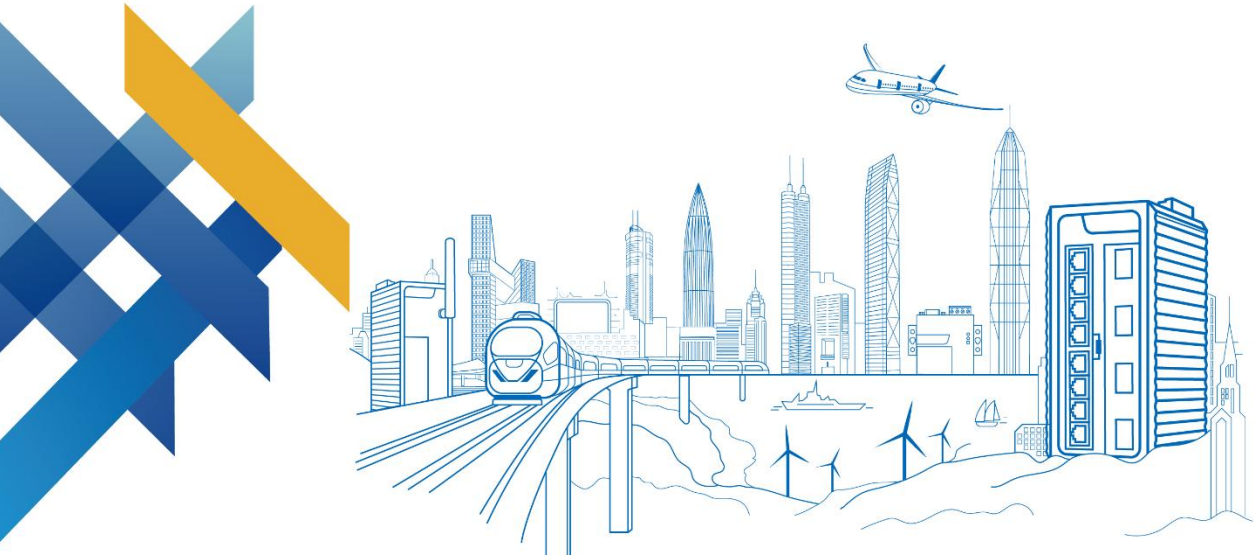


8 100M M12

Layer 2 Managed Industrial Ethernet Switch

CLI User Manual

Document Version: 02

Issue Date: 7/26/2023

Preface

Switch CLI user manual has introduced:

- CLI configuration

Audience

This manual applies to the following engineers:

- Network administrators responsible for network configuration and maintenance
- On-site technical support and maintenance personnel
- Network engineers

Text Format Convention

Format	Note
" "	Words with “” represent the interface words. Fox example: “Port number”.
>	Multi-level path is separated by ">". Such as opening the local connection path description: Open "Control Panel> Network Connection> Local Area Connection".
Light Blue Font	It represents the words clicked to achieve hyperlink. The font color is as follows: ‘Light Blue’.
About this chapter	The section ‘About this Chapter’ provides links to various sections of this chapter, as well as the corresponding principles/operations section of this chapter.

Icon Convention

Format	Note
Notice	Reminder of precautions in the operation, improper operation may result in data loss or equipment damage.
Warning	Pay attention to the notes on the mark, improper operation may cause personal injury.
Note	Make necessary supplements and explanations for the description of operation content.

Format	Note
 Key	Configuration, operation, or tips for device usage.
 Tips	Pay attention to the operation or information to ensure success device configuration or normal working.

Port Convention

The port number in this manual is only an example, and does not represent the actual port with this number on the device. In actual use, the port number existing on the device shall prevail.

Revision Record

Version No.	Revision Date	Revision Description
01	7/26/2023	Product release

Contents

1 Log in to the CLI Configuration Interface

1.1 Login to the Switch via Console Port

The PC can log in to the command line interface of the device by connecting to the Console port.

Operation Steps

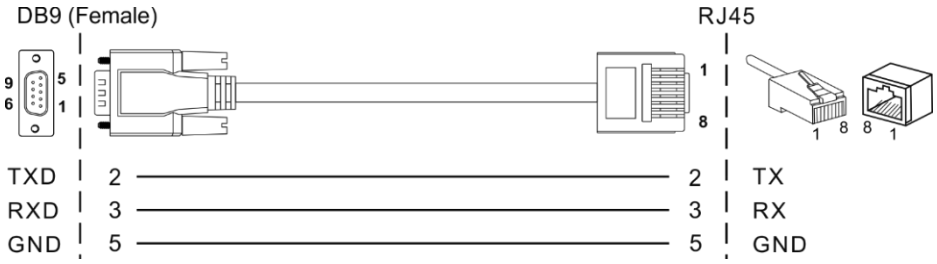
Step 1 Connect the serial port of the computer to the Console port of the device through the serial port line to establish a local configuration environment, as shown in the topology diagram below.

1 Connect DB9 at one end of serial port line to RS-232 serial port of PC.

2 Connect the RJ45 on the other end of the serial line to the Console port of the device.

Note:

Diagram of internal connection line of serial port line/communication cable is shown below.

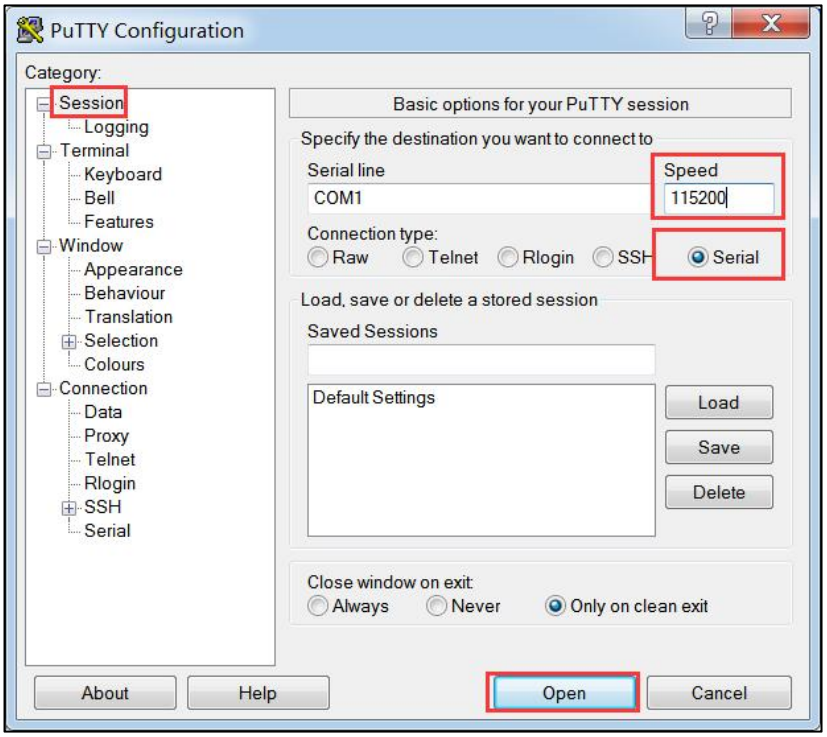


Step 2 Open the terminal simulation software on the PC, create a new connection, and set the interface and communication parameters of the connection. (Using PuTTY as an example here.)

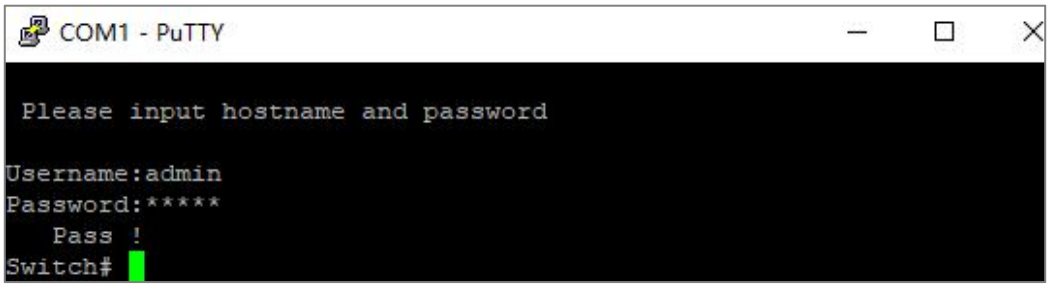
1 Open PuTTY and click “Session” on the menu bar.

2 In the "Basic options for your PuTTY session" input box on the right, do the following:

- Select "Connection type" to "Serial".
- Enter "115200" in the "Speed" text box;
- Click “Open”.



3 The "COM1-PuTTY" command line edit dialog box pops up. Press enter key to enter user name and password. The user name and password of the device are both admin by default, as shown below.



Step 3 End.

1.2 Login to the Switch via Telnet

Through Telnet client login to the command line interface of the device, the client and the device should meet the following requires:

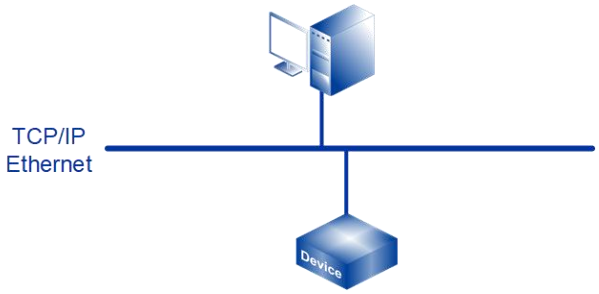
1 Configure the IP address of the switch correctly.

2 If the Telnet client and the device are in the same LAN, the IP address of the device and the client must be configured in the same network segment. Otherwise, the route between Telnet client and device must be accessible.

User can log in to the switch device through the Telnet client and configure the device if the two requires above are met.

Operation Steps

Step 1 As shown in the figure below, set up the configuration environment to connect the Ethernet port of the computer to the Ethernet port of the device through the LAN.

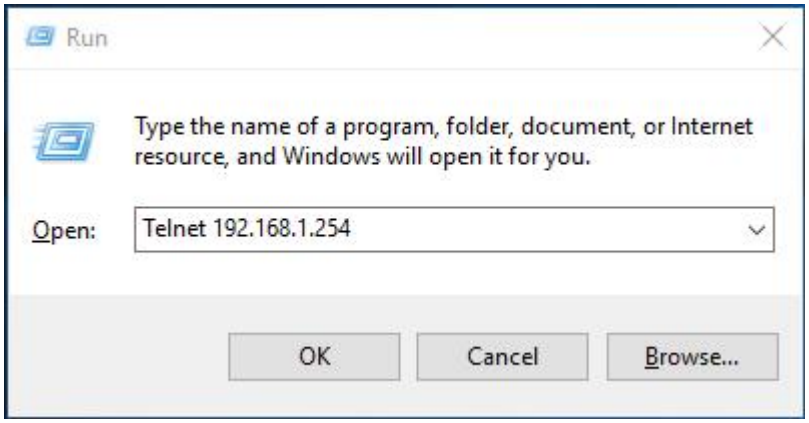


Step 2 Run the Telnet client on the computer and input the administrative IP address of the Ethernet port connected the computer to the switch, as shown in the figure below.

3 Press "Win+R" to pop up the running window;

4 Enter “Telnet+ space + device IP address” in the “Open (O)” input box.

5 Click "OK” button.

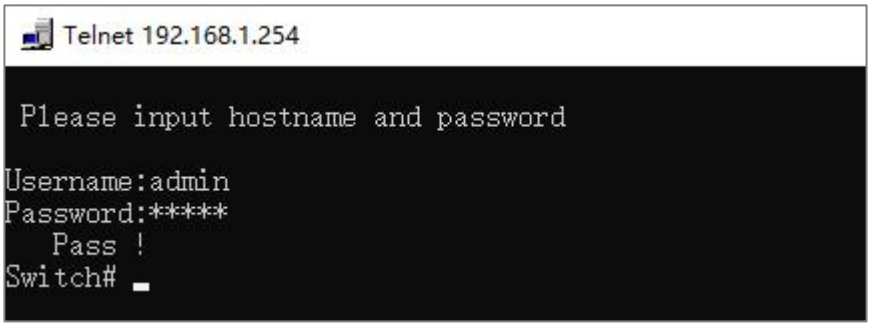


Note:

- Using the command line prompt interface of Win7/Win8/Win10 and other operating systems to configure the device needs to enable Telnet client in advance, user can check and enable Telnet client in the Windows function window under the path of "Control Panel > Program and Function > Enable or Disable Windows function", if Telnet client has been enabled, user can ignore this instruction.
- If the computer operating system does not support Telnet clients, a third party software PuTTY can be used as a Telnet client.
- The default IP address of the device is “192.168.1.254”.

Step 3 Click “OK” to start the Telnet connection request.

Step 4 After successful connection, enter the correct user name and password according to the interface prompt, as shown in the figure below.



Note:

The default user name and password of the device are “admin”.

Step 5 End.

1.3 Command Line Interface

The switch provides a command line interface and configuration commands to users for easy configuration and management. The command line interface has the following features:

- Local configuration through the Console port;
- Support history command save, 10 can be saved. Saved history command information can be selected through the upper and lower arrow key.
- User can enter “help” or “?” to get help;
- Command input supports Tab key intelligent completion;
- The command line interpreter adopts an incomplete search method for keywords, and the user only needs to type conflict-free keywords, for example, for the config command, just type conf.

1.3.1 Command Line Online Help

CLI provides the following kinds of online help:

- Complete help;
- Partial help.

Complete Help

1) In any view, enter <?> to get all commands and their simple description in this view.

```
Switch# ?
  List                    --List commands of current menu
  Help                    --Help commands of current menu
  Quit                    --Quit from CLI
  Exit                    --Exit from current menu
  Reboot                  --Reboot switch
......
```

2) Enter a command followed by "?" separated by space, all keywords and their simple description would be listed if this location has keywords.

```
Switch(information)# show ?
  mac                    --Device MAC Address
  version                 --Device version
  others                  --Device type,name,etc
```

Partial Help

1)Enter a character string followed by <?>, all character string that start with this character string will be listed.

```
Switch# M?
  Mirror          <dir>    --Enter port mirror menu
  Manage          <dir>    --Enter system manage menu
  Multicast        <dir>    --Enter static multicast filters menu
```

2) Enter first several letters of the command and press <Tab>, if regard the first keyword of the entered letters as unique, then complete keyword would be displayed.

```
Switch# inf press <Tab>
Switch# information
```

1.3.2 Command Line Common Error

All commands typed by the user, if they pass the syntax check will be executed correctly; otherwise, error messages are reported to the user. Common error messages are shown in the table below.

English Error Message	Cause of Error
Invalid Command	No command found

English Error Message	Cause of Error
	No keyword found
	Parameter type error
	Parameter value out of range
Imcomplete Command	The input command is incomplete
Too many parameters	Too many parameters

1.3.3 History Command

Command line interface provides features like Doskey, which can save history Command entered by user automatically. User can call history Commands saved by command line interface at any time and execute them repeatedly.

Access history command:

Operation	Key	Result
Visit last history command	The up cursor key<↑>	If there are earlier history commands, the last history command would be fetched
Visit next history command	The down cursor key<↓>	If there are later history commands, the next history command would be fetched

1.3.4 Common Command

The regular command is the most frequently used command. For the convenience of operation, the command List, Help, Quit, Exit and Reboot is arranged in all modes.

Common Command:

Operation	Command	Note
Lists the names of command in this mode	List	Execute in any mode
Lists the names of command and their help information in this mode	Help	Execute in any mode
From the current mode back to the login interface	Quit	Execute in any mode
From the current mode back to the last mode, can not back to login interface	Exit	Execute in any mode

Operation	Command	Note
Reboot the device	Reboot	Execute in any mode

Configuration Instance

1) Returns the previous layer from port configuration mode, enter the following bold font command and press enter key.

```
Switch(Port)#  exit
Switch#
```

2) View the command format name in VLAN setting mode, enter the following bold font command and press enter key.

```
Switch(VLAN)# list
  List
  Help
  Quit
  Exit
  Reboot
  Show vlantype
  Enable
  Show_IsolateList
  Delete_IsolateList
  Config
  PVLANSetting    <dir>
  QVLANSetting    <dir>
```

3) Restart the settings in the information view, enter the following bold font command and press enter.

```
Switch(information)# reboot
Please waiting........
Please input hostname and password
Username:
```

2 Port Configuration Command

Enter port configuration view.

Operation	Command	Note
Enter port configuration view	**Port**	Execute in the system view

```
Switch# Port
Switch(Port)#
```

2.1 Port Information Display

Port state and configuration information

Operation	Command	Note
Port state information display	**Show state** <portlist>	<portlist>: 1,2,3,……or all
Port configuration information display	**Show config** <portlist>	<portlist>: 1,2,3,……or all;

Configuration Instance

1) Display state information of port 3.

```
Switch(Port)# show state 1
         Speed    Port_status     Link_status    Interface_type
  port 1  100M        FULL           LOS             TX
```

2) Display configuration information of port 3.

```
Switch(Port)# show config 1
         Speed         Mode         Port_status       Flow_contorl
Interface_type
```

```
port 1  Auto      FULL     Enable        Disable          TX
```

2.2 Port Enable

The user can enable or disable ports using the following commands. By default, the port is enabled.

Operation	Command	Note
Port enable	**switch** <portlist> {enable|disable}	<portlist>: 1,2,3,……or all；

Configuration Instance

Disable port 1.

```
Switch(Port)# switch 1 disable
  [OK]
```

2.3 Port Flow Control

Enable or disable port flow control.

Operation	Command	Note
Enable port flow control	**Flow-con** <portlist> enable	<portlist>: 1,2,3,……or all；
Disable port flow control	**Flow-con** <portlist> disable	<portlist>: 1,2,3,……or all；

Configuration Instance

Enable port 2 flow control

```
Switch(Port)# flow-con 2 enable
  [OK]
```

2.4 Port Speed and Working Mode

Configure the speed and duplex state of the port

Operation	Command	Note
Configure the speed and duplex mode of the port	**Mode** <portlist> <rate>	<portlist>: 1,2,3,……or all <rate>: • 10h: 10Mbps half duplex; • 10f: 10Mbps full duplex; • 100h: 100Mbps half duplex; • 100f: 100Mbps full duplex; • Auto: port rate auto-negotiation

Configuration Instance

Configure the speed of Port 3 to 100Mbps and working mode to half duplex.

```
Switch(Port)# mode 3 100h
  [OK]
```

2.5 Port Mdi/Mdix Self-Adaption

Configure straight-through line and cross line self-adaption.

Operation	Command	Note
Configure MDI/MDIX self-adaptation	**AutoMDI <portlist> <mode>**	<portlist>: 1,2,3,……or all; **<mode>:** • 0: self-adaption • 1:MDI • 2:MDIX

Configuration Instance

Configure Port 3 self-adaptive MDI/MDIX twisted pair.

```
Switch(Port)# autoMDI 3 0
  [OK]
```

3 Bandwidth Configuration Command

Enter bandwidth management view

Operation	Command	Note
Enter bandwidth management view	**Bandwidth**	Execute in the system view

```
Switch# bandwidth
Switch(Bandwidth)#
```

3.1 Bandwidth Configuration

Ingress bandwidth and egress bandwidth configuration commands.

Operation	Command	Note
Limit package type	**Config intype** <portlist> {0|1|2|3}	<portlist>: 1,2,3,……or all； 0-1-2-3 • 0: all frames; • 1: broadcast, multicast and flood unicast data frames; • 2: broadcast and multicast packages only; • 3: broadcast package only

Operation	Command	Note
Configure ingress bandwidth	**Config inrate** <portlist> <low_bw> <normal_bw> <medium_bw> <high_bw>	<portlist>: 1,2,3,……or all； <low_bw> : low priority queue bandwidth (128k, 256k, 512k, 1M, 2M, 4M, 8M, 16M, 32M, 64M, 128M, 256M, 0 means unlimited); <Normal_bw>: bandwidth of normal priority queue,1-2 times of lower priority bandwidth; <medium_bw>: bandwidth of medium priority queue, 1-2 times of ordinary low priority bandwidth; <high_bw>: bandwidth of high priority queue, 1-2 times medium priority bandwidth
Configure egress bandwidth	**Config egrate** <portlist> <bandwidth>	<portlist>: 1,2,3,……or all； <bandwidth> : 128k, 256k, 512k, 1M, 2M, 4M, 8M, 0 means unlimited

Configuration Instance

Set the restrict packet types of port 1 to broadcast packets only, low priority to 128K, normal priority to 256K, medium priority to 512K, high priority to 1M.

```
Switch(Bandwidth)# config intype 1 3
  [OK]
Switch(Bandwidth)# config inrate 1 128k 256k 512k 1m
  [OK]
Configure the egress bandwidth of port 1 as unlimited.
Switch(Bandwidth)#  config egrate 1 0
 [OK]
```

3.2 Bandwidth Display

Display commands of ingress bandwidth and egress bandwidth.

Operation	Command	Note
View limit package type	**Show intype** <portlist>	<portlist>: 1,2,3,……or all；
View ingress bandwidth information	**Show inrate** <portlist>	<portlist>: 1,2,3,……or all；
View egress bandwidth information	**Show egrate** <portlist>	<portlist>: 1,2,3,……or all；

Configuration Instance

Display ingress bandwidth, egress bandwidth, and limited packet types of port 1.

```
Switch(Bandwidth)# show inrate 1
  port 1 egress bandwidth:  unlimited
Switch(Bandwidth)# show egrate 1
  port 1 egress bandwidth:  unlimited
Switch(Bandwidth)# show intype 1
  port 1  Limit packets:  Broadcast only
```

4 Statistics Configuration Command

Enter port statistics configuration view.

Operation	Command	Note
Enter port statistics view	**Statistics**	Execute in the system view

```
Switch# statistics
Switch(Statistics)#
```

4.1 Port Statistics Configuration

Port statistics configuration.

Operation	Command	Note
Count the frame number and type of ports	**Show frames** <port>	<portlist>: 1,2,3,……or all；
Clean up the frame count	**Clean frames**	Execute in port statistics view
Displays information of the MAC address table	**Show mac**<port>	<port>: • 0: all ports • >: 1, 2, 3, …… or all • 11: CPU port

Configuration Instance

Count the frame number of port 1.

```
Switch(Statistics)# show frames 1
  InGoodOctets   20887291          OutOctets     3177472
  InbadOctets    0                OutUnicast    4505
  InUnicasts     5138             OutBroadCasts  31
  InBroadcasts   250416           OutMulticasts  1926
```

```
InMulticasts   15860              OutPause      0
InPause        0                  Excessive     0
InUndersize    0                  Collisions    0
InFragments    0                  Deferred      0
InOversize     0                  Single        0
InJabber       0                  Multiple      0
IN RxErr       0                  OutFCSErr     0
INFCSErr       0                  Late          0
```

5 IGMP Configuration Command

Enter IGMP snooping view

Operation	Command	Note
Enter the multicast filter configuration view	**IGMP Snooping**	Execute in the system view

```
Switch# igmp
Switch(Igmp)# ?
```

5.1 Igmp Snooping Configuration Command

IGMP-snooping configuration

Operation	Command	Note
Configure IGMP snooping enable	**Set IGMP** {enable|disable}	{enable|disable}: • Enable • Disable
Configure IGMP query enablement	**Set query** {enable|disable}	{enable|disable}: • Enable • Disable
Configure the IGMP query interval	**Query** <time>	<time>:60-1000s
Display IGMP information	**Show MACIist**	Execute under the IGMP snooping view

Configuration Instance

Enable IGMP snooping and IGMP query, query interval set to 125s and display IGMP information.

```
Switch(MultiFilter)# set igmp enable
  [OK]
```

```
Switch(MultiFilter)# set query enable
  [OK]
Switch(MultiFilter)# Query 125
  [OK]
Switch(MultiFilter)# show MAClist
  IGMP Snooping query time 125 seconds
  [  1] MAC List: 01-00-5E-00-00-FB  Port: 1
```

6 LLDP Configuration Command

Enter LLDP View

Operation	Command	Note
Enter LLDP configuration view	**LLDP**	Execute in the system view

```
Switch# lldp
Switch(Lldp)#
```

6.1 Lldp Enablement

Enable/disable LLDP configuration command

Operation	Command	Note
Enable/disable LLDP	**Lldp** {enable|disable}	{enable|disable}: • Enable • Disabled

6.2 Display Lldp Information

Display LLDP information

Operation	Command	Note
Display LLDP configuration	**Show**	Execute in LLDP configuration view

6.3 Lldp Configuration

LLDP configuration command

Operation	Command	Note
Send LLDP configuration	**Config** <TxInterval> <TxHold> <TxDelay> <TxReinit>	<TxInterval>:Tx Interval [5-32768] <TxHold>:Tx Hold [2-10] <TxDelay>:Tx Delay [1-8192 and <= TxInterval/4] <TxReinit>:Tx Reinit [1-10]
Port configuration	**Set** <portlist> {0|1|2|3}	<portlist>: 1,2,3,……or all 0-1-2-3 • 0:Disabled • 1:Rx Tx • 2:Tx only • 3:Rx only
Display neighbor information	**Print neighbors**	Execute in LLDP configuration view
Display local LLDP statistics	**print local**	Execute in LLDP configuration view
Clear local LLDP statistics	**clear**	Execute in LLDP configuration view

7 VLAN Configuration Command

Enter VLAN configuration view:

Operation	Command	Note
Enter VLAN configuration view	**Vlan**	Execute in the system view

```
Switch# vlan
Switch(VLAN)#
```

7.1 Vlan Type Configuration and Display

VLAN type configuration and display commands.

Operation	Command	Note
Enter VLAN information view	**Show vlantype**	Execute in VLAN view
Select the VLAN type	**Enable {0|1}**	{0|1}: • 0: port-based VLAN • VLAN of 1:802.1Q

Configuration Instance

Enable port VLAN and display the VLAN type.

```
Switch(VLAN)# enable 0
  Based on port VLAN is enable!
  [OK]
  Tip: This configuration will be validated after restarting
Switch(VLAN)# show vlantype
  Based on port VLAN is enable!
```

7.2 Port Isolation

Configure port isolation.

Operation	Command	Note
Configure isolated port	**Config** <isolatelist> <portlist>	<Isolatelist>: isolation group 1, 2, 3, 4, 5 <portlist>: port 1,2,3,……or all
Delete isolated entry	**Delete_IsolateList** <isolatelist>	<Isolatelist>: isolation group 1, 2, 3, 4, 5
Display isolated entry	**Show_IsolateList** <isolatelist>	<Isolatelist>: isolation group 1, 2, 3, 4, 5

7.3 Port-based Vlan

Enter port VLAN view.

Operation	Command	Note
Port VLAN view	**PVLANSetting**	Execute in VLAN view

```
Switch(VLAN)# PVLANSetting
Switch(PVlan)#
```

Port VLAN configuration

Operation	Command	Note
Add Vlan	**Add** <item> <portlist>	<item> : VLAN ID range 1-4094 <portlist>: 1,2,3,……or all
Delete VLAN	**Delete** <items>	<items>: 1, 4, 5-4094 or all
View Vlan information	**Show vlan**<items>	<items>: 1, 4, 5-4094 or all

Configuration Instance

Add VLAN 2 with port members of port 2 and port 3.

```
Switch(PVlan)# add 2 2,3
  [OK]
```

7.4 Ieee802.1q Vlan

Enter 802.1Q VLAN view

Operation	Command	Note
802.1Q Vlan view	**QVLANSetting**	Execute in VLAN view

```
Switch(Vlan)# qVLANSetting
Switch(QVlan)#
```

802.1Q VLAN Configuration

Operation	Command	Note
Set port type	**Config type** <portlist> {Trunk|Access}	<portlist>: 1,2,3,……or all; {Trunk|Access}: • Trunk: keep VID unchanged • Access: replace VID with port default VID
Pvid setting	**config pvid** <portlist> <pvid>	<portlist> : 1, 2, 3... or all, 0 represents the CPU port <pvid>:1-4094
Add Vlan	**Add** <vid> <portlist> <typelist>	<vid>:1-4094 <portlist> : 1, 2, 3... or all, 0 represents the CPU port <typelist>: • M:UnModified • U:UnTagged • T:Tagged
Delete VLAN	**Delete** <vidlist>	<Vidlist>: 1-4094 or all
View vlan information	**Show vlan** <vidlist>	<Vidlist>: 1-4094 or all
View port pvid	**Show pvid** <portlist>	<portlist> : 1, 2, 3... or all, 0 represents the CPU port
View port type	**Show type** <portlist>	<portlist> : 1, 2, 3... or all, 0 represents the CPU port

Configuration Instance

Add VLAN 3, port 2-3, member type UnModified.

```
Switch(QVlan)# add 3 2-3 M
  VID       :    3
  Port_cpu   : ----
  port 1     : ----
  port 2     : UnModified
  port 3     : UnModified
…
  [OK]
```

8 QoS Configuration Command

Enter QoS configuration view.

Operation	Command	Note
Enter QoS configuration view	**QoS**	Execute in the system view

```
Switch# QoS
Switch(QoS)#
```

8.1 Qos Queue Mechanism Configuration

QoS queue mechanism configuration command.

Operation	Command	Note
QoS Queue Mechanism Configuration	**Queuingm** {0|1}	{0|1}: • 0: weighted average scheduling algorithm • 1: strict priority scheduling algorithm

Configuration Instance

QoS queue mechanism was set as weighted average scheduling algorithm (8:4:2:1).

```
Switch(QoS)# queuingm 0
  [OK]
```

8.2 Tos and Cos Enablement

ToS and CoS enable configuration command.

Operation	Command	Note
ToS and CoS enable	**Check** <portlist> {0|1|2|3}	<portlist>: 1,2,3,……or all；0-1-2-3 • 0:Forbid • 1:use ToS • 2:use Cos • 3:all use

Configuration Instance

1) Enable the Cos of port 1, 3, 4 and 6.

```
Switch(QoS)# Check 1,3,4,6 1
  [OK]
```

2) Enable ToS of port 2, 3, 5 and 6.

```
Switch(QoS)# Check 2,3,5,6 2
  [OK]
```

8.3 Tos/Cos Value Mapping

The user can configure the ToS/CoS value mapping using the following command.

Operation	Command	Note
CoS value mapping configuration	**Config cos** <coslist> <classlist>	<coslist> : CoS mapping value, 0, 1, 2-7 <classlist>: • L:low • N:normal • M:medium • H:high
ToS value mapping configuration	**Config tos** <dscplist> <classlist>	<dscplist> : ToS mapping value, 1, 2, 3-64 <classlist>: • L:low • N:normal • M:medium • H:high

Configuration Instance

1) Set 0, 2, 5, and 7 of CoS value to correspond to the priority queues of Low, Normal, Medium, and High respectively.

```
Switch(QoS)# config cos 0,2,5,7 l,n,m,h
```

```
 CoS value:0   priority:Low
 CoS value:2   priority:Normal
 CoS value:5   priority:Medium
 CoS value:7   priority:High
```

2) Set 1,17,42 and 62 of Dscp values to correspond to the priority queues of Low, Medium, High and Normal.

```
Switch(QoS)# config dscp 1,17,42,62 l,m,h,n
 DSCP(  1):Low              DSCP(17):Medium         DSCP(42):High
DSCP(62):Normal
```

8.4 Default Port Priority Configuration

The user can configure the default port priority using the following command.

Operation	Command	Note
Default Port Priority Configuration	**Default priority** <portlist> <0-7>	<portlist>: 1,2,3,……or all； <0-7> : port priority

Configuration Instance

Set the default priority of port 1 to 3.

```
Switch(QoS)# default priority 1 3
  [OK]
```

8.5 Display Qos Configuration Information

The user can view the QoS information using the following command.

Operation	Command	Note
View the QoS queue mechanism	**Show queuingm**	Execute in QoS view
View CoS value mapping	**Show cos** <coslist>	<coslist> : cos mapping value, 0, 1, 2-7
View ToS value mapping	**Show tos** <dscplist>	<dscplist> : tos mapping value, 1, 2, 3-64
View ToS/CoS enablement state	**Show state** <portlist>	<portlist>: 1,2,3,……or all；
View the default port priority	**Show default** <portlist>	<portlist>: 1,2,3,……or all；

9 Ring Configuration Command

Enter ring configuration view.

Operation	Command	Note
Enter ring configuration view	**ring**	Execute in the system view

```
Switch# ring
Switch(Ring)#
```

9.1 Enable or Disable Ring Network Function

Users can set up ring network enablement using the following command.

Operation	Command	Note
Ring network enable	**Open**{3|4}	{3|4}: • 3: enable ring3; • 4: enable rstp
Ring network close	**Close** {0|3|4}	{0|3|4}: 0: disable ring network function; 3: disable Ring3; 4: disable rstp

Configuration Instance

Enable ring3

```
Switch(Ring)# Open 3
  [OK]
  Tip: This configuration will be validated after restarting
```

9.2 Ring3 Configuration

Once Ring3 is enabled, Ring3 can be set using the following command.

Operation	Command	Note
Configure ring3	**Config ring3** {1|2} <id> <LoopType> <Ringport> <hellotime> <Master>	{1|2} : 1 represents ring group 1, 2 represents ring group 2 <id> : represents the ring network identity, and the value is 0-255 <LoopType>: Loop type • 0:Single • 1:Couple • 2:chain • 3:Daul_homing <portlist>: 2 ring network ports, such as: 1, 2 <hellotime>: value range is [0-300]*100ms <Master>: single-ring master-slave station • 0:Master • 1:Slave
Modify ring3	**Modify ring3** {1|2} <options> <parameter>	{1|2} : 1 represents ring group 1, 2 represents ring group 2 <options>: the options that can be modified are as follows: • -h: Hello packet interval time, with the value of [0--300]*100ms. • -i: ring network ID, ranging [0--255] • -t: ring network type, ranging {0|1|2|3} • -p: ring network port • -s: ring network status, {enable or disable} • -m: ring network master-slave station, with the value of {0:Master | 1:Slave} <parameter>: parameters matched with -h|-i|-p

Configuration Instance

Configure Port 1 and Port 2 to the first group loop port, loop id is 1, hello time is 0 and loop type is Couple.

```
Switch(Ring)#Open 3       //enable Ring3
  [OK]
  Tip: This configuration will be validated after restarting
```

```
Switch(Ring)#config ring3 1 1 1 1,2 0 1// configure port 1, 2 to
Ring3, Ring type to Couple, mo master station
  [OK]
  Tip: This configuration will be validated after restarting
```

9.3 Display Ring Network Configuration Information

After configuring ring network, user can use the following command to view ring network configuration information.

Operation	Command	Note
Display Ring Configuration Information	**show ring**	Execute in Ring network view
Display ring network status	**show ring_state**	Execute in Ring network view

Configuration Instance

View the current Ring network configuration information

```
Switch(Ring)# show ring
  Ring III Enable
  Group:1 ID:  1  port:6,5 type:     Couple  Hello_time:  0*100ms
Mster:Slave     state:Enable
  Group:2 ID:  2  port:3,4 type:     Single  Hello_time:  0*100ms
Mster:Slave     state:Disable
```

9.4 Rstp Configuration

Once RSTP is enabled, RSTP can be set using the following command.

Operation	Command	Note
Configure RSTP status	**Config rstp_state** <priority> <hellotime> <delaytime> <maxage>	<priority>: RSTP priority {0|4096|8192|12288|16384|20480|24576|28672|32768|36864|40960|45056|49152|53248|57344|61440} <hellotime> : polling interval time, ranging 1-10s <delaytime> : forwarding delay time, ranging from 4 to 30s <maxage> : address survival time, ranging 6-40s
Modify RSTP state parameter	**Modify rstp_state** <options> <parameter>	<options>: • -P: priority {0|4096|8192|12288|16384|20480|24576|28672|32768|36864|40960|45056|49152|53248|57344|61440} • -h: polling interval time, ranging from 1 to 10s • -d: forwarding delay time, ranging from 4 to 30s • -m: address survival time, ranging 6-40s <parameter>
Configure RSTP port	**Config rstp_port** <port> <pathcost> <portpriority> <p2p> <edge> <enable>	<port>: RSTP port <pathcost> : port path cost, ranging 0-200000000 <portpriority> : port priority, the range is {0|16|32|48|64|80|96|112|128|144 |0 160|1 176 |2 192 |3 208 |4 224 |5 240} <p2p> : point-to-point network connection, values are {no|yes|auto} <edge>: directly connected terminal, values are {no|yes} <enable> : participate in spanning tree, values are {no|yes}

Operation	Command	Note
Modify the RSTP port parameters	**Modify rstp_port** <port> <options> <parameter>	<port>: RSTP port <options>: • -c: port path cost, ranging 0-200000000 • -p: port priority, ranging {0|16|32|48|64|80|96|112|128|144|160 |0 176|1 192 |3 208 |3 224 |4 240} • -t: point-to-point network connection, values are {no|yes|auto} • -e: direct connection terminal, values are {no|yes} • -a: participate in spanning tree, values are {no|yes} <parameter>

Configuration Instance

1) Configure the path cost of RSTP port 1 to 2000.

```
Switch(Ring)# modify rstp_port 1 -c 2000
  [OK]
  Tip: This configuration will be validated after restarting
```

2) Configure priority of switch of rstp to 4096

```
Switch(Ring)# modify rstp_state -p 4096
  [OK]
  Tip: This configuration will be validated after restarting
```

9.5 Display Rstp Current Status

After configuring RSTP, user can use the following command to view the current status of RSTP.

Operation	Command	Note
Display RSTP current status	**RSTP Status**	Execute in Ring network view

10 LoopDetection Configuration Command

Enter the loop protection view.

Operation	Command	Note
Enter the loop protection view	**LoopDetection**	Execute in the system view

```
Switch# LoopDetection
Switch(Loop)#
```

10.1 Display Port State

Display port status.

Operation	Command	Note
Display port state	**Show Status** <portlist>	<portlist>: 1,2,3,……or all；

Configuration Instance

Display loop detection status of Port 1.

```
Switch(Loop)# show status 1
Loop  Time: 30
Range Time: 3
        STATE               ENABLE     Trap
```

10.2 Enable Port Loopback Detection

Enable port loopback detection;

Operation	Command	Note
Enable port loopback detection	**Enable** <portlist> <enable|disable>	<portlist>: 1,2,3,……or all； <enable|disable>: • Enable • Disable

Configuration Instance

Set port 1 to enable loop detection:

```
Switch(Loop)# enable 1 enable
[OK]
```

10.3 Enable the Port to Send Trap

Enable the port to send trap:

Operation	Command	Note
Enable the port to send trap	**Trap Enable <portlist> <enable|disable>**	<portlist>: 1,2,3,……or all； <enable|disable>: • Enable • Disable

Configuration Instance

Set port 1 to enable sending trap function:

```
Switch(Loop)# trap 1 enable
[OK]
```

10.4 Configure Loop Detection Time

Configure loop detection time.

Operation	Command	Note
Loop detection time after loop formation	**Config_LoopTime** <time>	<time>: time interval, 1--600, unit: second.
Loop detection time before loop formation	**Config_RangeTime** <time>	<time>: time interval, value range is 1--60, unit: second.

Configuration Instance

Set the loop detection interval to 5 seconds.

```
Switch(Loop)# config_RangeTime 10
[OK]
```

11 Trunk Configuration Command

Enter port trunking view.

Operation	Command	Note
Enter port trunking configuration view	**trunk**	Execute in the system view

```
Switch# trunk
Switch(Trunk)#
```

11.1 Port Trunking Configuration

The user can configure the port trunking using the following command.

Operation	Command	Note
Port Trunking Configuration	**Config** <trunkgroup> <portlist>	<trunkgroup> : trunk group 1, 2, 3 <portlist>: trunking port 1,2,3,……or all
Port trunking clear	**Clean** <trunkgroup>	<trunkgroup> : 1, 2, 3 respectively represent the trunk group 1, 2, 3; all represents all trunk groups

Configuration Instance

Set ports 2 and 3 to trunk group 1.

```
Switch(Trunk)# config 1 2,3
  [OK]
```

11.2 Port Trunking Display

Users can view port trunking configuration information using the following command.

Operation	Command	Note
Display configuration information of port trunking	**Show** <trunkgroup>	<trunkgroup> : 1, 2, 3 respectively represent the trunk group 1, 2, 3; all represents all trunk groups

Configuration Instance

View the port trunking information of trunk group 1.

```
Switch(Trunk)# show 1
 Group: 1
   state: enable
 Port:  2,3
```

12 SNMP Configuration Command

Enter SNMP configuration view.

Operation	Command	Note
Enter SNMP configuration view	**snmp**	Execute in the system view

```
Switch# snmp
Switch(Snmp)#
```

12.1 Snmp Enablement

SNMP enable and disable configuration command.

Operation	Command	Note
Enable/Disable SNMP	**snmp** {enable|disable}	{enable|disable}: • Enable: enable SNMP • Disable: disable SNMP

Configuration Instance

Enable SNMP function

```
Switch(Snmp)# snmp enable
  [OK]
```

12.2 Snmp Configuration

Community name and gateway address configuration commands.

Operation	Command	Note
Configure SNMP Read/Write community	**Config** <orcomm> <rwcomm>	<orcomm>: read-only community name <rwcomm>: read-write community name
Configure SNMP gateway.	**Trap** {1|2|3} <ip>	{1 | 2 | 3}: IP address 1-3 <IP>: the IP address of the trip destination, such as 192.168.1.1

Configuration Instance

Set SNMP gateway address 2 to 192.168.11.1.

```
Switch(Snmp)# trap 2 192.168.11.1
  [OK]
```

12.3 Snmp Display

SNMP display command.

Operation	Command	Note
Display SNMP Information	**SHOW**	Execute in SNMP view

Configuration Instance

Display SNMP configuration information.

```
Switch(Snmp)# show
  The only read community name    :public

  The read or write community name:private

  The SNMP gateway              :192.168.1.1

  The SNMP gateway              :192.168.11.1
```

13 Alarm Configuration Command

Enter alarm configuration view.

Operation	Command	Note
Enter alarm configuration view	**Alarm**	Execute in the system view

```
Switch# alarm
Switch(Alarm)#
```

13.1 Alarm Configuration/Delete

Note

- Single power supply device does not support power off alarm.
- After the dual power supply device is connected to two power supplies at the same time, it supports power failure alarm.

The user can configure the alarm using the following commands

Operation	Command	Note
Relay Output Type	**type**{0|1}	{0|1}: • 0: normally closed • 1: normally open

Operation	Command	Note
Configure the power supply alarm.	**Power relay** {1|2|all} {enable|disable}	{1|2|all}: • 1: represents the first power supply; • 2: represents the second power supply; • All: all the power supplies {enable|disable}: • Enable; • Disable
Configure the port alarm.	**Port relay** <portlist> {enable|disable}	<portlist>: 1,2,3,……or all； {enable|disable}: • Enable; • Disable
close the alarm information	**Close alarm**	Execute in alarm view

Configuration Instance

1) enable the alarm of port 1, 3, 5 and 7.

```
Switch(Alarm)# port relay 1,3,5,7 enable
  [OK]
```

2) disable the alarm function.

```
Switch(Alarm)# close alarm
[OK]
```

13.2 Display Alarm Information

The user can view the alarm information using the following command.

Operation	Command	Note
Display relay output type	**Show type**	Execute in alarm view
Display power supply alarm information	**Show power** {1|2|all}	{1|2|all}: 1: represents the first power supply; 2: represents the second power supply; All: represents all the power supply
Displays alarm information of the port	**Show port** <portlist>	<portlist>: 1,2,3,……or all；

Configuration Instance

View alarm information of the port

```
Switch(Alarm)# show type
  Relay type: open
```

14 Mirror Configuration Command

Enter port mirroring configuration view.

Operation	Command	Note
Enter port mirroring configuration view	**Mirror**	Execute in the system view

```
Switch# mirror
Switch(Mirror)#
```

14.1 Port Mirroring Configuration/Delete

The user can configure/delete the port mirroring using the following command.

Operation	Command	Note
Configure port mirroring	**Config** {0|1|2} <mirror_port> <port>	{0|1|2}: • 0: means collecting all data; • 1: means collecting ingress data • 2: means collecting data of egress <mirror_port > : mirror port 1, 2, 3... Or all <portlist>: collect port 1,2,3,……or all
Delete mirror information	**Close mirror**	Execute in port mirroring view

Configuration Instance

Configure port 3 to collect all data from ports 1 and 2.

```
Switch(Mirror)#config 0 1,2 3
  [OK]
```

14.2 Displays Port Mirroring Information

View mirror information command:

Operation	Command	Note
Display mirror information	**Show mirror**	Execute in port mirroring view

Configuration Instance

View port mirroring information.

```
Switch(Mirror)#show mirror
 Mirror portlist: 1,2
 Collect port   : 3
```

15 Manage Configuration Command

Enter system management view

Operation	Command	Note
Enter system management view	**Manage**	Execute in the system view

```
Switch# manage
Switch(Manage)#
```

15.1 Network Diagnosis Setting

Enter system management view:

Operation	Command	Note
network diagnosis setting	**Ping** <IP_address> <options> <content> <options> <content> <options>	<IP_address> : IP address, for example 192.168.1.254 <options>: • -t:Time To Live • -l:Data size • -n:Number of echo requests to send <content> : the parameter that matches -t/-l/-n

Configuration Instance

The Ping address of the device is 192.168.5.117, and the packet size is 64, 2 messages will be sent.

```
Switch(Manage)# ping 192.168.5.117 -l 64 -n 2
Pinging 192.168.5.117 with 64 bytes of data:
Reply from 192.168.5.117: bytes=64 time<0ms TTL=64
Reply from 192.168.5.117: bytes=64 time<0ms TTL=64
Ping statistics for 192.168.5.117:
```

```
   Packets: Sent = 2, Received = 2, Lost = 0 (0.000000% loss).
Approximate round trIP times in milli-seconds:
   Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

15.2 Display Device Network Address

View IP, subnet mask, default gateway and DNS address of the device.

Operation	Command	Note
Display IP, subnet mask, default gateway and DNS address of the device.	**show net_address**	Execute in system management view

Configuration Instance

View IP, subnet mask, default gateway of the device.

```
Switch(Manage)# show net_address
  Device IP address   :   192.168.1.254
  Device mask address :   255.255.255.0
  Device gateway      :   192.168.1.1
DNS address         :   202.96.134.133
```

15.3 Ip Address, Default Gateway, Dns Address Settings

The user can set the device IP, the default gateway address with the following command.

Operation	Command	Note
Device IP address configuration	**IP** <IP_address> <mask>	<IP_address>: IP address <mask>: subnet mask
Default gateway configuration	**Gateway** <gateway>	<gateway>: gateway address
DNS server address configuration	**DNS** <Server>	<Server>: DNS address

Configuration Instance

Configure the IP address of the device to 192.168.5.25, the subnet mask to 255.255.255.0 and the default gateway to 192.168.5.1

```
Switch(Manage)# IP 192.168.5.25 255.255.255.0
  [OK]
  The Switch is rebooting.Please waiting........
Switch(Manage)# gateway 192.168.5.1
  [OK]
  The Switch is rebooting.Please waiting.........
```

15.4 Dhcp Automatic Acquisition Of Ip

Users can enable DHCP clients to automatically obtain the IP address assigned by DHCP server.

Operation	Command	Note
DHCP Enable Configuration	**DHCP** {enable|disable}	{enable|disable}: Enable or disable DHCP.

15.5 System Log Information

The user can set the device IP, the default gateway address with the following command.

Operation	Command	Note
Configure the server address information of the syslog	**Syslog** <ip_address> <port_num>	<ip_address>: syslog server IP address <port_num>: TCP port of syslog server

15.6 System Timeout Settings

The user can set the system timeout with the following command.

Operation	Command	Note
system timeout settings	**Set** <time_out>	<time_out>: system timeout, value range is [0-60], unit: min; 0 means to disable timeout function

Configuration Instance

Set the system timeout to 10 minutes.

```
SWitch (manage)# set 10
  [OK]
```

Note

The system timeout is used to define the timeout period without any operation after entering CLI configuration mode. After the system timeout, it will automatically back to user mode and re-authenticate the user name and password.

15.7 User Name and Password Settings

The user can set the user name and password with the following command.

Operation	Command	Note
User name configuration	**Hostname** <hostname>	<hostname>: username string
Password configuration	**Password** <password> <password>	<password> : password string

15.8 Restore Factory Settings

The user can restore the device to factory settings with the following command.

Operation	Command	Note
Restore the device to factory settings.	**Restore**	Execute in system management view

Configuration Instance

Restore the device to factory settings.

```
Switch(manage)# restore
Restore Settings or not? (yes/no) yes //press <Y>
Wait.........
```

16 EventLog Configuration Command

Enter log information view.

Operation	Command	Note
Enter log information view	**Eventlog**	Execute in the system view

```
Switch# eventLog
Switch(EventLog)#
```

16.1 Log Information Enable

Log information enable configuration.

Operation	Command	Note
Log information enable configuration	**EventLog** {Enable|Disable}	Execute in log information view.

Configuration Instance

Enable logging.

```
Switch(EventLog)# eventLog enable
  [OK]
```

16.2 Log Information Type

Log information type configuration.

Operation	Command	Note
Log information type configuration	**LogType** {0|1|2|3}	0-1-2-3 • 0: all messages • 1. Startup information • 2: operation information • 3: link information
Delete log record	**ClearEventLog**	Execute in log information view.

Configuration Instance

Log device connection information.

```
Switch(EventLog)# logType 3
  [OK]
```

16.3 Log Information Status Display

Log information status display.

Operation	Command	Note
Log information status	**Show EventLog**	Execute in log information view.

Configuration Instance

Display the logging information status.

```
Switch(EventLog)# show EventLog
Log Record   : Enable
Display Type :  Connection
```

17 Multicast Configuration Command

Enter the static multicast filter view.

Operation	Command	Note
Enter the static multicast view	**Multicast**	Execute in the system view

```
Switch# multicast
Switch(Multicast)#
```

17.1 Display Multicast Filter List

Display command of static multicast address.

Operation	Command	Note
Displays static multicast filter address	**Show multicast**	Execute in the multicast view

Configuration Instance

Displays information of the static address table.

```
Switch(Multicast)# show multicast
  ( 1)  MAC : 01-22-33-44-55-66
        PORT: 1,2,3
```

17.2 Add Static Multicast Address

Multicast address adding command

Operation	Command	Note
Add multicast address	**Add** <macaddress> <portlist>	<macaddress>: multicast address in XY-XX-XX-XX-XX-XX or XY.XX.XX.XX.XX.XX, X is any hexadecimal number <portlist>: 1,2,3,……or all

Configuration Instance

Add a multicast address of 01-22-33-44-55-66 with member ports of 1,2,3.

```
Switch(Multicast)# add 01.22.33.44.55.66 1-3
  [OK]
```

17.3 Delete Static Multicast Address

Command of deleting multicast address

Operation	Command	Note
Delete multicast address	**Delete** <1-15>	<1-15> : entry 1-15 or all multicast address

Configuration Instance

Delete entry 1 of static multicast address.

```
Switch(Multicast)# delete 1
  [OK]
```

18 Information Configuration Command

Enter device information view:

Operation	Command	Note
Enter device information view	**Information**	Execute in the system view

```
Switch# information
Switch(information)#
```

18.1 Display Device Information

Display device information command.

Operation	Command	Note
Display system version	**show version**	Executable in the device information view
Display device MAC address	**show mac**	Executable in the device information view
Display model, name of the device	**show others**	Executable in the device information view

18.2 Configure Device Information

Configure device information, including type, name, description of the device, contact information, and so on.

Operation	Command	Note
Configure device information	**Config** <options> <string>	<options>: • -t: device type • -n: device name • -p: device description • -c: contact information <string>: parameter

Notice

Input type should conform to GB2312 code type, otherwise display error will occur.

18.3 Clean Device Information

Clean up device information, including type, name, number, description of the device and contact information.

Operation	Command	Note
Clean Device Information	**Clean** <options>	<options>: • -t: device type • -n: device name • -p: device description • -c: contact information

19 Time Configuration Command

Enter time configuration view.

Operation	Command	Note
Enter time configuration view	**Time**	Execute in the system view

```
Switch# time
Switch(Time)#
```

19.1 Time Configuration

Time Configuration Command

Operation	Command	Note
Enable time configuration	**enable**	Execute in time configuration view
Disable time configuration	**close**	Execute in time configuration view
SNTP time synchronization period	**Interval** <Time>	<Time>: time interval, unit: seconds.
World time zone selection	**Zone** <time-zone>	<time-zone>: World Time Zone,{-12|-11|-10|-9|-8|-7,1|-7,2|-6,1|-6,2|-5,1|-5,2|-4,1|-4,2|-3,1|-3,2|-2|-1|+0,1|+0,2|+1,1|+1,2|+2,1|+2,2|+3|+4|+5|+6|+7|+8,1|+8,2|+9|+10,1|+10,2|+11|+12,1|+12,2}
NTP server address	**Server** <serveraddr>	<serveraddr>: NTP server address

Configuration Instance

Set the corresponding mapping value of the world time zone to + 8,1.

```
Switch(Time)# zone +8,1
[OK]
```

19.2 Display Time Configuration View

Display the time configuration information.

Operation	Command	Note
Displays the time configuration information	**Show**	Execute in the time view

Configuration Instance

Displays time configuration information.

```
Switch(Time)# show
  Time Configuration:Enable
  The World TimeZone:(GMT+08:00) China, Hong Kong, Australia
Western
  The NTP server:time-a.nist.gov
  The SNTP Synchronization interval:10 (s)
  The system time:2020-12-29,01:08:47, Tue
```

20 TFTP Configuration Command

Enter TFTP Configuration View.

Operation	Command	Note
Enter TFTP configuration view	**TFTP**	Execute in the system view

```
Switch# TFTP
Switch(TFTP)#
```

20.1 Tftp Configuration

TFTP configuration command

Operation	Command	Note
IP address of the TFTP server	**Server** <ip_address>	<ip_address> : TFTP server IP address, for example 192.168.1.254
Upload configuration file or update program	Get <File_name>	<File_name> : program name, such as XXXX. cfg.
Download Configuration File	Put <File_name>	<File_name> : program name, such as XXXX. cfg.

20.2 Display Tftp Configuration Information

Display TFTP configuration information.

Operation	Command	Note
Display TFTP Configuration Information	**Show TFTP_config**	Execute in the TFTP view

Configuration Instance

Display TFTP configuration information.

```
Switch(TFTP)# show tFTP_config
  TFTP Server ip:   192.168.1.1
```