">Parameter</td><td>Parameter</td><td>Description</td></tr>
<tr><td><1-65535></td><td>Specify event index to create or modify</td></tr>
<tr><td>log</td><td>Specify to show syslog</td></tr>
<tr><td>trap COMMUNITY</td><td>Specify SNMP community to show SNMP trap</td></tr>
<tr><td>description DESCRIPTION</td><td>Specify description of event</td></tr>
<tr><td>owner NAME</td><td>Specify owner of event</td></tr>
</table>

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 an RMON event entry with log and trap action and modify the action to log only. ECS2020-10P(config)# **rmon event 1 log trap public description test owner admin** ECS2020-10P# **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 ECS2020-10P(config)# **rmon event 1 log description test owner admin** ECS2020-10P# **show rmon event 1** Rmon Event Index 1 Rmon Event Type : Log Rmon Event Community : Rmon Event Description : test Rmon Event Last Sent : Rmon Event Owner : admin

13.2   rmon alarm

rmon   alarm<1-65535>**interface**   {port-id}**{**[broadcast-pkts|collision|crc-align-errors|drop-events|fragments|jabbers |multicast-pkts|octets|oversize-pkts|pkts|pkts1024to1518octets|pkts128to255octets|pkts256to511octets| pkts512to1023octets|ptks64octets|pkts65to127octets|undersize-pkts]**}**<1-2147483647>{[absolute|delta]}**ring** <0-2147483647><1-65535>f**alling**<0-2147483647><1-65535>**startup**{[falling|rising|rising-falling]}[owner   Name] **no rmon alarm**<1-65535>[owner NAME]

	Parameter	Description
Param eter	<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 values.
	<0-2147483647>	Specify a number which the alarm trigger rising event.
	<1-65535>	Specify event index when the rising threshold exceeded.
	<0-2147483647>	Specify a number which the alarm trigger falling event.
	<1-65535>	Specify event index when the falling threshold exceeded.
	falling|rising|rising-falling	Specify a 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 an RMON alarm entry. Before adding an alarm entry, at least one event entry must be added. Use the **no** form of this command to delete an entry. You can verity settings by the **show rmon alarm** command.

E xam p le	The example shows how to add an RMON alarm entry that samples interface 1 packets delta count every 300 seconds. Trigger event index 1 if over the rising threshold 10000, trigger Event index 2 if lower than the falling threshlod. ECS2020-10P(config)# **rmon event 1 log** ECS2020-10P(config)# **rmon event 2 log** ECS2020-10P(config)# **rmon alarm 1 interface GigabitEthernet 0/1 pkts 300 delta rising 1000 1 falling 100 1 startup rising-falling owner admin** ECS2020-10P# **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 Rmon Alarm Type : Rising or Falling

	Rmon Alarm Rising Threshold : 1000
	Rmon Alarm Rising Event 1
	Rmon Alarm Falling Threshold 100
	Rmon Alarm Falling Event 1
	Rmon Alarm Owner : admin
Example	ECS2020-10P(config)# **rmon event 1 log trap public description test owner admin** ECS2020-10P# **show rmon event 1** Rmon Event Index 1 Rmon Event Type : Log and Trap Rmon Event Community : public Rmon Event Description : test Rmon Event Last Sent :

13.3   rmon history

rmon history <1-65535> **interface** {port-id}[buckets<1-50>][interval<1-3600>][owner NAME]
no rmon history <1-65535>

	Parameter	Description
Parameter	<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 the 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 an entry. You can verify settings by the **show rmon history** command.

Example	The example shows how to add an RMON history entry that monitors interface gig0/1 every 60 seconds and then modify it to monitor every 30 seconds. ECS2020-10P(config)# **rmon history 1 interface GigabitEthernet 0/1** **interval 60 owner admin** ECS2020-10P# **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 ECS2020-10P(config)# **rmon history 1 interface GigabitEthernet 0/1** **interval 30 owner admin** ECS2020-10P# **show rmon history 1** Rmon History Index 1

13.4　　clear 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 etherStat Statistics recorded on an interface. You can verify results by the **show rmon interface statistics** command.

Example	The example shows how to clear RMON etherStat Statistics on interface gig0/1. ECS2020-10P# **clear rmon interfaces GigabitEthernet 0/1 statistics** ECS2020-10P# **show rmon interfaces GigabitEthernet 0/1 statistics** ==== Port gi0/1 ============================ etherStatsDropEvents　　　　0 etherStatsOctets　　　　　0 etherStatsPkts　　　　　0 etherStatsBroadcastPkts　　　0 　etherStatsMulticastPkts　　　0 etherStatsCRCAlignErrors　　　0 etherStatsUnderSizePkts　　　0 etherStatsOverSizePkts　　　0 etherStatsFragments　　　0 etherStatsJabbers　　　0 etherStatsCollisions　　　0 etherStatsPkts64Octets　　　0 etherStatsPkts65to127Octets　　0 etherStatsPkts128to255Octets　　0 etherStatsPkts256to511Octets　　0 etherStatsPkts512to1023Octets　　0 etherStatsPkts1024to1518Octets　　0

13.5   show rmon interface statistics

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

Parameter

Parameter	Description
port-id	Specify the port to show

Default   Null

Mode   Privilege mode

Usage

Use the **show rmon interface statistics** command to show RMON etherStat Statistics of an interface.

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

Example

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

ECS2020-10P# show rmon interfaces GigabitEthernet 0/1 statistics
```
==== Port gi0/1 ============================
etherStatsDropEvents              0
etherStatsOctets            : 12313
etherStatsPkts              120
etherStatsBroadcastPkts            32
etherStatsMulticastPkts           85
etherStatsCRCAlignErrors            0
etherStatsUnderSizePkts             0
etherStatsOverSizePkts              0
etherStatsFragments              0
etherStatsJabbers            0
etherStatsCollisions            0
etherStatsPkts64Octets            11
etherStatsPkts65to127Octets          86
etherStatsPkts128to255Octets          23
etherStatsPkts256to511Octets          0
etherStatsPkts512to1023Octets          0
etherStatsPkts1024to1518Octets        0
```

13.6   show rmon event

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

Parameter	Description
<1-65535>	Specify event index to show
all	Show all existing events

Default   Null

Mode	Privilege mode

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

Example	The example shows how to show RMON event entry. ECS2020-10P(config)# **rmon event 1 log trap public description test owner admin** ECS2020-10P(config)# **exit** //Returns the privilege mode ECS2020-10P# **show rmon event 1** Rmon Event Index 1 Rmon Event Type : Log and Trap Rmon Event Community : public Rmon Event Description : test Rmon Event Last Sent : Rmon Event Owner : admin

13.7   show rmon alarm

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

Parameter	Parameter	Description
	<1-65535>	Specify the alarm index to show
	all	Show all existing alarms

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 an RMON alarm entry. ECS2020-10P(config)# **rmon alarm 1 interface GigabitEthernet 0/1** **broadcast-pkts 300 delta rising 10000 1 falling 100 1 startup rising-falling owner** **admin** ECS2020-10P(config)# **exit** //Returns the privilege mode ECS2020-10P# **show rmon alarm 1** Rmon Alarm Index 1 Rmon Alarm Sample Interval 300 Rmon Alarm Sample Interface : gi0/1 Rmon Alarm Sample Variable : BroadcastPkts Rmon Alarm Sample Type : delta Rmon Alarm Type : Rising or Falling Rmon Alarm Rising Threshold : 10000 Rmon Alarm Rising Event 1 Rmon Alarm Falling Threshold 100 Rmon Alarm Falling Event 1 Rmon Alarm Owner : admin

13.8 show rmon history

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

Parameter	Parameter	Description
	<1-65535>	Specify history index to show
	all	Show all existing 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 an RMON history entry. ECS2020-10P(config)# **rmon history 1 interface GigabitEthernet 0/1 interval 30 owner admin** ECS2020-10P(config)# **exit** ECS2020-10P# **show rmon history** **1** Rmon History Index 1 Rmon Collection Interface: gi0/1 Rmon History Bucket 50 Rmon history Interval 30 Rmon History Owner : admin

14 ARP Inspection

14.1 arp inspection

arp-inspection
no arp-inspection

Parameter	Parameter	Description
	-	-

Default	ARP inspection is disabled

Mode	Global Configuration

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

Example	The example shows how to enable Dynamic Arp Inspection on VLAN 1. You can verify settings by the **show arp-inspection** command. **ECS2020-10P(config)#arp-inspection** **ECS2020-10P# 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 an unlimited rate of ARP packets

Mode	Interface configuration mode

Usage	Use the **arp-inspection rate-limit** command to set rate limitation on interface.The switch drops ARP packets after it receives more than the 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 a rate limit to 30 pps on interface gig0/1. You can verify settings by the following **show arp-inspection interface** command. ECS2020-10P(config)# **interface GigabitEthernet 0/1** ECS2020-10P(config-if-GigabitEthernet0/1)# **arp-inspection rate-limit 30** ECS2020-10P(config-if-GigabitEthernet0/1)# **end** //Returns the privilege mode ECS2020-10P# **show arp-inspection interfaces GigabitEthernet 0/1** Interfaces | Trust State | Rate (pps) | SMAC Check | DMAC Check | IP Check/Allow Zero | -------------+----------------+--------------+------------------|-----------------+------------------------+ gi0/1 | Untrusted | 30 | disabled | disabled | disabled/disabled

14.3   arp inspection trust

arp-inspection trust
no arp-inspection trust

Parameter	Parameter	Description
	-	-

Default	ARP inspection trust is disabled

Mode	Interface configuration mode

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

| Example | The example shows how to set interface gig0/1 to trust. You can verify settings by the **show arp-inspection interface** command.
ECS2020-10P(config)# **interface GigabitEthernet 0/1**
ECS2020-10P(config-if-GigabitEthernet0/1)# **arp-inspection trust**
ECS2020-10P(config-if-GigabitEthernet0/1)# **do show arp-inspection interfaces GigabitEthernet 0/1**
Interfaces \| Trust State \| Rate (pps) \| SMAC Check \| DMAC Check \| IP Check/Allow Zero \|
-------------+----------------+--------------+------------------\|-----------------+------------------------+
  gi0/1   \| Trusted   \| None   \| disabled   \| disabled   \| disabled/disabled |

14.4 arp inspection validate

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

	Parameter	Description
Parameter	src-mac	The "src-mac" drops ARP requests and reply packets when the arp-sender-mac and ethernet-source-mac do not match.
	dst-mac	The "dst-mac" drops ARP reply packets when the arp-target-mac and ethernet-dest-mac do not match.
	ip	The "ip" drops ARP request and reply packets that the sender-ip is invalid such as broadcast, multicast, all zero IP addresses, and drops ARP reply packets when the target-ip is invalid.
	allow-zeros	The "allow-zeros" means all zero IP address will not be dropped.

Default	Default is all validation disabled

Mode	Interface configuration mode

Usage	Use the **arp-inspection validate** command to enable the validate function on an 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 **show ip arp inspection interface** command ECS2020-10P(config)# **interface GigabitEthernet 0/1** ECS2020-10P(config-if-GigabitEthernet0/1)# **arp-inspection validate src-mac** ECS2020-10P(config-if-GigabitEthernet0/1)# **arp-inspection validate dst-mac** ECS2020-10P(config-if-GigabitEthernet0/1)# **arp-inspection validate ip allow-zeros** ECS2020-10P(config-if-GigabitEthernet0/1)# **do show arp-inspection interfaces GigabitEthernet 0/1** Interfaces | Trust State | Rate (pps) | SMAC Check | DMAC Check | IP Check/Allow Zero | -------------+---------------+--------------+------------------|------------------+-------------------------+ gi0/1 | Untrusted | None | enabled | enabled | enabled/enabled

14.5 clear arp inspection statistics

clear arp-inspection interfaces {port-id**} statistics**

Parameter	Parameter	Description
	port-id	Specifies ports to clear statistics

Default	Null

Mode	Privilege mode

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

Example	The example shows how to clear statistics on interiface gig0/1t. You can verify settings by the **show arp-inspection interface statistics** command. ECS2020-10P# **clear arp-inspection interfaces GigabitEthernet 0/1 statistics** ECS2020-10P# **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

14.6   show arp inspection

show arp-inspection interfaces

Parameter	Parameter	Description
	-	-

Default	Null

Mode	Privilege mode

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

Example	The example shows how to show settings of ARP inspection. ECS2020-10P# **show arp-inspection** Dynamic ARP Inspection : enabled Enable on Vlans : 1-4094

14.7   show arp inspection interface

show arp-inspection interfaces {port-id}
show arp-inspection interfaces {port-id}statistics

Parameter	Parameter	Description
	Port-id	Specifies ports to show statistics

Default Null

Mode Privilege mode

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

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

```
 ECS2020-10P# 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
ECS2020-10P# show arp-inspection interfaces GigabitEthernet 0/1 statistics
Port| Forward |Source MAC Failures|Dest MAC Failures|SIP Validation Failures|
DIP Validation Failures|IP-MAC Mismatch Failures
----+-----------+------------------------+--------------------+-----------------------+--------------
---------------------------+---------------------------------
 gi0/1|    0    |         0          |         0      |         0        |
         0            |         0
```

15 Flow Control Commands

15.1   Flow Control Configuration Commands

15.1.1   flowcontrol

Turn on port flow control
flowcontrol {[on|off]}

	Parameter	Description
parameter	**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	ECS2020-10P(config-if-GigabitEthernet0/1)#**flowcontrol on**

	Command	Description
Command	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 settings to a default values.

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 configuration of VLANs

Example

ECS2020-10P(config)# vlan 3
ECS2020-10P(config-vlan)# description nihao

Command		
	Command	Description
	show vlan	Displays the VLAN member ports and other information

16.1.2   **vlan**

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

vlan *vlan-id*
no vlan *vlan-id*

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

Default	VLAN 1

Mode	Global configuration mode

Usage	If the input **vlan** *vlan-id* does not exist, the system creates the VLAN and enters the vlan. When the VLAN exists, the system enters the VLAN.

Example	ECS2020-10P(config)# vlan 5 ECS2020-10P(config)# no vlan 5

	Command	Description
Command	**show vlan**	Displays the 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 an access/trunk/hybrid port. Use the switch mode access option to revert the configuration of the interface to default values.

switch mode [access | trunk | hybrid]

	Parameter	Description
Parameter	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 to** specify which VLAN is the member of the interface. If a switch port mode is trunk or hybrid, this port can be a member of multiple VLANs. The port VLAN that the interface can belong to is determined by the VLAN list of the interface. Trunk ports or hybrid ports are members of all VLANs in the list。 Use the **switch {trunk	hybrid }** command to define the VLAN list of interfaces.

Example	Configure the port1 mode to trunk:
	ECS2020-10P(config)# interface GigabitEthernet 0/1
	ECS2020-10P(config-if-GigabitEthernet0/1)# switch mode trunk

Command	Command	Description
	show vlan	Displays the VLAN configuration.

16.1.4　Management VLAN

Use the command **management-vlan vlan** *vlan-id* to enter configuration mode .Use the **no** option

of the command to remove the created management-vlan.

management-vlan vlan *vlan-id*
no management-vlan

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

Default	management-vlan vlan 1

Mode	Global configuration mode

Usage	If the input VLAN ID does not exist, the system creates the VLAN and enters the VLAN. If the VLAN exists, the system enters the VLAN.

Example	ECS2020-ECS2020-10P(config)# management-vlan vlan 4
	ECS2020-10P(config)# no management-vlan

Command	Command	Description
	show vlan	Displays the VLAN configuration.

16.2   Configure different types of VLAN

16.2.1   Access VLAN

In port mode, configure the access attributes 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 a VLAN ID that is not created, the device will indicate that the VLAN does not exist. If the input is an already existing VLAN ID, the VLAN member port is increased.

Example	Configure port 1 to belong to VLAN 2: ECS2020-10P(config)# interface GigabitEthernet 0/1 ECS2020-10P(config-if-GigabitEthernet0/1)# switch access vlan 2

Command	Command	Description
	show vlan	Displays the VLAN configuration.

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 VLAN permission list for this trunk port. The parameter vlan-list can be either a VLAN or a series of VLANs, beginning with a small VLAN ID and ending with a large VLAN ID, with the (-) symbol 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 VLANs; "add" indicates that the specified VLAN list is added to the allowed VLAN list; "remove" indicates that the specified VLAN list is removed from the allowed 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 a VLAN ID that is not created, the device will indicate that the VLAN does not exist. If the input is an already existing VLAN ID, the VLAN member port is increased.

Example
Configure port 1 belong to vlan 3:
ECS2020-10P(config)# interface GigabitEthernet 0/1
ECS2020-10P(config-if-GigabitEthernet0/1)# switch trunk allowed vlan 3

Command

Command	Description
show vlan	Displays the VLAN configuration.

16.2.3   Trunk native VLAN

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

switch trunk native vlan *vlan-id*
no switch trunk native vlan

Parameter	Parameter	Description
	native vlan	Trunk port packet received: if the packet has a VLAN tag, then put this packet in the corresponding VLAN; if the packet has no VLAN tag, then the packet is forwarded to the port of the native VLAN.

Default   Default VLAN is VLAN 1

Mode   Interface configuration mode

Usage   To configure the trunk native VLAN of a port, the port must be configured as a trunk.

Example   Configring gig0/1 to belong to native
vlan3 ECS2020-10P(config)# interface
gig 0/1
ECS2020-10P(config-if-GigabitEthernet0/1)# switch trunk native vlan 3

Command	Command	Description
	show vlan	Displays the VLAN configuration.

16.2.4   Hybrid VLAN

Configures a port as a VLAN hybrid 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 | ECS2020-10P(config)# interface GigabitEthernet 0/1
ECS2020-10P(config-if-GigabitEthernet0/1)# switch hybrid vlan 3 untagged |

Command	Command	Description
	show vlan	Displays the VLAN configuration.

16.2.5 Hybrid native VLAN

Specify a native VLAN as 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, the port must be configured as hybrid. |

| Example | ECS2020-10P(config)# interface GigabitEthernet 0/1
ECS2020-10P(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	Description
Parameter	*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	ECS2020-10P# show vlan 3
	VID | VLAN Name | Untagged Ports | Tagged Ports | Type
	 -------+------------------+-----------------------------+-----------
	          ------------------+---------
	  3 | VLAN0003 | gi0/1 |
	      --- | Static

	Command	Description
Command	**show vlan** *vlan-id*	Displays the VLAN configuration.

17 Voice VLAN

17.1 Configure commands

17.1.1 voice VLAN

Create a VLAN first and then specify the VLAN when creating a Voice VLAN for voice traffic using the 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	Description
Parameter	voice-vlan vlan id	The identifier of the voice-vlan/ Note that the voice vlan ID can not be same as a surveillance vlan ID

Default
Null

Mode   Global configuration mode

Usage   Use **show voice-vlan** to view the voice-vlan configuration.

Example
ECS2020-10P(config)# voice-vlan vlan 2
ECS2020-10P(config)# voice-vlan

	Command	Description
Command	**show voice-vlan**	View the voilce VLAN global configuration 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 or manual for a switch port . Use the voice-vlan mode autounTag option to revert the schema of the interface to default values. Note that ports can not configure a voice-vlan on an access port.

Voice-vlan mode [autoTag | autounTag | manual]

	Parameter	Description
Parameter	autoTag	Auto tagging is voice VLAN default mode
	autounTag	Voice VLAN untagged mode.
	manual	Manual tagged voice vlan mode

Default	The voice-vlan default mode is autoTag

Mode	Interface configuration mode

Usage	If the port voice VLAN mode is set to autoTag, the port is set to add tags of the Voice VLAN. If the mode is autountag, the port will not add tags to any traffic. Note: when setting the voice VLAN mode to manual, the port must be forwarded to the voice VLAN in advance

Example	Configure port 1 to join voice VLAN as autotag ECS2020-10P(config)# interface GigabitEthernet 0/1 ECS2020-10P(config-if-GigabitEthernet0/1)# voice-vlan mode autoTag

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

17.1.3   **voice VLAN OUI**

In global configuration mode, set the OUI-table and note that the MAC address cannot be either multicast or broadcast addresses and further the mask used cannot have a zero before an F.

voice-vlan oui-table A:B:C:D:E:F mask A:B:C:D:E:F

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

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

Mode	Global configuration mode

Usage	In global settings, the 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 ECS2020-10P(config)# voice-vlan oui-table 02:00:12:32:56:89 mask FF:FF:FF:FF:FF:00

	Command	Description
Command	**show voice-vlan interfaces GigabitEthernet 0/1**	Displays the configuration of the voice-vlan oui-table.

17.1.4   voice VLAN aging-time and cos

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

voice-vlan aging-time X(1-65535)
voice-vlan cos X(0-7) remark

Parameter	Parameter	Description
	Aging-time	Specifies the aging time of the port in voice VLAN
	cos	Specifies 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 the voice VLAN aging-time to 30 minutes and cos value to 7. ECS2020-10P(config)# voice-vlan aging-time 30 ECS2020-10P(config)# voice-vlan cos 7 remark

	Command	Description
Command	**show voice-vlan**	Displays the voice-vlan aging-time and cos configuration.

17.2   Display relevant commands

17.2.1   show voice VLAN

Displays the VLAN member ports and other information.

Show vlan id
Show voice-vlan device

Parameter	Parameter	Description
	Vlan-id	The number of voice VLAN IDs
	Voice-vlan device	The ports in a 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 keys. To return to global configuration mode, enter the exit command

Example	

```
ECS2020-10P# show voice-vlan device
Interface  |    MAC Address    |         start-time
-------------+-------------------+--------------------------
     gi0/1      |    00E0.BB00.0000 |    2000-01-01 00:24:03
ECS2020-10P# show vlan 2
VID  |     VLAN Name     |     Untagged Ports         |
          Tagged Ports          |  Type
  -------+-----------------+----------------------------+------
  ----------------------+---------
  2 |         VLAN0002 |                             --- |
                                gi0/1 | Static
```

	Command	Description
Command	**show vlan** *vlan-id*	Display the voice vlan configuration.
	Show voice-vlan device	Display the voice-vlan member ports.

18 Surveillance VLAN

18.1   Configure commands

18.1.1   surveillance VLAN

First create a VLAN, and when creating a surveillance VLAN specify the VLAN created to enable a surveillance VLAN ID. Use the "no" command to remove a surveillance VLAN. Surveillance VLANs are disabled by default.

surveillance-vlan vlan id surveillance-vlan
no surveillance-vlan

Parameter	Parameter	Description
	surveillance-vlan vlan id	The number of surveillance-vlan id, note that 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	ECS2020-10P(config)# surveillance-vlan vlan 3 ECS2020-10P(config)# surveillance-vlan

Command	Command	Description
	show surveillance-vlan	View global configuration of a surveillance VLAN

18.1.2   surveillance-vlan mode

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

surveillance-vlan mode [auto| manual]

Parameter	Parameter	Description
	auto	Sets the surveillance VLAN mode for a port to autoTag
	manual	Sets the surveillance VLAN mode for a port to 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 a member of the surveillance VLAN, Note when adding the surveillance VLAN mode to manually join a port, you need to forward the port to the surveillance VLAN in advance.

Example	Configure port 1 to join surveillance VLAN as auto ECS2020-10P(config)# interface GigabitEthernet 0/1 ECS2020-10P(config-if-GigabitEthernet0/1)# surveillance-vlan mode auto

	Command	Description
Command	**show surveillance-vlan interfaces GigabitEthernet 0/1**	View the configuration of a voice VLAN

18.1.3   surveillance VLAN OUI

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

surveillance-vlan oui-table A:B:C:D:E:F mask   A:B:C:D:E:F

	Parameter	Description
Parameter	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, a oui-table adds the port to a surveillance VLAN when the port's source MAC address matches the address in the oui list.

Example	Configure voice VLAN OUI ECS2020-10P(config)# surveillance-vlan oui-table 04:10:12:32:56:89 mask FF:FF:FF:FF:FF:00 componentType video_encoder

Command		
Command	**Command**	**Description**
	Show surveillance-vlan	Displays the configuration of the surveillance-vlan oui-table.

18.1.4   surveillance VLAN aging-time and cos

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

surveillance-vlan aging-time X(1-65535) ECS2020-
surveillance--vlan cos X(0-7) remark

Parameter		
Parameter	**Parameter**	**Description**
	Aging-time	Specifies the aging time of the port in a surveillance VLAN
	cos	Specifies 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 a voice VLAN.

Example	Configure the surveillance VLAN aging-time to 20 minutes and cos value as 7. ECS2020-10P(config)# surveillance-vlan aging-time 20 ECS2020-10P(config)# surveillance-vlan cos 7 remark

Command		
	Command	**Description**
Command	**show surveillance-vlan**	Displays the configuration of the surveillance- vlan aging-time and cos.

18.2   Display relevant commands

18.2.1   show surveillance VLAN

Displays 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	N/A

Mode	Privileged mode

Usage	To return to privileged mode, enter the end command, or type the Ctrl+Z combination keys. To return to global configuration mode, enter the exit command.

Example

```
ECS2020-10P# 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
ECS2020-10P# show vlan 3
VID   |      VLAN Name    |        Untagged Ports        |
            Tagged Ports       |  Type
      -------+----------------+----------------------------+------
         ----------------------+---------
       3 |       VLAN0003 |                         --- |
                              gi0/1 | Static
```

Command	Command	Description
	show vlan *vlan-id*	Displays the surveillance- vlan configuration.
	Show surveillance-vlan device	Displays the port members of a surveillance-vlan.

19 ONVIF

19.1 Configure commands

19.1.1 ONVIF enable

In global configuration mode, enables ONVIF and activates IPC and NVR discovery.

surveillance-vlan-v2

	Parameter	Description
Parameter	**surveillance-vlan-v2**	Activate NVR and IPC auto discovery

Default	Disabled

Mode	Global configuration mode

Usage	Use this command to configure and enable NVR and IPC auto discovery

Example	`ECS2020-28P(config)# surveillance-vlan-v2` `ECS2020-28P(config)# no surveillance-vlan-v2`

	Command	Description
Command	**show surveillance-vlan-v2 onvif discover-port**	Display ONVIF information

19.1.2 ONVIF vlan

surveillance-vlan-v2 vlan

	Parameter	Description
Parameter	**vlan id**	<2-4094> Specifies the Surveillance VLAN v2 VLAN ID

Default	

	Mode	Global configuration mode

	Usage	Use this command to configure the surveillance VLAN ID

	Example	ECS2020-28P(config)# surveillance-vlan-v2 vlan 2

Command	Command	Description
	show surveillance-vlan	Display ONVIF VLAN information

19.1.3   ONVIF vlan priority

surveillance-vlan-v2 cos

Parameter	Parameter	Description
	cos	<0-7> Specify the Surveillance VLAN v2 Class Of Service

Default	

Mode	Global configuration mode

Usage	Use this command to configure the surveillance VLAN priority

Example	ECS2020-28P(config)# surveillance-vlan-v2 cos 6

Command	Command	Description
	show surveillance-vlan	Display ONVIF VLAN priority

19.1.4　ONVIF discover port

surveillance-vlan-v2 onvif_discover_port

Parameter	Parameter	Description
	port	range <80,443,554,1025-65535>, default value is 554

Default	554

Mode	Global configuration mode

Usage	Use this command to configure the NVR and IPC discovery port.

Example	ECS2020-28P(config)# surveillance-vlan-v2 onvif_discover_port 37777

	Command	Description
Command	**show surveillance-vlan-v2 onvif discover-port**	Display ONVIF discover port

19.1.5　ONVIF trap

surveillance-vlan-v2 trap enable

Parameter	Parameter	Description
	enable	Enable SNMP trap

Default	Enabled

Mode	Global configuration mode

Usage	Use this command to send a trap message to the SNMP server if IPC drops line.

Example	ECS2020-28P(config)# surveillance-vlan-v2 trap enable

Command	Command	Description
	show surveillance-vlan	Display ONVIF trap state

20 DHCP-snooping

20.1 Configure commands

20.1.1 DHCP-Snooping

When enabling 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 DHCP service messages.

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

ECS2020-10P(config)#dhcp-snooping

Command

Command	Description
show dhcp-snooping	Displays the current configuration

20.1.2 DHCP-Snooping trust

Open the DHCP-Snooping trust function, if a port is an untrusted port, then the port DHCP service messages received will be discarded if a port is trusted then it can normal forward DHCP service messages.

dhcp-snooping trust
no dhcp-snooping trust

	Parameter	Description
Parameter	dhcp-snooping trust	Configure the port as dhcp-cnooping trust
	no dhcp-snooping trust	Configure the port as dhcp-cnooping untrusted.

Default	untrusted or no dhcp-snooping trust

Mode	Interface configuration mode

Usage	In port mode, when the port is opened, the port can forward a service message. If this port is an untrusted port, then the port cannot forward the service message.

Example	ECS2020-10P(config-if-GigabitEthernet0/2)# dhcp-snooping trust

	Command	Description
Command	**show dhcp-snooping**	Displays the DHCP snooping configuration.

20.1.3 dhcp snooping for vlan

Enables DHCP snooping for a VLAN.

	Parameter	Description
Parameter	dhcp snooping vlan	Enable dhcp snooping on a VLAN

Default	Enable

Mode	global configuration mode

| Usage | Enables DHCP snooping on a VLAN. |

| Example | ECS2020-10P(config)# dhcp-snooping vlan 1-4094 |

Command

Command	Description
show dhcp-snooping	Displays the DHCP snooping configuration.

20.1.4   **enable dhcp snooping option 82**

Enable   DHCP snooping information 82

Parameter	Parameter	Description
	dhcp-snooping option	Enable the dhcp snooping option 82.

| Default | Disabled |

| Mode | interface configuration mode |

| Usage | Enables DHCP snooping option 82. |

| Example | ECS2020-10P(config-if-GigabitEthernet0/1)# dhcp-snooping option |

Command	Command	Description
	show dhcp-snooping	Displays the DHCP snooping configuration.

20.1.5　option 82 of remote-ID

Configure DHCP snooping option 82 of a remote-ID.

Parameter	Parameter	Description
	STRING	ID string (1~63

Default

DUT's mac address

Mode

global configuration mode

Usage

A "remote ID" contains the switch's information of a trusted identifier for a remote high-speed modem.

Example

ECS2020-10P(config)# dhcp-snooping option remote-id 192.168.100.145

Command	Command	Description
	show dhcp-snooping	Displays the DHCP snooping configuration.

20.1.6　option 82 of CID

Configures the DHCP snooping option 82 circuit-ID

Parameter	Parameter	Description
	STRING	ID string (1~63

Default

Null

Mode

interface configuration mode

Usage

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

| | Example | ECS2020-10P(config-if-GigabitEthernet0/1)#   dhcp-snooping option circuit-id 192.168.100.145 |

	Command	Description
Command	**show dhcp-snooping interfaces GigabitEthernet 0/x**	Displays the DHCP snooping interface configuration.

20.1.7   **DHCP snooping policy**

Configures the global DHCP snooping policy.

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

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

| Default | drop |

| Mode | global configuration mode |

| Usage | DHCP snooping option 82 policy |

| Example | ECS2020-10P(config-if-GigabitEthernet0/1)# dhcp-snooping option action drop |

	Command	Description
Command	**show dhcp-snooping interfaces GigabitEthernet 0/x**	Displays the DHCP snooping interface configuration

20.2   Display relevant commands

20.2.1   show DHCP-Snooping

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

show DHCP-Snooping
show DHCP-Snooping interface gigabitEthernet 0/x

	Parameter	Description
Parameter	show dhcp-snooping	Displays the DHCP-Snooping configuration.
	show dhcp-snooping interfacegigabitEthernet 0/x	Displays DHCP-Snooping interface (including aggregate ports 1-8) configuration.

Default	NULL

Mode	Privileged mode

Usage	Used to view the DHCP-snooping configuration.

Example	ECS2020-10P# 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) ECS2020-10P# show dhcp-snooping interfaces GigabitEthernet 0/1 Interfaces | Trust State | Rate (pps) | hwaddr Check | Insert Option82 | ------------+-------------+------------+--------------+-----------------+ gi0/1 | Untrusted | None | disabled | disabled |

Command	Description
show dhcp-snooping	Displays the DHCP-Snooping configuration.
show dhcp-snooping interfacegigabitEthernet 0/x	Displays DHCP-Snooping interface (including aggregate ports 1-8) configuration.

Command

21 Loopback-detection

21.1 Configure commands

21.1.1 Loopback-detection

Configures loop detection, activates the function, and when a loop appears on the network, the loop port is disabled (link-down) or a warning is issued.

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

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

Default	Enabled

Mode	Global configuration mode

Usage	In the global mode, configuration loopback-detection

Example	Configures loopback-detection as enabled, the ctp-interval, the resume-interval , or an snmp-trap ECS2020-10P(config)# loopback-detection enable ECS2020-10P(config)# loopback-detection ctp-interval 1 ECS2020-10P(config)# loopback-detection resume-interval 60 ECS2020-10P(config)# loopback-detection snmp-trap

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

21.2　Display relevant commands

21.2.1　show loop-detection

Use the following command to view the loop detection configuration.

show loopback-detection

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

Default	NULL

Mode	Privileged mode

Usage	In privileged mode, view configuration and status.

Example	Check the loop-detection port configuration and status.
	ECS2020-10P# 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.

22 Spanning-tree

When configuring Spanning Tree, use the web manager for general settings and the CLI commands for both general and detailed settings.

22.1 Configure Commands

22.1.1 spanning-tree enable

Enable spanning-tree function, to avoid network loops, enabling spanning tree function on the switch will block a port on a looped path 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	Disabled

Mode	Global configuration mode

Usage	In the global mode, configuration spanning-tree

Example	Configure the spanning tree to turn on or off. ECS2020-10P(config)# spanning-tree enable ECS2020-10P(config)# no spanning-tree enable

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

22.1.2 spanning-tree mode

Configure spanning-tree mode to one of 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. ECS2020-10P(config)# spanning-tree mode rstp

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

22.1.3 spanning-tree forward-time

Configures the 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	15s

Mode	Global configuration mode

| Usage | Configuring forwarding delay in global mode. |

| Example | Configure the spanning-tree forwarding delay:
ECS2020-10P(config)# spanning-tree forward-time 17 |

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

22.1.4   spanning-tree hello-time

Configures the spanning tree to send BPDU messages to neighboring devices at intervals, that is, the transmission frequency of BPDUs.

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 | Configure the spanning tree BPDU transmission interval:
ECS2020-10P(config)# spanning-tree hello-time 5 |

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

22.1.5   **spanning-tree max-age**

Configure the port BPDU aging time. The timer aging reset is updated upon receipt of a BPDU, when participating in a spanning tree. When a port (root port and port blocking) timer reaches max-age due to no BPDU message being received, the switch will recalculate the topology.

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

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

Default	20s

Mode	Global configuration mode

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

Example	Set the BPDU timeout of the switch to 30 seconds: ECS2020-10P(config)# spanning-tree max-age 30

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

22.1.6   **spanning-tree max-hops**

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

spanning-tree max-hops [1-40]

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

Default	20

Mode	Global configuration mode

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

Example	Set the BPDU maximum hops count to 30 times: ECS2020-10P(config)# spanning-tree max-hops 30

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

22.1.7   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	Uses the dot1D-1998 port path consumption calculation criteria.
	dot1T-2001	Uses the dot1T-2001 port path consumption calculation criteria.

Default	dot1T-2001

Mode	Global configuration mode

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

Example	Configure the port consumption value is calculated as dot1D-1998: ECS2020-10P(config)# spanning-tree pathcost method dot1D-1998

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

22.1.8 spanning-tree priority

The bridge priority setting for spanning-tree, selects one of the highest priority switches as the root bridge.

spanning-tree priority [0-61440]

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

Default	32768

Mode	Global configuration mode

Usage	Sets switch bridge priority in global mode.

Example	Set the switch bridge priority to 4096: ECS2020-10P(config)# spanning-tree priority 4096

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

22.1.9 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)

Parameter		Description
Parameter	spanning-tree mst configure	Enter the MSTP configuration mode Note that "cr" means no arguments
	Instance (1-15) vlan (1-4094)	Configures 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	Sets the MSTP information,if created in the same way as other devices in the region,you should be ensure that the MSTP version, name, and instance mapping relationship of the 2 devices are the same.

Example	Set the switch MSTP instance as 5, the name as nihao, the revision as 33 and configure the instance 5 priority as 4096: ECS2020-10P(config)# spanning-tree mst configuration ECS2020-10P(config-mst)# instance 5 vlan 5 ECS2020-10P(config-mst)# name nihao ECS2020-10P(config-mst)# revision 33 ECS2020-10P(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.

22.1.10　spanning-tree enable

[no] Enable spanning-tree on switch-port

spanning-tree [enable]
no spanning-tree enable

Parameter	Parameter	Description
	enable	Enables the port spanning tree function, the default is all ports opened to using the spanning tree function.

Default	NULL

Mode	Port configuration mode

Usage	Enter the port configuration mode and enable and disable the spanning tree function of the port

Example	Enable and disabled the spanning tree function of GigabitEthernet0/1: ECS2020-10P(config-if-GigabitEthernet0/1)# spanning-tree enable ECS2020-10P(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 of GigabitEthernet0/1.

22.1.11　spanning-tree bpdu

Configures the ports to handle BPDU.

spanning-tree bpdu [filter|guard]

Description	Parameter	Description
	filter	Configures the port to neither receive nor send BPDU messages.
	guard	Do not receive BPDU messages.

Default	NULL

Mode	Port configuration mode

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

Example	Set the BPDU setting of GigabitEthernet0/1 to guard. ECS2020-10P(config-if-GigabitEthernet0/1)# spanning-tree bpdu guard

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

22.1.12 spanning-tree cost

Configure the port external path cost, and the switch sends BPDUs to a downstream switch, which adds to the cast value of the transmission port's cast field of a BPDU.

spanning-tree cost [1-200000000]

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

Default	19

Mode	Port configuration mode

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

Example	Set the cost value of GigabitEthernet0/1 to 2000 ECS2020-10P(config-if-GigabitEthernet0/1)# spanning-tree cost 2000

Command	Command	Description
	show spanning-tree interface gigabitEthernet 0/1	Display the spanning tree status and configuration of GigabitEthernet0/1.

22.1.13 spanning-tree guard

Sets the port protection function

spanning-tree guard [loop|none|root]

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

Default	None
Mode	Port configuration mode
Usage	Enters the port configuration mode and sets the port protection function.
Example	Set the loop guard on GigabitEthernet0/1: ECS2020-10P(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 of GigabitEthernet0/1.

22.1.14   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	Description
Parameter	point-to-point	Sets the link type as point-to-point.
	shared	Sets the link type as 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 sets the spanning-tree link-type.
Example	Set the link type of GigabitEthernet0/1 as shared: ECS2020-10P(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 of GigabitEthernet0/1.

22.1.15   **spanning-tree portfast edgeport**

When a port is directly connected with a PC, and the port is not possible to be part of a loop, the ports do not need to participate in the spanning tree operations. Configured as an edge port the port will linkup directly to the forwarding state and will not experience learn, listen STP states.

spanning-tree portfast [edgeport|network]

	Parameter	Description
Parameter	edgeport	Sets the specified port as an edge port.
	network	Sets the specified port as a network port.

Default	network port

Mode	Port configuration mode

Usage	Enter the port configuration mode and sets the port mode as edgeport.

Example	Set GigabitEthernet0/1 as an edge port: ECS2020-10P(config-if-GigabitEthernet0/1)# spanning-tree portfast edgeport

	Command	Description
Command	**show spanning-tree interface gigabitEthernet 0/1**	Display the spanning tree status and configuration of GigabitEthernet0/1.

22.1.16   **spanning-tree priority**

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

Default	128

Mode	Port configuration mode

Usage	In the port configuration mode it sets the bridge priority of the port.

Example	Set the priority of GigabitEthernet0/1 to 112: ECS2020-10P(config-if-GigabitEthernet0/1)# spanning-tree port-priority 112

	Command	Description
Command	**show spanning-tree interface gigabitEthernet 0/1**	Display the spanning tree status and configuration of GigabitEthernet0/1.

22.1.17   spanning-tree bpdu [filtering|flooding]

BPDU packets are filtered or flooded when STP is disabled on ports.

spanning-tree bpdu [filtering |flooding]

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

Default	BPDU flooding

Mode	Global configuration mode

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

Example	When spanning tree is disabled, set the BPDU packet to filtering: ECS2020-10P(config)# spanning-tree bpdu filtering

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

22.1.18   spanning-tree trap

Sets the Spanning tree trap information.

spanning-tree 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, it configures the spanning-tree trap information.

Example	Enable the spanning-tree trap of a new-root: ECS2020-10P(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.

22.2   Display relevant commands

22.2.1   show spanning-tree

Displays the current spanning tree status and configuration.

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. Note that "cr" means no arguments are entered.

Default	NULL

Mode	Privileged mode

Usage	In privileged mode, views the spanning tree status. Shows the global status without parameters.

Example	The following commands, from top to bottom, are to display the global state information of the spanning tree and display the spanning tree status information of the Gi 0/1: ECS2020-10P# show spanning-tree ECS2020-10P# show spanning-tree interfaces GigabitEthernet 0/1

Command		
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 of Gi0/1.

23 DHCP v4 server

23.1 Configure commands

23.1.1 DHCP v4 server

Configures the DHCP server parameters, enable the DHCP sever to allow downstream devices to

receives IP address allocations from the switch.

ip dhcpserver pool
ip dhcpserver mask
ip dhcpserver gate-way ip address
ip dhcpserver leasetime
ip dhcpserver major
ip dhcpserver minor
ip dhcp server dhcp-snooping

Parameter	Description
ip dhcpserver pool	Configures the v4 server pool.
ip dhcpserver mask	Configures the v4 server mask.
ip dhcpserver gate-way	Configures the v4 server gate-way.
ip dhcpserver leasetime	Configures the v4 server pool leasetime
ip dhcpserver major	Configures the v4 primary client DNS
ip dhcpserver major	Configures the v4 secondary client DNS
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	Enables the DHCP server function. Use the "no" command to disable the function.
dhcp-snooping	Enables dhcp-snooping.

Parameter

Default disabled

Mode Global configuration mode

Usage In the global configuration mode, used to enable and IPv4 DHCP server, to allow client devices access to switch through the IP address pool allocations configured.

Example	ECS2020-10P(config)# ip dhcpserver pool 192.168.6.100-192.168.6.200 pt1:192.168.6.100, pt2:192.168.6.200 ECS2020-10P(config)# ip dhcpserver mask 255.255.255.0 ECS2020-10P(config)# ip dhcpserver gate-way 192.168.6.1 ECS2020-10P(config)# ip address 192.168.6.1 ECS2020-10P(config)# ip dhcp server ECS2020-10P(config)#dhcp-snooping

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

23.2   Display relevant commands

23.2.1   show ip dhcp server

Used to view the DHCP server configuration.

Show ip dhcp server

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

Default	NULL

Mode	Privileged mode

Usage	view the ip dhcp server information

Example	Show ip dhcp server

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

24　ipv4 client

24.1　Configure commands

24.1.1　ipv4 client

Configure the switch as an IPv4 DHCP client.

ip dhcp
 no ip dhcp

Parameter

Parameter	Description
ip dhcp	Enables the switch as an ip dhcp client.
no ip dhcp	Disables the switch as an ip dhcp clients.

Default　disable

Mode　Global configuration mode

Usage　In the global configure mode, enable ip dhcp so the switch can be allocated an IP address from a connected DHCP server.

Example　ECS2020-10P(config)# ip dhcp ECS2020-10P# show ip dhcp DHCP Status : enabled

Command

Command	Description
show ip dhcp	Displays the ip dhcp configuration.

24.2 Display relevant commands

24.2.1 show ip DHCP

Used to view the IP DHCP status.

Show ip dhcp
Show ip

	Parameter	Description
Parameter	show ip dhcp	Display the status of IP DHCP.
	Show ip	Display the switch's IP address from a DHCP server.

Default	NULL

Mode	Privileged mode

Usage	View the ip dhcp informat

Example	ECS2020-10P# show ip IP Address: 192.168.0.143 Subnet Netmask: 255.255.255.0 Default Gateway: 192.168.0.177 ECS2020-10P# show ip dhcp DHCP Status : enabled

	Command	Description
Command	**show ip dhcp**	Displays the ip dhcp information.
	Show ip	Displays the address the switch received from a DHCP server.

25 ipv6 Client

25.1 Configure commands

25.1.1 ipv6 client

Configure the switch as an IPv6 DHCP client.

Ipv6 dhcp
no ipv6 dhcp
ipv6 autoconfiguration
no ipv6 autoconfiguration

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

Default	disable

Mode	Global configuration mode

Usage	In the global configure mode, enable ip dhcp so the switch can be allocated an IPv6 address from a connected DHCP server.

Example	ECS2020-10P(config)# ipv6 dhcp
	ECS2020-10P(config)# ipv6 autoconfiguration

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

24.1 Display relevant commands

24.1.1 show ipv6 DHCP

Displays the IPv6 DHCP status.

Show ip dhcp
Show ipv6

	Parameter	Description
Parameter	show ipv6 dhcp	Display the status of IPv6 DHCP.
	Show ipv6	Display the switch's IPv6 address from a DHCP server.

Default   NULL

Mode   Privileged mode

Usage   View the ip dhcp information

Example
```
ECS2020-10P# show ipv6 dhcp
DHCPv6 Status : enabled
ECS2020-10P# 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	Description
Command	**show ipv6 dhcp**	Displays the ipv6 dhcp information.
	Show ipv6	Displays the IPv6 address the switch received from a DHCP

26 IGMP Snooping

When configuring IGMP Snooping, use the web manager for general settings and the CLI commands for both general and detailed settings.

26.1   command related to configuration

26.1.1   ip igmp snooping

Enables IGMP snooping in global configuration mode. Use the "no" to the command to disable

IGMP snooping.

ip igmp snooping
no ip igmp snooping

Parameter	Parameter	Description
	None	None

Default	Enabled

Mode	Global configuration.

Usage	Use the command **ip igmp snooping** to enable the IGMP snooping function. Use the **no** form of this command to disable it. You can verify the settings by using the **show ip igmp snooping** command.

Example	ECS2020-10P(config)# **ip igmp snooping**
	ECS2020-10P(config)# **no ip igmp snooping**

	Command	Description
Command	**show ip igmp snooping**	Show the settings of IGMP snooping.

26.1.2   ip igmp snooping version

Sets the 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	version 2

Mode	Global configuration.

| Usage | Use the **ip igmp snooping version** command to change the IGMP support version. You can verify settings by using 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	Displays the IGMP snooping status.

26.1.3 Ip igmp snooping vlan

To enable IGMP snooping of a specific vlan, input ip igmp snooping vlan vlan-list in Global

configuration mode. Use the "no" form of the command to disable the IGMP snooping function on

a vlan.

ip igmp snooping vlan *VLAN-LIST*

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

| Default | Default is disabled 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 the VLAN. It will not learn dynamic group and router port through igmp message after the command is issued.
Use the **ip igmp snooping vlan** command to enable IGMP on a VLAN. Use the **no** form of this command to disable it.
You can verify settings by using the **show ip igmp snooping vlan** command. |

| Example | The following example specifies tha set ip igmp snooping vlan test：
ECS2020-10P(config)# **ip igmp snooping vlan 2** |

	Command	Description
Command	**Show ip igmp snooping vlan**	Display the IGMP snooping settings.

26.1.4   Ip igmp snooping fast-leave

Used to enable the igmp snooping fast-leave function. If there is only one member of the group and a device receives a leave report from a member, the group will leave immediately.

ip igmp snooping fast-leave

	Parameter	Description
Parameter	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 it/ 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： ECS2020-10P(config)# **ip igmp snooping fast-leave**

	Command	Description
Command	**Show ip igmp snooping vlan**	Displays the IGMP snooping settings.

26.1.5   ip igmp snooping suppression

Used to enable the igmp snooping suppression function. A router port will just forward one report packet when it receives many of the same group join packets. This function is invalid in IGMP snooping v3.

ip igmp snooping suppression

	Parameter	Description
Parameter	None	None

Default	Disabled

Mode	Global configuration.

Usage	Use the **ip igmp snooping suppression** command to enable the suppression function. Use the **no** form of this command to disable it. You can verify settings by the **show ip igmp snooping vlan** command.

Example	The following example specifies that set ip igmp snooping suppression test： ECS2020-10P(config)# **ip igmp snooping suppression**

	Command	Description
Command	**Show ip igmp snooping vlan**	Display the IGMP snooping settings.

26.1.6   ip igmp snooping unknown-multicast action

Sets the unknown-multi-cast action to perform when an unknown-multicast packet is received.

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

	Parameter	Description
Parameter	(drop|flood|router-port)	Either drop/flood in a VLAN or forward to a router port on receiving an unknown multicast packet.

Default	drop

Mode	Global configuration.

Usage	When igmp and mld snooping is disabled, this action cannot be set to a port. When igmp snooping & mld snooping is disabled, set the unknown multicast action to flood. Whenever the action is router-port to flood or drop, the unknown multicast group entry will be deleted. Use the i**p igmp snooping unknown-multicast action** command to change the action type. You can verify settings by the **show ip igmp snooping vlan** command.

Example	The following example specifies the set ip igmp unknown-multicast test： ECS2020-10P(config)# **ip igmp snooping unknown-multicast action drop**

Command	Command	Description
	Show ip igmp snooping vlan	Display the IGMP snooping settings.

26.1.7 ip igmp snooping vlan mrouter

Adds a static router port for a 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 a 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 a static router port. All query packets will be forwarded 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：
ECS2020-10P(config)# **ip igmp snooping vlan 2 mrouter interfaces GigabitEthernet 0/5**

Command	Description
Show ip igmp snooping vlan	Display the IGMP snooping settings.

26.1.8 ip igmp snooping vlan mrouter learn

Use this 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 it.

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

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

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

Default Enabled

Mode Global configuration.

Usage Use the **ip igmp snooping vlan mrouter learn pim-dvmrp** command to enable learning router port by routing protocol packets such as PIM/PIMv2,DVMRP,MOSPF.
Use the **no** form of this command to disable it.
You can verify settings by using the **show ip igmp snooping vlan** command.

Example The following example specifies to enable the learning router port test：
ECS2020-10P(config)# **ip igmp snooping vlan 2 mrouter learn pim-dvmrp**

Command	Description
Show ip igmp snooping vlan	Display the IGMP snooping settings.

26.1.9   ip igmp snooping vlan static

Use this command to add a static VLAN 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 groups 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 is set to valid unless igmp snooping vlan is enabled. Use the **no** form of this command to delete a static group. If the last member of static group is removed,the static group will be deleted. You can verify settings by the **show ip igmp snooping group** command.

Example	The following example specifies to set the ip igmp snooping static group test： ECS2020-10P(config)# **ip igmp snooping vlan 2 static 239.1.1.1 interfaces GigabitEthernet 0/6**

Command	Command	Description
	Show ip igmp snooping group	Display the IGMP snooping settings.

26.1.10   ip igmp snooping vlan querier

Use this command to enable a querier for a VLAN. Use "no" with the command to disable querier the function.

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

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

Default	No ip igmp snooping querier by default.

Mode	Global configuration

Usage	When enabling an ip igmp vlan querier, there will be a router selected, the selection success will end general and specific queries. Use the **ip igmp snooping vlan querier** command to add a querier. Use the **no** form of this command to delete a querier. You can verify settings by the **show ip igmp snooping querier** command.

Example	The following example specifies to enable a vlan querier test： ECS2020-10P(config)# **ip igmp snooping vlan 2 querier**

Command	Command	Description
	Show ip igmp snooping querier	Display the IGMP snooping settings.

26.1.11   ip igmp snooping vlan querier version

Use this command to set the 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	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 using the **show ip igmp snooping querier** command.

Example	The following example specifies to set ip the igmp snooping querier version: ECS2020-10P(config)# **ip igmp snooping vlan 2 querier version 3**

	Command	Description
Command	**Show ip igmp snooping querier**	Display the IGMP snooping settings.

26.1.12   ip igmp snooping vlan querier last-member-query-count

Use this command to set the 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	Description
Parameter	VLAN-LIST	Specifies VLAN ID list to set
	last-member-query-count<1-7>	Specifies last member query count to set

Default	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 to set the ip igmp snooping querier last-member-query-count test: ECS2020-10P(config)# **ip igmp snooping vlan 2 querier last-member-query-count 5**

	Command	Description
Command	**Show ip igmp snooping querier**	Display the IGMP snooping settings.

26.1.13 ip igmp snooping vlan querier last-member-query-interval

Use this command to set the 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	Description
Parameter	VLAN-LIST	Specifies VLAN ID list to set.
	last-member-query-interval *<1-25>*	Specifies last member query interval to set.

Default   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 it to default.
You can verify settings by the **show ip igmp snooping vlan** command.

Example   The following example specifies to set the ip igmp snooping querier last-member-query-interval test：
ECS2020-10P(config)# **ip igmp snooping vlan 2 querier last-member-query-interval 10**

	Command	Description
Command	**Show ip igmp snooping querier**	Display the IGMP snooping settings.

26.1.14   ip igmp snooping vlan querier max-response-time

Use this command to set the IGMP snooping querier maximum 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	Description
Parameter	VLAN-LIST	Specifies VLAN ID list to set.
	last-member-query-interval *<5-20>*	Specifies a response time to set.

Default	10

Mode	Global configuration

Usage	Use the **ip igmp snooping vlan querier max-response-time** command to set maximum response-time. Use the **no** form of this command to restore it to default. You can verify settings by the **show ip igmp snooping vlan** command.

Example	The following example specifies to set the ip igmp snooping querier max-response-time： ECS2020-10P(config)# **ip igmp snooping vlan 2 querier max-response-time 20**

	Command	Description
Command	**Show ip igmp snooping**	Display the IGMP snooping settings.

26.1.15   ip igmp snooping vlan querier query-interval

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

Default	125

Mode	Global configuration

Usage	Use the **ip igmp snooping vlan querier query-interval** command to set the interval between each query. Use the **no** form of this command to restore it to default. You can verify settings by the **show ip igmp snooping vlan** command.

Example	The following example specifies to set the ip igmp snooping querier version test: ECS2020-10P(config)# **ip igmp snooping vlan 2 querier query-interval 200**

Command	Command	Description
	Show ip igmp snooping	Display the IGMP snooping settings.

26.1.16   ip igmp snooping vlan robustness-variable

Use this command to set the 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	2

Mode	Global configuration.

Usage	Use the **ip igmp snooping vlan robustness-variable** command to set the retry times. Use the **no** form of this command to restore it to default. You can verify settings by the **show ip igmp snooping vlan** command.

Example	The following example specifies to set the ip igmp snooping querier robustness-variable：
	ECS2020-10P(config)# **ip igmp snooping vlan 1 robustness-variable 5**

Command	Command	Description
	Show ip igmp snooping	Display the IGMP snooping settings.

26.1.17 ip igmp profile

Adds an igmp profile to permit or deny some groups.

ip igmp profile <1-128>
no lp igmp profile <1-128>

Parameter	Parameter	Description
	<1-128>	Specifies profile ID

Default	No profile exists by default.

Mode	Global configuration.

Usage	Use the **ip igmp profile** command to enter profile configuration.
	Use the **no** form of this command to delete profile.
	You can verify settings by the **show ip igmp profile** command.

Example	The following example specifies to set the ip igmp snooping profile test：
	ECS2020-10P(config)# **ip igmp profile 1**

Command	Command	Description
	show ip igmp profile	Display the IGMP profile settings.

26.1.18   profile range

Configure an igmp profile to permit or deny some groups.

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

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

Default	None

Mode	igmp profile configuration mode.

Usage	Use the **profile** command to generate an IGMP profile range to deny or allow groups. You can verify settings by the **show ip igmp profile** command.

Example	The following example specifies to set the ip igmp snooping profile range： ECS2020-10P(config)# **ip igmp profile 1** ECS2020-10P(config)# **profile range ip 225.1.1.1 225.1.2.1 action permit**

	Command	Description
Command	**show ip igmp profile**	Display the IGMP profile settings.

26.1.19   ip igmp filter

Use the ip igmp filter command to bind a profile to a port.

ip igmp filter <1-128>
no lp igmp filter

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

Default	None.

Mode	Port configuration

Usage	Use the **ip igmp filter** command to bind a profile to a port. When a port is binded to a profile the port learning group will update, if the group does not match the profile rule it will remove the port from the group. Static groups are excluded. Use the **no** form of this command to delete a profile. You can verify settings by using the **show running-config** command.

Example	The following example specifies that set ip igmp filter test. ECS2020-10P(config)# interface GigabitEthernet 0/1 ECS2020-10P(config-if-GigabitEthernet0/1)# ip igmp filter 1

	Command	Description
Command	**Show running-config**	Check the ip igmp filter profile information

26.2   Commands related to display and monitoring

26.2.1   clear ip igmp snooping statistics

Use this command to clear the igmp snooping statistics.

clear ip igmp snooping statistics

	Parameter	Description
Parameter	None	Clears all igmp packets statistics.

Default	Null

Mode	Privileged EXEC

Usage	This command will clear all of the igmp packet statistics. You can verify the statistics were cleared by using the **show ip igmp snooping statistics** command.

Example	The following example specifies that show ip igmp snooping statistics test. ECS2020-10P#**clear ip igmp snooping statistics** ECS2020-10P#**show ip igmp snooping statistics** ECS2020-10P#**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	Description
Command	**Show ip igmp snooping statistics**	Verify the igmp snooping statistics info

26.2.2   clear ip igmp snooping groups

Use this command to clear igmp snooping groups.

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

	Parameter	Description
Parameter	None	Clears all the ip igmp groups including dynamic and static.
	(dynamic|static)	ip igmp groups are either dynamic or static.

Default	Null.

Mode	Privileged EXEC

Usage	This command will clear the igmp groups for dynamic or static or all group types. You can verify settings by using the **show ip igmp snooping groups** command.

Example	The following example specifies to clear and show ip igmp snooping groups. ECS2020-10P#**clear ip igmp snooping groups** ECS2020-10P#**show ip igmp snooping groups** VLAN | Group P Address | Type | Life(Sec) | Port Total Number of Entry = 0

Command	Command	Description
	show ip igmp snooping groups	Verifies the igmp snooping groups are cleared.

26.2.3 show ip igmp snooping

Use this command to view the igmp snooping global configuration.

show ip igmp snooping

Parameter	Parameter	Description
	None	None

Default	None.

Mode	Privileged EXEC

Usage	This command will display the ip igmp snooping global configuration.

Example	The following example specifies to show ip igmp snooping global configuration. ECS2020-10P#**show ip igmp snooping** IGMP Snooping state : Enable IGMP Snooping Version : v3 IGMP Fast-Leave : Disable IGMP Report Suppression : Disable IGMP Forward Method : mac IGMP Unknown IP Multicast Action : Drop IGMP Multicast router learning mode : pim-dvmrp vlan 1 ------------- IGMP Snooping state : enabled IGMP Fast-Leave : disabled IGMP Multicast router learning mode : pim-dvmrp IGMP VLAN querier : disabled

Command		Description
Command	**Show ip igmp snooping**	Display the igmp snooping global configuration.

26.2.4   show ip igmp snooping vlan

Use this command to view the igmp snooping vlan information.

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

	Parameter	Description
Parameter	None	Shows all ip igmp snooping vlan information.
	[VLAN-LIST]	Shows specific vlan ip igmp snooping information.

Default	None

Mode	Privileged EXEC.

Usage	This command will display ip igmp snooping vlan information.

Example	The following example specifies to display the ip igmp snooping vlan configuration.

ECS2020-10P#**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		Description
Command	**Show ip igmp snooping vlan**	Display the settings of igmp snooping vlan.

26.2.5   show ip igmp snooping forward-all

This command displays the igmp snooping forward-all info.

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

Parameter	Description
None	Shows all ip igmp snooping vlan forward-all information.
[VLAN-LIST]	Shows specific vlan ip igmp snooping forward-all information.

Mode   Privileged EXEC

Usage   This command will display ip igmp snooping forward-all information.

Example   The following example specifies to display the ip igmp snooping forward-all
test.   ECS2020-10P#**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	Show the settings of igmp snooping forward-all.

26.2.6   show ip igmp snooping groups

Use this command to display the igmp snooping groups information.

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

Parameter	Parameter	Description
	None	Shows all ip igmp groups include dynamic and static information.
	Counters	Shows the dynamic and static groups counters.
	(dynamic|static)	Shows dynamic or static igmp groups.

Default   None.

Mode   Privileged EXEC

Usage   This command will display ip igmp snooping groups for dynamic, static or all types.

	Example	The following example specifies to show the ip igmp snooping groups test. ECS2020-10P#**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	Description
Command	**Show ip igmp snooping groups**	Display the igmp snooping groups configuration.

26.2.7   show ip igmp snooping mrouter

Use this command to display the igmp snooping mrouter configuration by port.

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

	Parameter	Description
Parameter	None	Shows all ip igmp snooping mrouter configuration including both dynamic and static ports.
	(dynamic|static)	Display either dynamic or static igmp mrouter configured ports.

Default	Null

Mode	Privileged EXEC

Usage	This command will display ip igmp snooping mrouter ports configured as dynamic, static or both types.

Example	The following example specifies to show the ip igmp snooping mrouter configuration for both dynamic and staticly configured ports. ECS2020-10P#**show ip igmp snooping mrouter** VID | Port | type | Expiry Time(Sec) ------+---------+---------+------------------ 1 | gi0/8 | Static | --- Total Entry 1

	Command	Description
Command	**Show ip igmp snooping mrouter**	Displays the mrouter port configuration.

26.2.8　show ip igmp snooping querier

Use this command to display the igmp snooping querier configuration

show ip igmp snooping querier

Default	Null

Mode	Privileged EXEC

Usage	This command will display ip igmp snooping querier state per VLAN

Example	The following example specifies to show the ip igmp snooping querier states: ECS2020-10P#**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	Displays the querier configuration per VLAN.

27 MLD Snooping

27.1 MLD Snooping configuration commands

27.1.1 ipv6 mld snooping

Use this command to enable mld snooping in global configuration mode, and use the "no" form of the command to disable mld snooping.

ipv6 mld snooping
no ipv6 mld snooping

Parameter	command	Description
	None	None

Default	Enabled

Mode	Global configuration

Usage	Use command **ipv6 mld snooping** to enable the igmp snooping function for IPv6. Use the **no** form of this command to disable it. Disabling MLD snooping will clear all ipv6 mld snooping dynamic groups and dynamic router port,and set all the static ipv6 mld group as invalid. Also dynamic group and router ports by mld message will not be learned You can verify settings by using the **show ipv6 mld snooping** command.

Example	ECS2020-10P(config)# **ipv6 mld snooping**
	ECS2020-10P(config)# **no ipv6 mld snooping**

	command	Description
Command	**show ipv6 mld snooping**	Display the settings of ipv6 mld snooping.

27.1.2 ipv6 mld snooping version

Command ipv6 mld snooping version sets the MLD snooping version in global configuration mode.

ipv6 mld snooping version *(1|2)*

Parameter	command	Description
	(1|2)	MLD version 1 or version 2 mode

Default	Version 1

Mode	Global configuration.

Usage	Use the **ipv6 mld snooping version** command to change the MLD supported version.For example, version 2 packets will not be processed if version 1 is. You can verify the settings by using the **show ipv6 mld snooping** command.

Example	The following example specifies to set ipv6 mld snooping version to version 2. Switch(config)#**ipv6 mld snooping version 2**

Command	command	Description
	show ipv6 mld snooping	Display the settings of ipv6 mld snooping.

27.1.3   ipv6 mld snooping vlan

Use this command to enable mld snooping on a specific VLAN. Input the ipv6 mld snooping vlan vlan-list in Global configuration mode and use the "no" form of the command to disable the mld snooping function per VLAN.

ipv6 mld snooping vlan *VLAN-LIST*

Parameter	parameter	description
	VLAN-LIST	Specifies a VLAN ID list to set

Default	Disabled

Mode	Global configuration

Usage	Disabling the function will clear all ipv6 mld snooping dynamic group and dynamic router ports and make all static ipv6 mld snooping invalid on a specified VLAN.The VLAN will no longer learn dynamic group and router ports by mld messages afterward. Use the **ipv6 mld snooping vlan** command to enable mld snooping on a VLAN. Use the **no** form of this command to disable it. You can verify settings by the **show ipv6 mld snooping vlan** command.

Example	The following example specifies to set ipv6 mld snooping on VLAN 2： ECS2020-10P(config)# **ipv6 mld snooping vlan 2**

Command	command	Description
	show ipv6 mld snooping	Display the settings of ipv6 mld

27.1.4 ipv6 mld snooping vlan immediate-leave

Use this command to enable the mld snooping vlan immediate-leave function. If there is only one member of the group, and the device receives a leave packet from a member, then the group will leave immediately.

ipv6 mld snooping vlan immediate-leave

	parameter	description
Parameter	VLAN-LIST	Specifies a VLAN ID list to set

Default	Disabled

Mode	Global configuration

Usage	Use the **ipv6 mld snooping vlan immediate-leave** command to enable the vlan immediate leave function. Groups will remove ports immediately when receiving a leave packet. Use the **no** form of this command to disable it. You can verify settings by using the **show ipv6 mld snooping vlan** command.
Example	The following example specifies to set ipv6 mld snooping vlan immediate-leave on VLAN 1： ECS2020-10P(config)# **ipv6 mld snooping vlan 1 immediate-leave**

	command	Description
Command	**show ipv6 mld snooping**	Display the settings of ipv6 mld

27.1.5 ipv6 mld snooping report-suppression

Use this command to enable the mld snooping report-suppression function, a router port will just forward one report packet when receiving many from the same group join packet. This function is invalid if mld snooping is set to Version 2.

ipv6 mld snooping report-suppression
no ipv6 mld snooping report-suppression

	parameter	description
Parameter	None	None

Default	Enabled

Mode	Global configuration

Usage	Use the **ipv6 mld snooping report-suppression** command to enable the report-suppression function. Use the **no** form of this command to disable it. Disable report -supression will forward all received reports to vlan router ports. You can verify settings by the **show ipv6 mld snooping** command.

Example	The following example specifies to disable ipv6 mld snooping report-suppression function： ECS2020-10P(config)# **no ipv6 mld snooping report-suppression**

	command	Description
Command	**show ipv6 mld snooping**	Display the settings of ipv6 mld

27.1.6　ipv6 mld snooping unknown-multicast action

Use this command to set the action to perform when receiving unknown-multicast packets.

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

	parameter	description
Parameter	(drop|flood|router-port)	Drop/flood within a VLAN or forward to a router port.

Default	flood

Mode	Global configuration

Usage	When mld and mld snooping is disabled,the action router port cannot be set. When disabling mld snooping the unknown multicast action is will be set to flood. When the action is drop, it will delete the unknown multicast group entry. Use the ipv6 mld **snooping unknown-multicast action** command to set the unknown multcast action. You can verify the settings by the **show ipv6 mld snooping** command.

Example	The following example specifies to set ipv6 mldunknown-multicast action to drop within VLANs： ECS2020-10P(config)# **ipv6 mld snooping unknown-multicast action drop**

	command	Description
Command	**show ipv6 mld snooping**	Display the settings of ipv6 mld

27.1.7   ipv6 mld snooping vlan static-router-port

Use this command to add a static router port for a 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 a VLAN ID list to set.
	IF-PORTS	Specifies a port list to set or remove.

Default	No static router ports

Mode	Global configuration

Usage	Use the **ipv6 mld snooping vlan static-router-port** command to add a static router port. All query ackets will be forwarded to this port. Use the **no** form of this command to delete static router port. You can verify the settings by using the **show ipv6 mld snooping router** command.

Example	The following example specifies to set the ipv6 mld snooping static router port to Ethernet port 0/5 for VLAN 2： ECS2020-10P(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.

27.1.8   ipv6 mld snooping vlan router learn

Use this command to enable learning router ports by using routing protocol packets such as PIM/PIMv2,DVMRP, or MOSPF. Use the no form of this command to disable it.

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

Default	Enabled

Mode	Global configuration

Usage	Use the **ipv6 mld snooping vlan mrouter learn pim-dvmrp** command to enable learning router port by routing protocol packets such as PIM/PIMv2,DVMRP or MOSPF. Use the **no** form of this command to disable it. You can verify the settings by using the **show ipv6 mld snooping vlan** command.

Example	The following example specifies to enable learning router port function pim-dvmrp on VLAN2： ECS2020-10P(config)# **ipv6 mld snooping vlan 2 mrouter learn pim-dvmrp**

	command	description
Command	**Show ipv6 mld snooping vlan**	Verify the ipv6 mld snooping information.

27.1.9　ipv6 mld snooping vlan static-group

Use this command to add a static group to a VLAN with mld snooping enabled.

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	description
Parameter	lp-addr	Specifies a multicast group ipv6 address.
	IF-PORTS	Specifies a port list to set or remove.

Default	No static groups set.

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 a dynamic group exists, then the static group will overlap the dynamic group.The static group is set to valid unless mld snooping vlan is enabled. Use the **no** form of this command to delete a static group. When removing the last member of a static group, the static group will be deleted. You can verify settings by using the **show ipv6 mld snooping groups** command.

Example	The following example specifies to set ipv6 mld snooping static group for VLAN1. ECS2020-10P(config)# **ipv6 mld snooping vlan 1 static-group ff08::9 interfaces** Aggregateport 0/6

	command	description
Command	**Show ipv6 mld snooping groups.**	Verify the static group information.

27.2   Commands related to display and monitoring

27.2.1   clear ipv6 mld snooping statistics

Use this command to the clear ipv6 mld statistics.

clear ipv6 mld snooping statistics

	parameter	description
Parameter	None	Clears 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 using the **show ipv6 mld snooping statistics** command.

Example	The following example specifies to show the ipv6 mld snooping statistics. ECS2020-10P#**clear ipv6 mld snooping statistics** ECS2020-10P#**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

Example	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	Verifys ipv6 mld statistics information.

27.2.2   clear ipv6 mld snooping groups

Use this command to clear the mld snooping groups.

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

Parameter	parameter	description
	None	Clears the ipv6 mld groups include dynamic and static.
	(dynamic|static)	Ipv6 mld group is specified as either dynamic or static.

Default	None.

Mode	Privileged EXEC

Usage	This command will clear the mld groups for either dynamic, static or both types. You can verify the settings by using the **show ipv6 mld snooping groups** command.

Example	The following example specifies to clear the ipv6 mld snooping groups. ECS2020-10P#**clear ipv6 mld snooping groups** ECS2020-10P#**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 information.

27.2.3 show ipv6 mld snooping

View mld snooping global info.

show ipv6 mld snooping

	Parameter	Description
Parameter		
	None	None

Default	None.

Mode	Privileged EXEC

Usage	This command will display ipv6 mld snooping global info.

Example

```
The following example specifies to show ipv6 mld snooping.
ECS2020-10P#show  ipv6 mld snooping
MLD Snooping Status
                    --------------------

    Snooping                : Enabled
    Report Suppression         : Enabled

  Forward Method             : mac
    Unknown IPv6 Multicast Action   : Flood

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

	Command	Description
Command		
	Show ipv6 mld snooping	Verifies settings of mld snooping.

27.2.4   show ipv6 mld snooping vlan

Use this command to view the mld snooping vlan information.

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

Parameter	parameter	description
	None	Show all mld snooping vlan information.
	[VLAN-LIST]	Show specific VLAN mld snooping information.

Default	Null

Mode	Privileged EXEC

Usage	This command will display ipv6 mld snooping vlan information.

Example	The following example specifies to show ipv6 mld snooping vlan. ECS2020-10P#**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	Command	Description
	Show ipv6 mld snooping vlan	Verify the settings of mld snooping vlan.

27.2.5   show ipv6 mld snooping forward-all

Use this command to display the mld snooping forward-all information.

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

Parameter	Parameter	Description
	None	Show all ipv6 mld snooping vlan forward-all information.
	[VLAN-LIST]	Show specific per-VLAN ipv6 mld snooping forward-all information.

Default	Null

Mode	Privileged EXEC

Usage	This command will display ipv6 mld snooping forward-all information.

The following example specifies to show ipv6 mld snooping forward-all information:
ECS2020-10P#**show ipv6 mld snooping forward-all**

Example	27.2.5.1.1.1.1 MLD Snooping VLAN 1
	27.2.5.1.1.1.2 MLD Snooping static port : None
	              MLD Snooping forbidden port : None
	
	27.2.5.1.1.1.3 MLD Snooping VLAN 2
	27.2.5.1.1.1.4 MLD Snooping static port : None
	              MLD Snooping forbidden port : None
	
	27.2.5.1.1.1.5 MLD Snooping VLAN 3
	27.2.5.1.1.1.6 MLD Snooping static port : None
	              MLD Snooping forbidden port : None

	Command	Description
Command	**Show ipv6 mld snooping forward-all**	Displays the settings of mld snooping forward-all.

27.2.6   show ipv6 mld snooping groups

Use this command to display the mld snooping groups information.

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

	parameter	description
Parameter	None	Shows all ipv6 mld groups including the dynamic and static information.
	Counters	Show the dynamic and static groups counters
	(dynamic|static)	Show specifically the dynamic or static igmp groups

Default	None

Mode	Privileged EXEC

| Usage | This command will display ipv6 mld snooping groups for dynamic, static or both. |

| Example | The following example specifies to show ipv6 mld snooping groups.
ECS2020-10P#**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	Displays the mld snooping groups information.

27.2.7   show ipv6 mld snooping router

Use this command to display the mld snooping router info

show ipv6 mld snooping router [*counters|dynamic|static*]

Parameter		
	Parameter	Description
	None	Shows all ipv6 mld router information for both dynamic and static.
	(dynamic|static)	Show either dynamic or static mld snooping router information.

| Default | None. |

| Mode | Privileged EXEC |

| Usage | This command will display ipv6 mld snooping router information for dynamic, static or both types. |

Example	The following example specifies to show ipv6 mld snooping router for all types. ECS2020-10P#**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

28 Path detection

28.1   ping

Use to detect if a specified host is reachable or not. Include either the ipv4 address, ipv6 address or a domain name.

ping *[HOSTNAME]*

Parameter	parameter	description
	[HOSTNAME]	Host name information

Default	None.

Mode	Privileged EXEC

Usage	This command will detect if a host is reachable or not.

Example	The following example shows a ping test to an IPv6 address. ECS2020-10P#**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	Adding the host name after the command will confirm if the host is reachable or not.

28.2　traceroute

Use this command to trace the route to a network host and record the routing information to the host. Either the ipv4 address, ipv6 address or the domain name must be included with the command.

traceroute *[HOSTNAME]*

Parameter	Parameter	Description
	[HOSTNAME]	Host name information.

Default	Null

Mode	Privileged EXEC

Usage	This command will record the routing information to a specified host.

Example	The following example shows a traceroute test: ECS2020-10P#**traceroute　www.baidu.com**

Command	Command	Description
	traceroute	Add the host name after the command to display the routing information to the host.

29 Access Control List

29.1 Configure commands

29.1.1 standard ip access-list

Configures a standard ip access-list. Using a series of match rules, network data can be filtered.

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	Global Configuration mode

Usage	Configuration access control list

Example	ip access-list standard 0

Command	Command	Description
	show access-list	Displays the access control list information.

29.1.2 extended ip access-list

This command configures an extended ip access-list. By a series of match rules, the network data can be filtered.

ip access-list extended { ACL-name**}**
no ip access-list extended { ACL-name**}**

Parameter	Parameter	Description
	ACL-name	The name of the ACL(10-19)

Default	Null

Mode	Configuration mode

Usage	Configuration access control list

Example	ip access-list extended 10

Command	Command	Description
	show access-list	Displays the access control list information.

29.1.3   ACE configuration

Use this command in relation to an ip access-list to configure its specific rules.

ip access-list {standard|extended} {0-9|10-19**} [**0-9|deny|end|exit|hlep|no|permit**]**

	Parameter	Description
Param eter	0-9	Configure the ace number optional and the default is 0.
	deny	Deny the assignable data type，parameter has [any|host|sip]
	end	Quit
	exit	Back to Previous Level
	no	Deletes the rules
	permit	Permit the 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	Displays access control list information.

29.1.4   **standard ip access-list deny|permit**

Under a standard ip access-list, this command configures 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	Description
	any	any source IP address
	host	host IP address
Parameter	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	Description
Command	**show access-list**	Displays the access control list information.

29.1.5　extended ip access-list deny|permit

Under an extended ip access-list, this command configures 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	description
Param eter	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	Description
Command	**Show access-list**	Displays the access control list information.

29.1.6   **ip access-list commit**

Using this command with an ACL applied to an interface the received network data can be filtered.

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

Parameter	
	Parameter | **Description**

Parameter	Parameter	Description
	port_id	Interface ID
	ACL-name	The name of the ACL

Default	Null

Mode	interface configuration mode

Usage	Apply the ACL

Example	`interface GigabitEthernet 0/1` `ip access-list 0 commit`

Command	Null

29.1.7   **standard ipv6 access-list**

Configures a standard ipv6 access-list to use a series of match rules in order to filter network ipv6 data.

ipv6 access-list standard { ACL-name**}**
no ipv6 access-list standard { ACL-name**}**

Parameter	Parameter	Description
	sACL-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	Description
Command	**show access-list**	Displays access control list information.

29.1.8　extended ipv6 access-list

Configures an extended ipv6 access-list to use a series of match rules, in order to filter network ipv6 data.

ipv6 access-list extended{ ACL-name**}**
no ipv6　access-list extended { ACL-name**}**

	Parameter	Description
Parameter	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	Description
Command	**show access-list**	Display access control list information.

29.1.9　ipv6 ACE configuration

Under an ipv6 access-list, this command configures specific rules.

ipv6 access-list {standard|extended**} {**26-35|36-45**}** [0-9|deny|end|exit|hlep|no|permit]

	Parameter	Description
Param eter	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	Description
Command	**show access-list**	Displays the access control list information.

29.1.10　standard ipv6 access-list deny|permit

Under an tandard ip access-list, this command configures its 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	description
Parameter	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	Description
Command	**show access-list**	Displays the access control list information.

29.1.11   extended ipv6 access-list deny|permit

Under an extended ip access-list, this command configures 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
	ip|tcp|udp	protocol type
	any	any source IP address
Param eter	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	Description
Command	**show access-list**	Displays the access control list information.

29.1.12   ipv6 access-list commit

Use this command for an ipv6 ACL applied to an interface to filter the received 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

29.1.13　mac access-list extended

Use this command to Configures a MAC access-list to use a series of match rules that can network data.

mac access-list extended { ACL-name**}**

no mac access-list extended { ACL-name**}**

Parameter	Parameter	Description
	ACL-name	The name of the ACL （20-25）

Default	Null

Mode	Configuration mode

Usage	Configuration access control list

Example	`mac access-list extended 20`

Command	Command	Description
	show access-list	Displays the access control list information.

29.1.14 **mac ACE configuration**

Under a MAC access-list, this command configures specific rules.

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

	Parameter	Description
	0-9	Config ace number, optional, Default value is 0.
	deny	Deny assignable data type, parameter has [any|host|sip]
Param eter	end	Quit
	exit	Back to Previous Level
	no	Delete the rules
	permit	Perint 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	Description
Command	**show access-list**	Displays the access control list information.

29.1.15 **mac access-list deny|permit**

Under an extended mac access-list, this command configures 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	Description
	any	any source/dest mac address
Parameter	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	Description
Command	**show access-list**	Display access control list information.

29.1.16   **mac access-list commit**

When this command is used a MAC ACL will be applied to an interface to filter network data.

interface GigabitEthernet {port_id**}**
    mac access-list {ACL-name**} commit**
interface GigabitEthernet {port_id**}**
    no mac 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`
`mac access-list 20 commit` |

| | Command | Null |

29.2 Display commands

29.2.1 show access-list

This command shows the access-list information.

show access-lists

	Parameter	Description
Parameter	**show access-lists**	Displays access control list information.

Default	Null

Mode	Privileged mode

Usage	Displays the 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

30 802.1X

Note: 802.1X requires an 802.1x RADIUS server to be configured.

30.1   Configure commands

30.1.1   authentication dot1x

Use this command to enable 802.1x authentication. Use the no form of the command to disable it.

authentication dot1x
no authentication dot1x

Parameter	Parameter	Description
	Null	Null

Default	Null

Mode	Global Configuration

Usage	Configuration 802.1X

Example	authentication dot1x

Command	Command	Description
	Show authentication	Displays the 802.1x information.

30.1.2   authentication dot1x

Use this command to turn on 802.1x authentication on a port at the interface level.

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	Description
Command	**show authentication interface GigabitEthernet** port_id	Displays 802.1x port information.

30.1.3　authentication port-control

Use this command to configure 802.1X port-control mode at the interface level.

interface GigabitEthernet {port_id**}**
　　authentication port-control {auto|force-auth|force-unauth**}**
interface GigabitEthernet {port_id**}**
　　no authentication port-control

	Parameter	Description
Parameter	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	Description
Command	**show authentication interface GigabitEthernet** port_id	Displays the 802.1x port information.

30.1.4　authentication host-mode

Use this command to configure the 802.1X host-mode at the interface level.

interface GigabitEthernet {port_id**}**
　　authentication host-mode {single-host|multi-host|multi-auth**} interface**
GigabitEthernet {port_id**}**
　　no authentication host-mode

	Parameter	Description
Parameter	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	Description
Command	**show authentication interface GigabitEthernet** port_id	Displays the 802.1x port information.

30.2　Display commands

30.2.1　show authentication
Use this command to display the 802.1x configuration.

show 802.1X information.
show authentication {interfaces GigabitEthernet port_id**}**

	Parameter	Description
Parameter	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

31 AAA

31.1 Configure commands

31.1.1 radius host

Use this command to configure a RADIUS server in conjunction with the switch.

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	Description
Parameters	host_name	Radius server IP address or domain name
	port_id	TCP/UDP port number, default is 1812.(0-65535)
	key	Radius server key
	pri_value	Priority value,(1-65534)
	retransmit_times	The number of retransmits, 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	31.1.1.1.1.1.1 p ort_id:1812 retransmit_times:3

Mode	Global Configuration mode

Usage	Configurating a RADIUS server.

Example	radius host 192.168.100.1 auth-port 1812 key public priority 1 retransmit 1 timeout 1 type all

Command	Command	Description
	show radius	Displays the RADIUS information.

TACACS host

Use this command to configure a TACACS server in conjunction with the switch.

tacacs host {host_name} **[port]** {port_id} **[key]** {key} **[priority]** {pri_value} **[timeout]** {timeout_vlaue}

no tacacs host {ip_addr}

	Parameter	Description
Parameter	host_nam	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 the server to reply.(1-30)

Default	port_id:49

Mode	Global Configuration mode

Usage	Configuration TACACS

Example	tacacs host 192.168.100.1 port 49 key public priority 1 timeout 30

	Command	Description
Command	**show tacacs**	Displays the TACACS information.

31.1.2 aaa authentication enable

This command configures the enable 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	Global Configuration mode

	Usage	Configure eable authentication method.

	Example	aaa authentication enable Xn enable tacacs+ radius

	Command	Description
Command	**show aaa authentication enable lists**	Displays the enable authentication information.

31.1.3   **aaa authentication login**

This command configures the login authentication method.login including console, telnet and SSH.

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

	Parameter	Description
Parameter	list_name	Auth Method List Name
	auth_method_list	Login Authentication Method List. [radius|tacacs+|locaol]

	Default	Null

	Mode	Global Configuration mode

	Usage	Configures the login authentication method.

	Example	aaa authentication login Xn local radius tacacs+

	Command	Description
Command	**show aaa authentication login lists**	Displays the login authentication information.

31.1.4   **line console**

Use this command to turn on login from a console using AAA authentication.

line console
    login authentication {Login_auth_list_name**}**
    enable authentication {enable_auth_list_name**}**

line console
    no login authentication
    no enable authentication

Parameter	Parameter	Description
	Login_auth_list_name	Login auth Method List Name
	enable_auth_list_name	Enable auth Method List Name

Default	Null

Mode	Global Configuration mode

Usage	Configures a login authentication method.

Example	line console
	    login authentication Xn
	    enable authentication Xn

Command	Command	Description
	show line lists	Displays the login authentication information.

31.1.5   line telnet

Use this command to turn on login from telnet using AAA authentication.

line telnet
    login authentication {Login_auth_list_name**}**

    enable authentication {enable_auth_list_name**}**

line telnet
    no login authentication
    no enable authentication

Parameter	Parameter	Description
	Login_auth_list_name	Login auth Method List Name
	enable_auth_list_name	Enable auth Method List Name

Default	Null

Mode	Global Configuration mode

Usage	Configure telnet authentication method.

Example	line telnet
	login authentication Xn
	enable authentication Xn

	Command	Description
Command	**show line lists**	Displays the Telnet authentication information.

31.1.6   **line ssh**

Use this command to turn on login from ssh using AAA authentication.

line ssh

    login authentication {Login_auth_list_name**}**

    enable authentication {enable_auth_list_name**}**

line ssh
    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	Global Configuration mode

Usage	Configures the ssh authentication method.

Example	line ssh
	login authentication Xn
	enable authentication Xn

	Command	Description
Command	**show line lists**	Displays the ssh authentication information.

31.2 Display commands

31.2.1 show radius

Use this command to display the RADIUS information.

show radius

	Parameter	Description
Parameter	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

31.2.2 show tacacs

Use this command to display the TACACS information.

show tacacs

	Parameter	Description
Parameter	Null	Null

Default	Null

Mode	Privileged mode

Usage	Displays the TACACS information.

	Example	show tacacs Prio | Timeout | IP Address | Port | Key ------+---------+------------------+--------+---------- 1 | 30 | 192.168.100.1 | 49 | public
	Command	Null

31.2.3   show aaa authentication enable list

Use this command to display the 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

31.2.4   show aaa authentication login list

Use this command to display the aaa authentication information.

show aaa authentication login list

	Parameter	Parameter	Description
		Null	Null

Default	Null

Mode	Privileged mode

Usage	display aaa authentication information..

Example

show aaa authentication login lists
  Login List Name   Authentication Method List
   ------------------|-------------------------------
          default | local
            Xn | local radius tacacs+

Command	Null

32 SSH

32.1   Configure commands

32.1.1   ip ssh

Use this command to enable the 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	Global Configuration mode

Usage	Configuration radius

Example	ip ssh

Command	Null

33 SSL

33.1   Configure commands

33.1.1   ssl

Use this command to generate an SSL digital certificate.

ssl

	Parameter	Description
Parameter	Null	Null

Default	Null

Mode	Privileged mode

Usage	Generates a new SSL certificate

Example	ssl

Command	Null

33.1.2   ssl replace

Enabled a new SSL digital certificate to function.

ssl replace

Parameter

Default	Null

Mode	Privileged mode

Usage	Enables a new SSL certificate.

Example	ssl replace

Command	Null

34 QoS

34.1 Configure commands

34.1.1 qos trust

This command configures the QoS classify mode.

qos trust {classify_mode**} no qos trust**

	Parameter	Description
Parameter	classify_mode	QoS Classify mode. [cos|dscp]

Default	Null

Mode	Global Configuration mode

Usage	config qos classify mode

Example	qos queue trust dscp

	Command	Description
Command	**show qos**	Displays the QoS information.

34.1.2 qos queue schedule

Config qos schedule algorithm.

qos queue schedule {schedule_mode**}**

Parameter	Parameter	Description
	schedule_mode	QoS schedule mode. [sp|wrr|hybird]

Default	Null

Mode	Global Configuration mode

Usage	Configures the QoS schedule algorithm.

Example	qos queue schedule wrr

Command	Command	Description
	show qos queueing	Displays the QoS queue information.

34.1.3   qos map cos-queue

Use this command to configure the 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	Global Configuration mode

Usage	config qos queue mapping relationship

Example	qos map cos-queue 1 to 1

Command	Command	Description
	show qos map cos-queue	Displays the qos map information.

34.1.4　qos map dscp-queue

Use this command to configure the QoS queue mapping relationship.

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

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

Default	Null

Mode	Global Configuration mode

Usage	Configures the QoS queue mapping relationship.

Example	qos map dscp-queue 1 to 8

Command	Command	Description
	show qos map dscp-queue	Displays the qos map information.

34.1.5　qos map weight

When you use the WRR mode, this command is used to configure each queues weight value..

qos map weight {weight_values**}**

Parameter	Parameter	Description
	weight_values	weight_values.(1-127)

Default	Null

Mode	Global Configuration mode

Usage	config qos queue weight.

Example	qos queue weight 1 1 1 50 50 50 100 100

Command	Command	Description
	show qos map queueing	Displays the qos queue information.

34.1.6 qos queue strict-priority-num

Use this command to configure the SP schedule queue's number when hybrid mode is enabled.

qos queue strict-priority-num {SP_num**}**

Parameter	Parameter	Description
	weight_values	weight_values.(1-127)

Default	Null

Mode	Global Configuration mode

Usage	Configures the qos queue weight.

Example	qos queue weight 1 1 1 50 50 50 100 100

Command	Null

34.2 Display commands

34.2.1 show qos

Use this command to display the QoS information.

show qos

Parameter	Parameter	Description
	Null	Null

Default	Null

Mode	Privileged mode

Usage	Use this command to display the QoS information.

Example	show qos QoS Mode: enable Basic trust: cos

Command	Null

34.2.2   show qos queueing

show qos queue information.

show qos queueing

Parameter	Parameter	Description
	Null	Null

Default	Null

Mode	Privileged mode

Usage	Display the 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

34.2.3　show qos map cos-queue

Use this command to display the QoS mapped COS queue information.

show qos map cos-queue

	Parameter	Description
Parameter	Null	Null

Default	Null
Mode	Privileged mode
Usage	Displays the QoS COS 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

34.2.4　show qos map dscp-queue

Use this command to show the qos mapped DSCP queue information.

show qos map dscp-queue

	Parameter	Description
Parameter	Null	Null

Default	Null
Mode	Privileged mode
Usage	Displays the QoS mapped DSCP 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

35 POE commands

35.1 configure command

35.1.1 PoE enable

Use this command to enable the power supply capability of a PoE port.

poe enable
no poe enable

Parameter		Description
Parameter	**poe enable**	Enables the PoE power supply function, the default is on.
	no poe enable	Turns off the PoE power supply.

Default	Enabled

Mode	Interface configuration mode

Usage	Use this command to enable or disable the remote power supply capability of the port.

Example	`ECS2020-10P(config-if-GigabitEthernet0/1)# poe enable` `ECS2020-10P(config-if-GigabitEthernet0/1)# no poe enable`

	Command	Description
Command	**show poe interfaces configuration**	Display the configuration information of current interface PoE

35.1.2   **poe mode**

Use this command to configure the power management mode of the PoE system.

poe mode auto
poe mode energy-saving
poe mode static

	Parameter	Description
Parameter	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	`ECS2020-10P(config)# poe mode auto`
	`ECS2020-10P(config)# poe mode energy-saving`
	`ECS2020-10P(config)# poe mode static`

	Command	Description
Command	**show poe powersupply**	View the PoE system configuration information.

35.1.3   poe max-power

Use this command to set the system maximum power.

poe max-power no poe max-powe

	Parameter	Description
Parameter	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	ECS2020-10P(config)# interface GigabitEthernet 0/1 ECS2020-10P(config-if-GigabitEthernet0/1)# poe max-power 20

	Command	Description
Command	**show poe interfaces configuration**	View the PoE interface configuration information.

35.1.4　poe alloc-power

Use this command to set the system allocation power.

poe alloc-power
no poe alloc-power

	Parameter	Description
Parameter	**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 | ```
ECS2020-10P(config)# interface GigabitEthernet 0/1
ECS2020-10P(config-if-GigabitEthernet0/1)# poe alloc-power 20
``` |

	Command	Description
Command	**show poe interfaces configuration**	View the PoE interface configuration information.

35.1.5   poe timer enable

Use this command to enable the PoE timer.

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   Disabled POE timer

Mode   Global configuration mode

Usage   Use this command to enable or disable the remote power supply capability
timer of a port.

```
ECS2020-10P(config)# poe timer enable
ECS2020-10P(config)# no poe timer enable
```

Example

Command	Command	Description
	show poe timer	View the configuration information of interface PoE timer.

35.1.6   poe timer configuration

Use this command to set the PoE timer mode.

<table>
<tr><th>Parameter</th><th>Parameter</th><th>Description</th></tr>
<tr><td rowspan="2"></td><td>absolute</td><td>Sets the PoE power to the absolute time.</td></tr>
<tr><td>periodic</td><td>Sets the PoE power cycle time.</td></tr>
</table>

Default	NULL

Mode	Interface configuration mode

Usage	Use the command to set the PoE power supply time.

Example	ECS2020-10P(config)# poe timer enable ECS2020-10P(config)# interface GigabitEthernet 0/5 ECS2020-10P(config-if-GigabitEthernet0/5)# poe timer periodic everyday 8:30 to 19:30 mon to wed ECS2020-10P(config-if-GigabitEthernet0/5)# poe timer absolute start 08:30 jul 25 2017 stop 18:30 sep 30 2017

<table>
<tr><th></th><th>Command</th><th>Description</th></tr>
<tr><td>Command</td><td>show poe timer</td><td>View the configuration information of the interface PoE timer information.</td></tr>
</table>

35.2 Display relevant commands

35.2.1 show poe interface

Use this command to view the PoE configuration and status information of a specified port.

show poe interface gigabitEthernet port-id

Parameter	Parameter	Description
	port-id	Allocation power in the range <6,11,20,32,35W>

Default   NULL

Mode   Privilege configuration mode.

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

Example

```
ECS2020-10P# 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
ECS2020-10P#
```

35.2.2   show poe interfaces

Use this command to view the PoE status or configuration of all ports.

show poe interfaces status
show poe interfaces configuration

	Parameter	Description
Parameter	**Null**	Null

Default   null

Mode   Privilege configuration mode.

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

Example

```
ECS2020-10P# 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
  ECS2020-10P#
```

35.2.3   show poe powersupply

Use this command to view the power state of the PoE system.

show poe powersupply

Parameter	Description
Null	Null

Default –

Mode Privilege configuration mode.

Usage Execute this command to view the power supply status of the PoE system.

Example
```
ECS2020-10P# 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%]
```

35.2.4   show poe timer

Issue this command to view the PoE timer value.

show poe timer

Parameter	Description
Null	Null

Default –

Mode Privilege configuration mode.

Usage Execute this command to view the configured PoE timer value.

Example
```
ECS2020-10P# show poe timer
PORT  | Timer mode|   Start timer |   Stop timer
----------+-----------+---------------+--------------
    1    |   Periodic|  Wednesday 8:0| Friday 23:0
```

36 SNMP command

36.1   SNMP configuration commands

36.1.1   snmp enable

Use this command to enable the SNMP agent on the switch.

Snmp enable

Parameter	
Parameter	Description
snmp enable	Enables the SNMP agent, the default is off

Default	Disabled

Mode	Global configuration mode

Usage	Use this command to configure and enable the SNMP agent, an IPv6 SNMP agent is enabled at the same time.

Example	ECS2020-10P(config)# snmp enable

Command	
Command	Description
show snmp	Views the current SNMP status.

36.1.2　**no snmp enable**

Use this command to disable the SNMP agent.

no snmp enable

Parameter

Parameter	Description
snmp enable	Enable the SNMP agent, the default is off.

Default

Disabled.

Mode

Global configuration mode

Usage

Use this command to shut down the SNMP agent.

Example

```
ECS2020-10P(config)# no snmp enable
```

Command

Command	Description
show snmp	View the SNMP status.

36.1.3　snmp enable traps

Use this command to enable SNMP to actively send trap messages to an NMS. The no form of this command disables SNMP from sending an NMS traps.

snmp-server enable traps
no snmp-server enable traps

Parameter	Parameter	Description
	snmp-server enable traps	Enables the trap function
	no snmp-server enable traps	Disables the trap function

Default	Disabled

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	ECS2020-10P(config)# snmp-server enable traps
	ECS2020-10P(config)# no snmp-server enable traps

Command	Command	Description
	show snmp	View the current SNMP switch status.

36.1.4　snmp-server community

Use this command to specify the access characters for the SNMP community.

snmp-server community *Community name* **[ro | rw| view]**

Parameter		Description
parameter	*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	ECS2020-10P(config)# snmp-server community test rw

	Command	Description
Command	**show snmp community**	View the configured Community Information.

36.1.5   snmp-server host

Use this command to configure an SNMP host (NMS) to receive switch trap messages. 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	Description
	host-addr	Receive the Trap host IP address
Parameter	*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	`ECS2020-10P(config)# snmp-server host 192.168.100.149 traps`
	`version 1 test`
	`ECS2020-10P(config)# no snmp-server host 192.168.100.149 traps`
	`version 1 test`

Command	Command	Description
	show snmp host	View the SNMP host settings configured on the switch.

36.1.6   snmp trap auth

Use this command to enable sending a trap (authTrap) message when an authemtication fails on the switch. Use the no option for this command and the SNMP function will not issue an authTrap.

snmp trap auth
no snmp trap auth

parameter	Parameter	Description
	Null	Null

Default	Enabled – authTraps will be sent on authentication failure.

Mode	Global configuration mode.

Usage	When the function is turned on, if auth fails to change, SNMP will be issued AuthTrap

Example	ECS2020-10P(config)# snmp trap auth
	ECS2020-10P(config)# no snmp trap auth

Command	Command	Description
	show snmp trap	Views the snmp trap configuration.

36.1.7   **snmp trap link-status**

Use this command to enable sending a link-status trap (LinkTrap) should a port link status change. Use the no option of this command and SNMP will not send LinkTrap.

snmp trap linkup
snmp trap linkDown

parameter	Parameter	Description
	Null	Null

Default	When this function is enabled and the link status of a port changes, SNMP will send a LinkTrap.

Mode	Global configuration mode.

Usage	For an interface (Ethernet interface, Ap interface or SVI interface), this command configures whether to send an interface LinkTrap or not. If an interface changes Link state, SNMP will issue a LinkTrap.

Example	
	ECS2020-10P(config)# snmp trap linkUp
	ECS2020-10P(config)# snmp trap linkDown

Command	Command	Description
	show snmp trap	Views the snmp trap configuration.

36.1.8   **snmp trap restart**

Use this command to enable sending a warm-start or cold-start trap after a successful restart. Use the no option of this command and SNMP will not send a warm or cold start trap.

snmp trap cold-start
snmp trap warm-start

parameter	Parameter	Description
	Null	Null

Default	If this function is enabled and the switch reboots or restarts, a trap message is sent after a successful reboot.
Mode	Global configuration mode
Usage	For either warm-start and cold-starts a trap function can be enabled. After a successful restart the relevant trap message will be sent if enabled.
Example	ECS2020-10P(config)# snmp trap cold-start ECS2020-10P(config)# snmp trap warm-start

	Command	Description
Command	**show snmp trap**	Views the snmp trap configuration.

36.1.9   snmp trap stp

Use this command to enable sending an STP trap after a topology change or a new root bridge is created. Use the no option of this command and SNMP will not send an STP trap.

snmp trap stp
no snmp trap stp

	Parameter	Description
parameter	Null	Null

Default	Disabled
Mode	Global configuration mode.
Usage	When a network topology change is detected or a new root bridge is created, an STP Trap is sent if enabled otherwise none is sent.
Example	ECS2020-10P(config)# snmp trap stp ECS2020-10P(config)# no snmp trap stp

Command	Command	Description
	show snmp trap	Views the snmp trap configuration.

36.2   SNMP display relevant commands

36.2.1   **show snmp-status**

Use this command to displays the current SNMP **on** state.

show snmp

parameter	Parameter	Description
	Null	Null

Default

Mode   Privilege configuration mode

Usage

Example   ECS2020-10P# show snmp
                SNMP is enabled.

36.2.2   **show snmp trap**

Use this command to display the current SNMP trap status.

show snmp trap

parameter	Parameter	Description
	Null	Null

Default   –

Mode   Privilege configuration mode

Usage

Example	36.2.2.1.1.1.1 ECS2020-10P# 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

36.2.3 show community

Use this command to display the current SNMP community name and status.

show snmp community

Parameter	Parameter	Description
	Null	Null

Default	–

Mode	Privilege configuration mode

Usage	

Exampel	ECS2020-10P# show snmp community Community Name Group Name View Access ------------------- ----------------------------- -------------------------------- ------------ private - all rw public - all ro

36.2.4   show snmp host

Use this command to display the host that receives the trap information.

show snmp host

	Parameter	Description
parameter	Null	Null

Default	–

Mode	Privilege configuration mode

Usage	-

Example

```
ECS2020-10P# 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
```

37 lldp settings

37.1 lldp settings

37.1.1 LLDP enable

This command enables LLDP. 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	Description
Parameter	Null	Null

Default	Enabled

Mode	Global configuration mode

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

Example	ECS2020-10P(config)# lldp ECS2020-10P(config)# no lldp

	Command	Description
Command	**show lldp**	Displays the LLDP information.

37.1.2 lldp rx

When the port works in Rx. mode, the device only receives non-sending neighbor devices to send LLDP packets.

lldp rx

no lldp rx

	Parameter	Description
Parameter	-	-

Default	default is disable

Mode	Interface configuration mode

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

Example	ECS2020-10P(config-if-GigabitEthernet0/1)# lldp rx ECS2020-10P(config-if-GigabitEthernet0/1)# no lldp rx

	Command	Description
Command	**show lldp**	Display LLDP information

37.1.3   LLDP tx-interval

Use this command to set the LLDP message transmission interval.

lldp tx-interval <5-32767> no

lldp tx-interval

	Parameter	Description
Parameter	<5-32767>	Specify the LLDP PDU tx interval in unit of second

Default	30s

Mode	Global configuration mode

Usage	Use "lldp tx-interval" command to set the LLDP TX interval. It should be noted that both "lldp tx-interval " and "lldp tx-delay" affects the lldp pdu tx time, the larger value of the two configuration decides the TX interval, the configuration is viewed by using the "show lldp" command.

Example	ECS2020-10P(config)# lldp tx-interval 10 ECS2020-10P(config)# no lldp tx-interval

	Command	Description
Command	**show lldp**	Displays the LLDP information.

37.1.4   LLDP reinit-delay

Use this command to set the LLDP module re-initialization delay. Use the no form of the command to remove any delay.

lldp reinit-delay <1-10>

no lldp reinit-delay

	Parameter	Description
Parameter	<1-10>	Specifies the LLDP re-initial delay time in seconds.

Default	2s

Mode	Global configuration mode

Usage	Use the "lldp reinit-delay" command to configure the LLDP reinit-delay. The delay avoids LLDP generating too many PDUs if the port status toggles up and dow frequently. Thedelay starts to count when the port links status changes to down delaying sending any new LLDP pdu until the delay counts to zero . The configuration is displayed by using the "show lldp" command. Use the no form of this command to disable the LLDP reinit delay.

Example	ECS2020-10P(config)# lldp reinit-delay 5 ECS2020-10P(config)# no lldp reinit-delay

	Command	Description
Command	**show lldp**	Displays the LLDP information.

37.1.5   LLDP holdtime-multiplier

Use this command to set the LDDP holdtime-multiplier. Use the no form of the command to remove it.

lldp holdtime-multiplier <2-10>

no holdtime-multiplier

Parameter	Parameter	Description
	<2-10>	Specifies the LLDP hold time multiplier.

Default	4

Mode	Global configuration mode

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

Example	ECS2020-10P(config)# lldp holdtime-multiplier 3 ECS2020-10P(config)# no lldp holdtime-multiplier

Command	Command	Description
	show lldp	Displays the LLDP information.

37.1.6   lldp lldpdu

Use this command to configure the action to use for LLDP PDUs when LLDP is disabled.

lldp lldpdu (bridging | filtering | flooding)

Parameter	Parameter	Description
	bridging	When LLDP is globally disabled, LLDP packets are bridging (bridging lldp pdu to vlan number ports).
	filtering	When LLDP is globally disabled, LLDP packets are filtered(deleted)
	flooding	When LLDP is globally disabled, LLDP packets are flooded (forwarded to all interfaces)

Default	flooding

Mode	Global configuration mode

Usage	Use the "lldp lldpdu" command to configure the LLDP PDU handling behavior when LLDP is globally disabled. Note that if LLDP is globally enabled and per port LLDP receive status is configured to disabled, the received LLDP PDU would be dropped instead of using the global disable behavior. The configuration can be displayed by using the "show lldp" command.

Example	ECS2020-10P(config)# lldp lldpdu bridging

Command	Command	Description
	show lldp	Displays the LLDP information.

37.1.7 LLDP med

LLDP module re-initialization delay.

This command is only available through the CLI command interface.

lldp med
no lldp med

Parameter	Parameter	Description
	Null	Null

Default	lldp med

Mode	Interface configuration mode

Usage	Use "**lldp med**" to configure the LLDP MED enable status. If LLDP MED is enabled, the LLDP MED capability TLV and other selected MED TLV will be attached. The configuration can be shown by using the "show lldp med" command. Use the no form of this command to restore the behavior to default.

Example	ECS2020-10P(config-if-GigabitEthernet0/1)# lldp med
	ECS2020-10P(config-if-GigabitEthernet0/1)# no lldp med

Command		Description
Command	**show lldp**	Display lldp information

37.1.8   lldp med fast-start-repeat-count

Use this command to configure LLDP MED fast start repeat count.

lldp med f ast-start-repeat-count *<1-10 >*
   no lldp med fast-start-repeat-count

	Parameter	Description
Parameter	<1-10>	LLDP PDU fast start TX repeat counts.

Default	3

Mode	Global Configuration

Usage	Use the "lldp lldp med fast-start-repeat-count" command to configure LLDP bpdu fast start tx repeat. When a port link goes down, it will send an LLDP PDU immediately to notify a link partner, the number of LLDP PDU sent depends on the fast-start-repeat-count configuration. The LLDP PDU fast-start transmits in an interval of one second. The fast start behavior works whether LLDP MED is enabled or not. The configuration could be shown by using the command "show lldp med". Use the no form of this command to restore the behavior to default.

Example	`ECS2020-10P(config)# lldp med fast-start-repeat-count 3`

	Command	Description
Command	**show lldp med**	Displays the LLDP MED information.

37.1.9   **lldp med tlv-select**

Use this command to configure the selected MED TLVs for LLDP packets.

lldp med tlv-select *MEDTLV* [*MEDTLV*] [*MEDTLV*] [*MEDTLV*]
no lldp med tlv-select

	Parameter	Description
Parameter	MEDTLV	MED optional TLV. Available optional TLVs are network-policy, location, poe-pse, and inventory.

Default	network-policy TLV

Mode	Interface configuration mode

Usage	Use the "lldp med tlv-select" command to configure the LLDP MED TLV selection. Note that even if no MED TLV is selected, the MED capable TLV will be attached if LLDP MED is enabled. The configuration can be viewed by using the "show lldp med" command. Use the no form of this command to remove all selected MED TLV over the dedicated ports.

Example	ECS2020-10P(config-if-GigabitEthernet0/1)# lldp med tlv-select
	                                                network-policy
	ECS2020-10P(config-if-GigabitEthernet0/1)# no lldp med tlv-s
	                                                elect

	Command	Description
Command	**show lldp interfaces GigabitEthernet 0/1**	Display LLDP information

37.1.10   **lldp tlv-select**

Use this command to select TLVs from the optional list shown below. Use the no form of the command to set the TLV selected to default.

lldp tlv-select *TLV* [*TLV*] [*TLV*] [*TLV*] [*TLV*] [*TLV*] [*TLV*] [*TLV*]
no lldp tlv-select

Parameter		Description
Parameter	TLV	Select from the following optional LLDP optional TLV: **port-desc**, **sys-name**, **sys-desc**, **sys-cap**, **mac-phy**, **lag**, **max-frame-size**, or **management-addr**.

Default

No TLV selected

Mode

Interface configuration mode

Usage

Use the "lldp tlv-select" command to attach selected TLV to LLDP PDU. The configuration can be viewed using the "show lldp" command. Use the no form of this command to remove all selected TLV. This example selects the system description TLV and then set the TLV selected to default.

Example

```
ECS2020-10P(config-if-GigabitEthernet0/1)# lldp tlv-select sys-
                                           desc
ECS2020-10P(config-if-GigabitEthernet0/1)# no lldp tlv-select
```

	Command	Description
Command	**show lldp interfaces GigabitEthernet 0/1**	Displays the LLDP information.

37.1.11   **lldp tlv-select pvid**

Use this command to configure whether to attach or not the LLDP 802.1 PVID TLV. Use the no form of the command to set the attach state to default.

lldp tlv-select pvid (disable|enable)
no lldp tlv-select pvid

	Parameter	Description
Parameter	disable	Disable the LLDP 802.1pvid tlv attach state
	enable	Enable the LLDP 802.1pvid tlv attach state

Default	Enabled

Mode	Interface configuration mode

Usage	Use the "lldp tlv-select pvid" command to configure the 802.1 PVID TLV attached enable status. The configuration can be viewed using the "show lldp" command.

Example	`ECS2020-10P(config-if-GigabitEthernet0/1)# lldp tlv-select pvid`
	`                                    enable`
	`ECS2020-10P(config-if-GigabitEthernet0/1)# lldp tlv-select pvid`
	`                                    disable`

	Command	Description
Command	**show lldp interfaces GigabitEthernet 0/1**	Displays the LLDP information.

37.1.12   lldp tlv-select vlan-name

Use this command to configure whether to attach or not the LLDP VLAN name TLV. Use the no form of the command to set the attach state to default.

lldp tlv-select vlan-name add (add|remove) vlan-list
no lldp tlv-select

	Parameter	Description
Parameter	VLAN-LIST	VLAN List (e.g. 3,6-8): The range of VLAN ID is 2 to 4094

Default	no VLAN attached.

Mode	Interface configuration mode

Usage	Use the command "lldp tlv-select vlan-name" to add or remove VLAN names to the VLAN list of the 802.1 VLAN-NAME TLV. The configuration can be viewd by using the comamnd "show lldp".

Example	ECS2020-10P(config-if-GigabitEthernet0/1)# lldp tlv-select vlan-name add 1 ECS2020-10P(config-if-GigabitEthernet0/1)# no lldp tlv-select

Command	Command	Description
	show lldp interfaces GigabitEthernet 0/1	Displays the LLDP information.

37.1.13   lldp tx

Use this command to enable a port to work in transmission mode so that the device only sends LLDP packets that do not accept neighbor devices to send LLDP packets. Use the no form of the command to set the LLDP TX mode to default.

lldp tx

no lldp tx

Parameter	Parameter	Description
	Null	Null

Default	Disabled

Mode	Interface configuration mode

Usage	Use the "lldp tx" command to enable the LLDP PDU TX ability. The configuration can be viewed using the "show lldp" command.

| Example | ```
ECS2020-10P(config-if-GigabitEthernet0/1)# lldp tx
ECS2020-10P(config-if-GigabitEthernet0/1)# no lldp tx
``` |

	Command	Description
Command	**show lldp**	Displays the LLDP information

37.1.14   **LLDP tx-delay**

Use this command to specify a delay in seconds between successive LLDP transmissions. Use the no form of the command to set the delay to the default value.

lldp tx

no lldp tx

	Parameter	Description
Parameter	**<1-8192>**	Specifies the LLDP transmission delay in unit of seconds.

Default	2s

Mode	Global Configuration

Usage	Use the "lldp tx-delay" command to configure the delay in seconds between successive LLDP frame transmissions. The delay starts to count when any LLDP PDU is sent such as an LLDP PDU advertise routine, LLDP PDU content change, port link up, etc... The configuration can be viewing by using the "show lldp" command. Use the no form of this command to restore the delay to default value.

| Example | ```
ECS2020-10P(config)# lldp tx-delay 5
ECS2020-10P(config)# no lldp tx-delay
``` |

	Command	Description
Command	**show lldp**	Displays the LLDP information.

37.1.15   **show lldp**

Use this command to view the LLDP configuration.

show lldp

show lldp interfaces GigabitEthernet <1-10>

	Parameter	Description
parameter	<1-10>	GigabitEthernet device number

Default	Null

Mode	Privilege configuration mode.

Usage	Displays the LLDP configuration and port-related LLDP information.

<div>

Example

```
ECS2020-10P# 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
```

</div>

37.1.16   show lldp local-device

Use this command to view the LLDP local device configuration.

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

```
ECS2020-10P# show lldp  local-device
LLDP Local Device Information:
Chassis Type : Mac Address
 Chassis ID   : 00E0.4C01.7899
 System Name  : ECS2020-10P
 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)
```

37.1.17   show lldp med

Use this command to view the LLDP MED configuration.

show lldp

show lldp interfaces GigabitEthernet <1-10> med

parameter	Parameter	Description
	<1-10>	GigabitEthernet device number

| Default | – |

| Mode | Privilege configuration mode. |

| Usage | Use "**show lldp med** " command to display the LLDP MED configuration. |

Example	

```
ECS2020-10P# 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
```

37.1.18   show lldp neighbor

Use this command to view the LLDP neighbor information.

show lldp neighbor

Parameter	Parameter	Description
	Null	Null

| Default | – |

Mode	Privilege configuration mode.

Usage	Use the "show lldp neighbor" command to display the received neighbor LLDP PDU information. When LLDP PDUs are received on LLDP RX enable ports, the system stores the PDU information in a database until the time to live timer parameter of the PDU packets counts down to zero.

| Example | ```
ECS2020-10P# show lldp neighbor
          Port |   Device ID        |      Port ID        |
SysName       | Capabilities   |  TTL
---- + ---------------- + --------------- + ---------------- +
     -------------- + -----
          gi0/4 |    00E0.4C01.7899 |            gi0/1 |
          |                  |  100
``` |
|---|---|

37.1.19   show lldp statistics

Use this command to view the LLDP RX and TX statistics.

show lldp statistics

Parameter	Parameter	Description
	Null	Null

Default	–

Mode	Privilege configuration mode.

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

```
ECS2020-10P# show lldp statistics
   LLDP Global Statistics:
   Insertions : 1
   Deletions  : 0
   Drops      : 0
   Age Outs   : 0
```

Port	TX Frames Total	RX Frames Total	Discarded	Errors	RX TLVs Discarded	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

38 System Setting Commands

38.1 Basic System Settings

38.1.1 Management VLAN

Use the command below to configure the system management VLAN ID.

management-vlan vlan vlanid

Parameter

Parameter	Description
vlanid	The VLAN ID is In the range of <1-4094>

Default

1 (VLAN ID 1)

Mode

Global configuration mode

Usage

Use this command to configure the system management VLAN ID.

Example

```
ECS2020-10P(config)# management-vlan vlan 1
```

Command

Command	Description
show management-vlan	Displays the management vlan configuration.

38.1.2 ip dhcp

Use this command to configure the switch management IP address as dynamic.

ip dhcp

Parameter

Parameter	Description
Null	Null

Default

Null

Mode	Global configuration mode

Usage	Use this command to Configure the management IP address of the switch as dynamic.

Example	ECS2020-10P(config)# ip dhcp

	Command	Description
Command	**show ip**	Displays the switch management IP address information.

38.1.3   **Management ip**

Use the command below to configure the switch management IP address with a static address.

Ip address x.x.x.x

	Parameter	Description
Parameter	**Ip address**	Four fields in the range of <0-255> separated by decimal points.
	mask	Four fields in the range of <0-255> separated by decimal points.
	default-gateway	Four fields in the range of <0-255> separated by decimal points.

Default	192.168.2.10

Mode	Global configuration mode

Usage	Use this command to configure the switch management IP address.

Example	ECS2020-10P(config)# ip address 192.168.2.10 mask 255.255.255.0
	ECS2020-10P(config)# ip default-gateway 192.168.2.1

	Command	Description
Command	**show ip**	Displays the management IP address information.

38.1.4   location command

Use this command to configure the system location text string in the switch.

location

<table>
<tr><td rowspan="4">Parameter</td><td>Parameter</td><td>Description</td></tr>
<tr><td>**address**</td><td>Sets the host location address</td></tr>
<tr><td>**relation**</td><td>Sets the host location relation</td></tr>
<tr><td>**telephone**</td><td>Sets the host location telephone</td></tr>
</table>

Default	Null

Mode	Global configuration mode

Usage	Use this command to configure the system location

Example	`ECS2020-10P(config)# location address 1 Eiffel Flats Road,Kadoma,Zimbabwe`
	`ECS2020-10P(config)# location relation Neville Nkhoma`
	`ECS2020-10P(config)# location telephone +263 4 757 098`

<table>
<tr><td rowspan="2">Command</td><td>Command</td><td>Description</td></tr>
<tr><td>**show location**</td><td>Displays the system location information.</td></tr>
</table>

38.1.5   ipv6

Use this command to statically configure an IPv6 switch management address.

lpv6 address X:X::X:X
IPv6 gateway X:X::X:X

<table>
<tr><td rowspan="4">Parameter</td><td>Parameter</td><td>Description</td></tr>
<tr><td>**lpv6 address**</td><td>Up to 8 fields of 4 hexadecimal characters.</td></tr>
<tr><td>**prefix**</td><td><0-128></td></tr>
<tr><td>**lpv6 gateway**</td><td>X:X::X:X IPv6 gateway</td></tr>
</table>

Default	Null

Mode	Global configuration mode

Usage	Use this command to configure a static IPv6 address for the switch management IP address.

Example	ECS2020-10P(config)# ipv6 address 2001::5 prefix 64 ECS2020-10P(config)# ipv6 default-gateway 2001::1

Command

Command	Description
show ipv6	Displays the IPv6 management address information.

38.1.6   ipv6 DHCP command

Use the command below to configure the switch's IPv6 management address as dynamic.

ipv6 dhcp

Parameter	Parameter	Description
	Null	Null

Default	Null

Mode	Global configuration mode

Usage	Use this command to Configure the IPv6 address of the switch

Example	ECS2020-10P(config)# ipv6 dhcp

Command	Description
show ipv6	Displays the management IPv6 information

38.1.7   **Telnet**

Use the command below to enable the Telnet server on the switch.

ip telnet

Parameter

Parameter	Description
Null	Null

Default   Null

Mode   Global configuration mode

Usage   Use this command configure the system Telnet server to allow Telnet client connections to connect.

Example

```
ECS2020-10P(config)# ip telnet
ECS2020-10P(config)# no ip
telnet
```

38.1.8   Upload the switch log file

Use the command below to upload the system log file to a TFTP server.

copy flash://ram.log tftp://

Parameter

Parameter	Description
flash://	Specifies the ram.log file to be copied from flash.
tftp://	Specifies the TFTP server IP address for example: tftp://192.168.100.149

Default   Null

Mode   Privilege configuration mode.

Usage   Use this command to upload the switch log file to a TFTP server.

Example   `ECS2020-10P# copy flash://ram.log tftp://192.168.100.149/8`

38.1.9   system restart

Use the command below to restart the switch.

reload

Parameter

Parameter	Description
Null	Null

Default   Null

Mode   Privilege configuration mode.

Usage   Use this command to restart the system.

Example	ECS2020-10P# reload

38.1.10 change password

Use the command below to change the administrator (admin) user login password for browser access only.

username web xx password xx

	Parameter	Description
Parameter	**web**	Browser manager user name i.e. admin
	password	The specified user password.

Default	admin

Mode	Global configuration mode

Usage	Use this command to change the administrator user login password for the browser only.

Example	ECS2020-10P(config)# username web admin password admin

	Command	Description
Command	**show username**	Display username information

38.1.11 System Log

Use the command below to view the switch system log.

show logging buffered

Parameter	Parameter	Description
	Null	Null

Default	Null

Mode

Privilege configuration mode.

Usage

Use this command to display the system log.

Example

```
ECS2020-10P# 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
ECS2020-10P#
```

38.1.12 **ARP table**

Use the command below to display the ARP table.

show arp

	Parameter	Description
Parameter	**Null**	Null

Default	Null

Mode	Privilege configuration mode.

Usage	Use this command to display the system ARP table.

Example

```
ECS2020-10P# show arp
Address       HWtype   HWaddress       Flags Mask     Iface
192.168.100.149 ether   40:16:7E:B1:EB:6D    C                eth0
```

38.1.13   **Configure static MAC bindings**

Use the command below to configure the MAC addresses binded to specified ports and VLANs.

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	Specifies the MAC address to be binded.
vlan-id	Specifies the VLAN ID to bind the MAC address to.
port-id	Specifies the port number to bind the MAC address to.

Default

Null

Mode

Global configuration mode

Usage

When a MAC address is binded to a designated port as a static address, it will not have an aging time associated to it and thus not expire as a dynamic MAC address would.

Example

```
ECS2020-10P(config)# mac-address static 0001.7A55.E7D2 vlan 1
                     interfaces GigabitEthernet 0/1
ECS2020-10P(config)# no mac-address static 0001.7A55.E7D2 vlan 1
```

Command

Command	Description
show mac-address static	Displays the static mac-addresses comfigured in the switch.

38.1.14   **MAC address drop**

Use the command below to set a MAC address to be filtered out of a specified VLAN, then PDUs with the MAC address can not be forwarded through the VLAN on the switch. Use the no form of the 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

Null

Mode	Global configuration mode

Usage	The command is used to specify a MAC address of a specified VLAN to be filtered out. Any traffic with that MAC address on the specified VLAN will not be forwarded through the switch.

Example	ECS2020-10P(config)# mac-address static 0001.7A55.E7D5 vlan 1 drop

	Command	Description
Command	**show mac-address drop**	Displays the MAC addresses configured to drop.

38.1.15   configure mac-address aging-time

This command below configures the aging time of dynamic MAC addresses.

mac-address aging-time

	Parameter	Description
Parameter	**aging-time**	<10-630> the aging time in seconds.

Default	630s

Mode	Global configuration mode

Usage	The time set here will set the aging time for dynamic MAC addresses. If no PDUs with a MAC address appear during the aging time set then the MAC address will be flushed from the switch.

Example	ECS2020-10P(config)# mac-address aging-time 500

	Command	Description
Command	**show mac-address aging-time**	Displays the MAC-address aging-time value.

38.1.16 **show mac-address count**

Use this command to display the number of MAC addresses in the FDB table.

show mac-address count

	Parameter	Description
Paremeter	**count**	Displays the current number of MAC

Default — Null

Mode — Privilege configuration mode.

Usage — –

Example

```
ECS2020-10P# 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	Description
Command	**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

38.1.17 display bound mac-addresses

Use the command below to view information about all bound MAC address tables.

show mac-address [all | drop | dynamic | static | vlan *vlan-id* **{ dynamic | static } | interface** *port-number* **{ drop | dynamic | static }]**

	Parameter	Description
Parameter	**Show mac-address all**	Displays all the MAC addresses binded to the switch.
	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	Null

Mode	Privilege configuration mode.

Usage	Use the command in the example to view all MAC addresses binded to the switch.

Example	`ECS2020-10P# show mac-address all`

38.1.18 view the current configuration

Use the command below to view the current configuration (running configuration).

show running-config

	Parameter	Description
Parameter	**Null**	Null

| Default | Null |

| Mode | Privilege configuration mode. |

| Usage | Use this command to view the current configuration. |

| Example | ECS2020-10P# show running-config |

38.1.19   save configuration

Save the current (running) configuration of the switch to the startup configuration file.

write

	Parameter	Description
Parameter	**Null**	Null

| Default | Null |

| Mode | Privilege configuration mode. |

| Usage | Use this command to Save the current running configuration of the switch to the startup configuration file. |

| Example | ECS2020-10P# write |

38.1.20   **restore-defaults**

Use this command to restore the switch configuration to the factory default settings.

restore-defaults

Parameter

Parameter	Description
Null	Null

Default   Null

Mode   Privilege configuration mode.

Usage   Used to restore the switch configuration to the default settings.

Example   ECS2020-10P# restore-defaults

38.1.21　Firmware Upgrade

Use this command to upgrade the firmware

copy tftp://xxx.xxx.xxx.xxx/firmware_name.bix flash://image.bin

Parameter

Parameter	Description
flash://image.bin	Firmware filename in the switch file system – target for the copy command from TFTP server.
tftp://	Copy source firmware file from the tftp: file system.(tftp://serverip/filename)

Default　　Null

Mode　　Privilege configuration mode

Usage　　Use this command to upgrade the system firmware.

Example

```
ECS2020-10P# copy tftp://192.168.100.149/vmlinux.bix
flash://image.bin
```

38.1.22　Firmware backup

Use this command to backup the switch firmware to an offline TFTP server.

copy flash://image.bin tftp://xxx.xxx.xxx.xxx

Parameter	Description
flash://image.bin	Copy from the source flash file system. flash://image.bin flash://
tftp://	Copy to target TFTP server file system: file system.(tftp://serverip/filenameme

Parameter	

Default　　　　　Null

Mode　　　　　Privilege configuration mode

Usage　　　　　 Use this command to backup system

Example　　　　ECS2020-10P#copy flash://image.bin tftp://192.168.100.101

38.1.23 Uploading the startup configuration

Use the command below to upload the startup configuration file.

copy flash://startup-config tftp://xxx.xxx.xxx.xxx/filename

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

Default	Null

Mode	Privilege configuration mode

Usage	Use this command to export the current startup configuration of the system to a TFTP file server.

| Example | ```
ECS2020-10P# copy flash://startup-config
tftp://192.168.100.149/xxx
``` |

38.1.24 **Downloading a configuration file**

Use this command to download a switch configuration file from a TFTP file server.

copy tftp://xxx.xxx.xxx.xxx/config-file running-config

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

Default	–

Mode	Privilege configuration mode

Usage	Use this command import a new configuration file to the system running configuration.

Example	`copy tftp://192.168.100.149/config-file running-config`

38.1.25 **Memory information**

Use the command below to display the switch memory information.

show memory

Parameter

Parameter	Description
Null	Null

Default

Null

Mode

Privilege configuration mode

Usage

Use this command to display memory information.

Example

```
ECS2020-10P# 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
ECS2020-10P#
```

38.1.26　CPU information

Use the command below to display the switch CPU information.

show cpu

Parameter		
	Parameter	Description
	Null	Null

Default	Null

Mode	Privilege configuration mode

Usage	Use this command to Display CPU information.

| Example | ```
ECS2020-10P# show cpu

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

38.1.27   Flash information

Use the command below to display the switch flash information.

show flash

Parameter	Parameter	Description
	Null	Null

Default	Null

Mode	Privilege configuration mode

Usage	Use this command to display the flash information.

Example

```
ECS2020-10P# 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
```

38.1.28   Cable detection

Use the command below to display the switch cable information.

show cable-diag

Parameter	Parameter	Description
	Null	Null

Default

Null

Mode

Privilege configuration mode

Usage

Use this command to display the cable information.

Example

```
ECS2020-10P# 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
```

38.1.29 web-language

Use the command below to configure the switch web-language.

web-language en

Parameter		Description
Parameter	**en**	Management Browser will be in English
	zh_CN	Management Browser will be in Simplified Chinese
	zh_TW	Management Browser will be in Traditional Chinese

Default	Null

Mode	Global configuration mode

Usage	Use this command to configure the switch web-language to one of the available languages by inputting one of the three available language parameter options.

Example	`ECS2020-10P(config)# web-language en`

Command	Command	Description
	show web-language	Displays the switch web-language.

38.1.30   **Management static IPv4 address**

This command sets the static IPv4 management address of the switch.

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

```
ECS2020-10P(config)# ip address 192.168.2.10 mask 255.255.255.0
ECS2020-10P(config)# ip default-gateway 192.168.2.1
```

Command

Command	Description
show ip	Displays the management ip address information.

38.1.31 **show version**

Use this command to display the current firmware version utilized by the switch.

show version

Parameter	Parameter	Description
	Null	Null

Default

Null

Mode

Privilege configuration mode

Usage

Views the current firmware version.

Example

```
 ECS2020-10P Operating System Software
ECS2020-10P system image file (system-firmware.bin), version
17257, Compiled   on Jun 15 2017 - 18:52:19
Copyright@2016 ECS2020-10P Systems, Inc.
ECS2020-10P 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
```

38.1.32　**DHCP server enable**

Use this command to enable the switch's DHCP server.

Ip dhcp server

parameter	Parameter	Description
	Null	Null

Default	Disabled

Mode	Global configuration mode

Usage	Enables the DHCP server.

Example	ECS2020-10P(config)# ip dhcp server ECS2020-10P(config)# no ip dhcp server

Command	Command	Description
	show ip dhcp server	Displays the DHCP server information.

38.1.33   **DHCP server configuration**

Use the command below to configure the switch DHCP server.

ip dhcpserver

parameter

Parameter	Description
pool	IP Pool is A.B.C.D-E.F.G.H,start to end IP address range separated by a dash.

Default

Null

Mode

Global configuration mode

Usage

Sets the DHCP server with an IP address range to assign clients.

Example

```
ECS2020-10P(config)# ip dhcpserver pool 192.168.2.100-
192.168.2.200
```

Command

Command	Description
show ip dhcp server	Displays the DHCP server informa

38.1.34   **Show fiber-transceiver**

Use this command to view the fiber port transceiver signal information such as temperature, voltage, power etc…

This command is only available through the CLI command interface.

show fiber-transceiver interfaces GigabitEthernet port-id

parameter

Parameter	Description
port-id	The fiber port selection.

Default   None

Mode   Privilege configuration mode

Usage   Use this command to view the fiber port transceiver signal information.

Example
```
ECS2020-10T# show fiber-transceiver interfaces gig 0/9
Port  | Temperature | Voltage    | Current     | Output power | Input power    |
      OE-Present | LOS
            | [C]         | [Volt]      | [mA]         | [mWatt]       | [mWatt]
      |            |
================================================================
            ===================
gi0/9 | 41.15  (OK) | 3.33  (OK) | 20.50  (OK) | 0.32  (OK)   | 0.00  (E)
 | Insert     | Loss

Temp         - Internally measured transceiver temperature
Voltage      - Internally measured supply voltage
Current      - Measured TX bias current
Output Power - Measured TX output power in milliWatts
Input Power  - Measured RX received power in milliWatts
OE-Present   - SFP Presetn or Not Present
LOS          - Loss of signal
N/A - Not Available, N/S - Not Supported, W - Warning, E - Error
```

38.1.35 **Show fiber-info**

Use this command to view the fiber port and fiber information such as fiber mode, baud rate, fiber type etc…

show fiber-info interfaces GigabitEthernet port-id

parameter	Parameter	Description
	port-id	Chose the fiber port to view info

Default   None

Mode   Privilege configuration mode

Usage   Used to view the fiber port and fiber type information.

Example
```
ECS2020-10T# show fiber-info interfaces gig 0/9
         fiber information
         Connector Type       : LC
         Fiber Type           : Single Mode
         Eth Compliance Codes : 1000BASE-LX
         Baud Rate            : 1300Mbd
         Wave Length          : 1310nm
         Vendor OUI           : 00-00-45
         Vendor Name          : EDGE-CORE
         Vendor PN            : ET4202-LX
         Vendor Rev           :
         Vendor SN            : F171020154
         Date Code            : 17-03-07
```

39 Static Route

39.1   Configure commands

39.1.1   Turn off switch management VLAN

management-vlan disable

	Parameter	Description
Parameter	**disable**	Disable management-vlan

Default

Mode

Global configuration mode

Usage

Use this command to turn off the switch management VLAN.

Example

```
ECS2020-28P(config)# management-vlan disable
```

	Command	Description
Command	**show management-vlan**	Display management VLAN information

39.1.2 Interface VLAN IP

ip address x.x.x.x

	Parameter	Description
Parameter	**disable**	The int is in the range <0-255>
	mask	The int is in the range <0-255>
	Default-gateway	The int is in the range <0-255>

Default

Mode Interface VLAN configuration mode

Usage Use this command to configure the interface VLAN IP.

Example
```
ECS2020-28P(config)# interface vlan 100
ECS2020-28P(config-if-vlan)# ip add 20.1.1.1 mask
255.255.255.0
```

	Command	Description
Command	**show interfaces vlan ip**	Display management IP information

39.1.3 **Configure Static Route**

route-entry ip add x.x.x.x

	Parameter	Description
Parameter	**ip address**	The int is in the range <0-255>
	netmask	The int is in the range <0-255>
	gw	The int is in the range <0-255>

Default	

Mode	global configuration mode

Usage	Use this command to configure a static route.

Example	`ECS2020-28P(config)#route-entry add ip 30.1.1.0 netmask` `255.255.255.0 gw 20.1.1.20`

	Command	Description
Command	**show staticroute**	Display static route information

40 MVR

40.1.1 configure mvr

<table>
<tr><th>Parameter</th><th></th><th>Description</th></tr>
<tr><td rowspan="3">Parameter</td><td>vlan</td><td>The int is in the range <1-4094></td></tr>
<tr><td>mode</td><td>compatible or dynamic</td></tr>
<tr><td>group</td><td>IPV4 multicast address</td></tr>
</table>

Default	

Mode	global configuration mode

Usage	MVR function solves the problem that the receiver of multicast message is in a different VLAN.

Example	`ECS2020-28T(config)# mvr`
	`ECS2020-28T(config)# mvr vlan 30`
	`ECS2020-28T(config)# mvr mode compatible`
	`ECS2020-28T(config)# mvr group 239.1.1.1 128`

<table>
<tr><th>Command</th><th>Command</th><th>Description</th></tr>
<tr><td></td><td>show mvr</td><td>Display the MVR state</td></tr>
</table>

40.1.2 configure source port

<table>
<tr><th>Parameter</th><th></th><th>Description</th></tr>
<tr><td rowspan="2">Parameter</td><td>mode</td><td>compatible or dynamic</td></tr>
<tr><td>native vlan</td><td>MVR VLAN ID</td></tr>
</table>

Default	

Mode	configuration source port

Usage	Port connected to the upper end.

Example	ECS2020-28T(config)# interface GigabitEthernet 0/1 ECS2020-28T(config-if-GigabitEthernet0/1)# switch mode hybrid ECS2020-28T(config-if-GigabitEthernet0/1)# switch hybrid vlan 30 tagged ECS2020-28T(config-if-GigabitEthernet0/1)# switch hybrid native vlan 30 ECS2020-28T(config-if-GigabitEthernet0/1)# mvr immediate ECS2020-28T(config-if-GigabitEthernet0/1)# mvr type source

Command	Command	Description
	show mvr interface	Display source

40.1.3 configure receiver port

Parameter	Parameter	Description
	mode	Access port
	vlan	All VLANs except MVR VLAN ID

Default	

Mode	configuration receiver port

Usage	Connect the lower port.

Example	ECS2020-28T(config)# interface GigabitEthernet 0/5 ECS2020-28T(config-if-GigabitEthernet0/1)# switch access vlan 10 ECS2020-28T(config-if-GigabitEthernet0/1)# mvr immediate ECS2020-28T(config-if-GigabitEthernet0/1)# mvr type receiver

Command	Command	Description
	show mvr	Display the MVR state

40.1.4　configure static mvr multicast group

	Parameter	Description
Parameter	port	Receiver port
	group	MVR group

Default

Mode

Usage　　　When MVR mode is compatible mode, static group needs to be configured.

Example
```
ECS2020-28T(config)# mvr vlan 30 group 239.1.1.1 interfaces
GigabitEthernet 0/5
```

	Command	Description
Command	**show mvr members**	Display MVR multicast groups