

3onedata



IEM618-4D-2C

Managed Industrial Ethernet Switch Module

CLI User Manual

Version 02

Issue Date: 4/21/2020

Copyright © 2020 3onedata Co., Ltd. All rights reserved.

No company or individual is allowed to duplicate or transmit this manual in any forms without written permission issued by 3onedata Co., Ltd.

Trademark statement

3onedata, **3onedata** and  are the registered trademark owned by 3onedata Co., Ltd. And other trademarks mentioned in this manual belong to their corresponding companies.

Notice

Purchased product, service or features should be constrained by 3onedata commercial contracts and clauses. The whole or part product, service or features described in this document may beyond purchasing or using range. 3onedata won't make any statement or warranty for this document content unless any other appointment exists.

Due to product version upgrading or other reason, this document content will be upgraded periodically. Unless other appointment exists, this document only for usage guide, all statement, information and suggestion in this document won't constitute any warranty.

3onedata



Please scan our QR code
for more details

3onedata
Make network communication more reliable



BlueEyes pro



Embedded Industrial
Ethernet Switch Modules

Embedded Serial
Device Server Modules



Industry-specialized
Products
(Rail Transit, Power,
Smart City, Pipe Gallery...)

Honor · Quality · Service



Layer 2 (Unmanaged)
Managed Industrial
Ethernet Switch

Layer 3 Managed
Industrial Ethernet Switch
Industrial PoE Switch



BlueEyes Pro
Management Software

VSP Virtual Serial Port
Management Software

SNMP Management
Software



Modbus Gateway

Serial Device Server

Media Converter

CAN Device Server

Interface Converter



Industrial Wireless
Products

3onedata Co., Ltd.

Headquart 3/B, Zone 1, Baiwangxin High Technology Industrial park, Nanshan District,

Technolog tech-support@3onedata.com

Service +86-400-880-4496

E-mail: sales@3onedata.com

Fax: +86-0755-26703485

Website: <http://www.3onedata.com>

<http://www.3onedata.com>

Preface

The CLI user manual of switch module has introduced this switch module:

- CLI configuration

Readers

This manual mainly suits for engineers as follows:

- Network administrator responsible for network configuration and maintenance
- On-site technical support and maintenance staff
- Network Engineer

Text Format Convention

Format	Description
""	Words with "" represent the interface words. e.g.: "The port number".
>	Multi-level paths are 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 links to the Principles Operations Section of this chapter.

Icon Convention

Format	Description
 Notice	Remind the announcements 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.
 Notes	Make a necessary supplementary instruction for operation description.

Format	Description
 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.	2015-08	Product release
02.	2020-04-21	Software upgrade, layout optimization

Content

PREFACE	1
CONTENT	1
1 LOGIN TO THE CLI CONFIGURATION INTERFACE	1
1.1 LOGIN THE SWITCH VIA CONSOLE PORT	1
1.2 LOGIN THE SWITCH VIA TELNET	3
1.3 COMMAND LINE INTERFACE	5
1.3.1 Command Line Online Help	5
1.3.2 Command Line Common Error	6
1.3.3 History Command	6
1.3.4 Common Command	7
2 PORT CONFIGURATION COMMAND	9
2.1 PORT INFORMATION DISPLAY	9
2.2 PORT ENABLEMENT;	10
2.3 PORT FLOW CONTROL	10
2.4 PORT SPEED AND WORKING MODE	10
3 SERIAL CONFIGURATION COMMAND	12
3.1 SERIAL PORT INTRODUCTION	12
3.2 SERIAL PORT INFORMATION;	12
3.3 SERIAL PORT PARAMETER	13
3.4 COM WORK MODE CONFIGURATION	15
3.5 TCP CLIENT WORKING MODE CONFIGURATION	15
3.6 UDP WORKING MODE CONFIGURATION	16
3.7 TCP SERVER WORKING MODE CONFIGURATION	16
3.8 TCP AUTO WORKING MODE CONFIGURATION	17
3.9 SERIAL PORT ADVANCED MODE	17
3.10 TCP SERVER ADVANCED MODE CONFIGURATION	18
3.11 UDP ADVANCED MODE CONFIGURATION	18
4 CAN CONFIGURATION COMMAND	20
4.1 CAN INTRODUCTION	20
4.2 DISPLAY CAN INFORMATION	20
4.3 CONFIGURE CAN PARAMETER	22
4.4 BASIC/ADVANCED MODE CONFIGURATION	23
4.5 WORK MODE CONFIGURATION IN BASIC MODE	23

4.5.1 TCP Client working mode configuration	23
4.5.2 UDP Working Mode Configuration	24
4.5.3 TCP Server working mode configuration	25
4.5.4 TCP Auto Working Mode Configuration	26
4.6 WORK MODE CONFIGURATION IN ADVANCED MODE	26
4.6.1 TCP Server Advanced Mode Configuration	27
4.6.2 UDP Advanced Mode Configuration	27
5 BANDWIDTH CONFIGURATION COMMAND	29
5.1 BANDWIDTH CONFIGURATION	29
5.2 BANDWIDTH DISPLAY	30
6 IGMP CONFIGURATION COMMAND	32
6.1 IGMP SNOOPING CONFIGURATION COMMAND	32
7 LLDP CONFIGURATION COMMAND	34
7.1 LLDP ENABLEMENT	34
7.2 DISPLAY LLDP INFORMATION	34
7.3 LLDP CONFIGURATION	35
8 VLAN CONFIGURATION COMMAND	36
8.1 VLAN TYPE CONFIGURATION AND DISPLAY	36
8.2 PORT-BASED VLAN	37
8.3 IEEE802.1Q VLAN	37
9 QOS CONFIGURATION COMMAND	39
9.1 QOS QUEUE MECHANISM CONFIGURATION	39
9.2 ToS AND CoS ENABLEMENT	39
9.3 ToS/CoS VALUE MAPPING	40
9.4 DEFAULT PORT PRIORITY CONFIGURATION	41
9.5 DISPLAY QOS CONFIGURATION INFORMATION	41
10 RING CONFIGURATION COMMAND	42
10.1 ENABLE OR DISABLE RING NETWORK FUNCTION	42
10.2 RING3 CONFIGURATION	42
10.3 RSTP CONFIGURATION	43
10.4 DISPLAY RSTP CURRENT STATUS	45
10.5 DISPLAY RING NETWORK CONFIGURATION INFORMATION	46
11 TRUNK CONFIGURATION COMMAND	47
11.1 PORT TRUNKING CONFIGURATION	47
11.2 PORT TRUNKING DISPLAY	47
12 SNMP CONFIGURATION COMMAND	49
12.1 SNMP ENABLEMENT	49
12.2 SNMP CONFIGURATION	49
12.3 SNMP DISPLAY	50
13 ALARM CONFIGURATION COMMAND	51
13.1 ALARM CONFIGURATION/DELETE	51
13.2 DISPLAY ALARM INFORMATION	52
14 STATISTICS CONFIGURATION COMMAND	53

14.1 PORT STATISTICS CONFIGURATION VIEW	53
15 MIRROR CONFIGURATION VIEW.....	55
15.1 PORT MIRRORING CONFIGURATION/DELETE	55
15.2 DISPLAYS PORT MIRRORING INFORMATION	56
16 MANAGE CONFIGURATION COMMAND	57
16.1 NETWORK DIAGNOSIS SETTING	57
16.2 DISPLAY DEVICE NETWORK ADDRESS	58
16.3 IP ADDRESS, DEFAULT GATEWAY SETTINGS	58
16.4 SYSTEM TIMEOUT SETTINGS	59
16.5 USER NAME AND PASSWORD SETTINGS	59
16.6 FACTORY DEFAULT	59
16.7 UPLOAD AND DOWNLOAD CONFIGURATION FILES	60
16.8 SYSTEM UPGRADE	61
17 MULTICAST CONFIGURATION COMMAND.....	62
17.1 DISPLAY MULTICAST FILTER LIST	62
17.2 ADD STATIC MULTICAST ADDRESS	62
17.3 DELETE STATIC MULTICAST ADDRESS	63
18 INFORMATION CONFIGURATION COMMAND	64
18.1 DISPLAY DEVICE INFORMATION	64
18.2 CONFIGURE DEVICE INFORMATION.....	64
18.3 CLEAN UP DEVICE INFORMATION.....	65
19 TIME CONFIGURATION COMMAND.....	66
19.1 TIME CONFIGURATION.....	66
19.2 DISPLAYS THE TIME CONFIGURATION VIEW	67
20 TFTP CONFIGURATION COMMAND	68
20.1 TFTP CONFIGURATION	68
20.2 DISPLAY TFTP CONFIGURATION INFORMATION	68

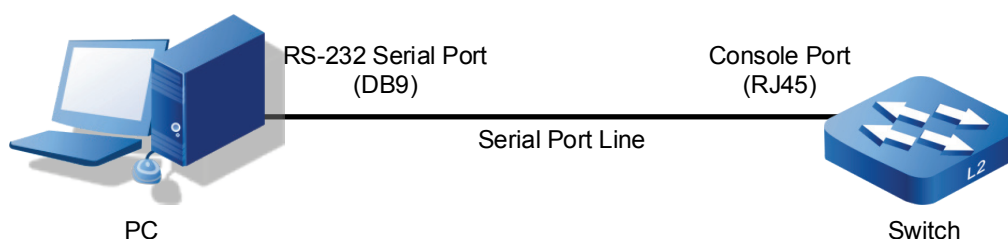
1 Login to the CLI Configuration Interface

1.1 Login 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

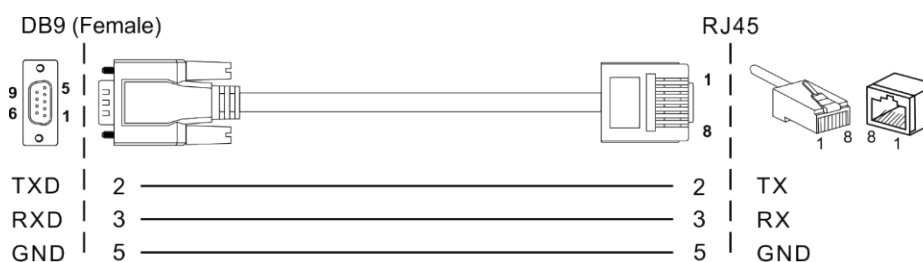
Step 1 Connect the serial port of the computer to the Console port of the device through the serial port line to establish a local configuration environment, as shown in the topology diagram below.



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:

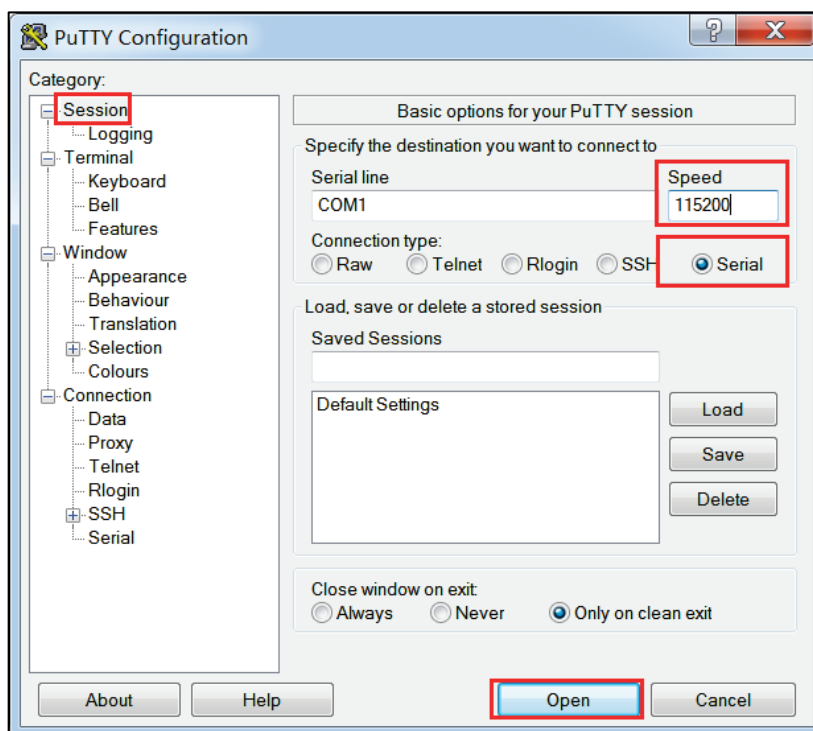
Diagram of internal connection line of serial port line/communication cable is shown below.



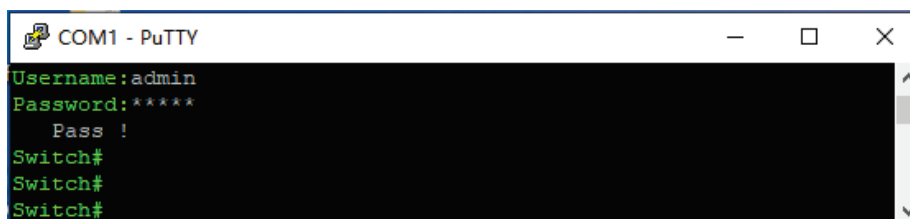
Step 2 Open the terminal simulation software on the PC, create a new connection, and set

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 the Switch via Telnet

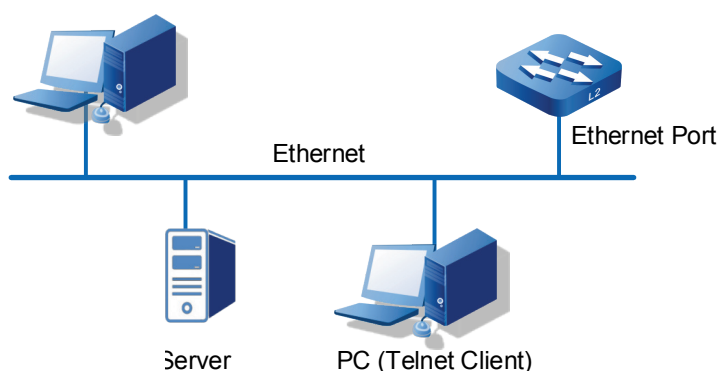
Through Telnet client login to the command line interface of the device, the client and the device should meet the following requires:

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.

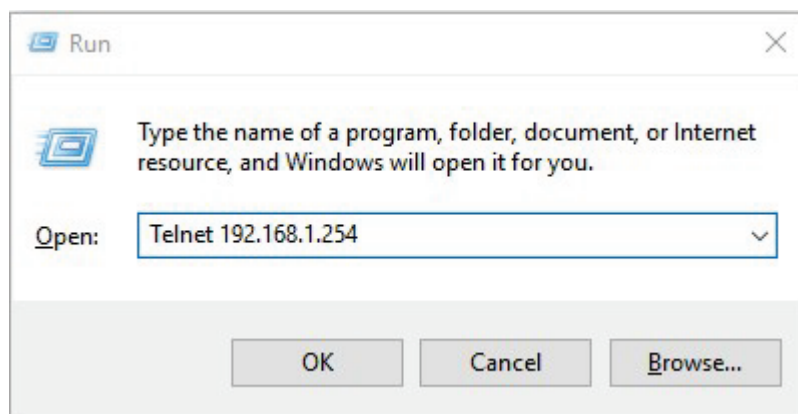
Operation Steps

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.

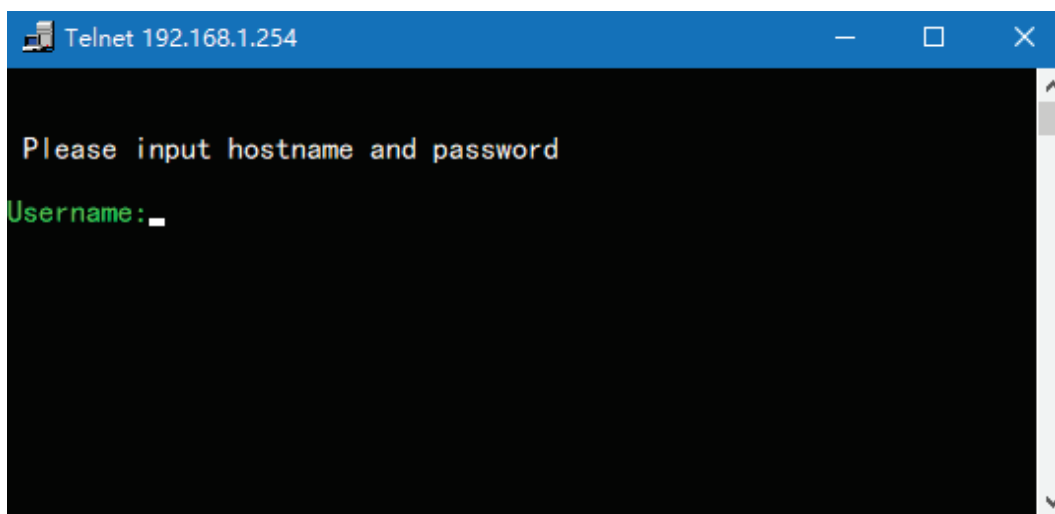
1. Press "Win+R" to pop up the running window;
2. Enter "Telnet+ space + device IP address" in the "Open (O)" input box.
3. Click "OK" button.



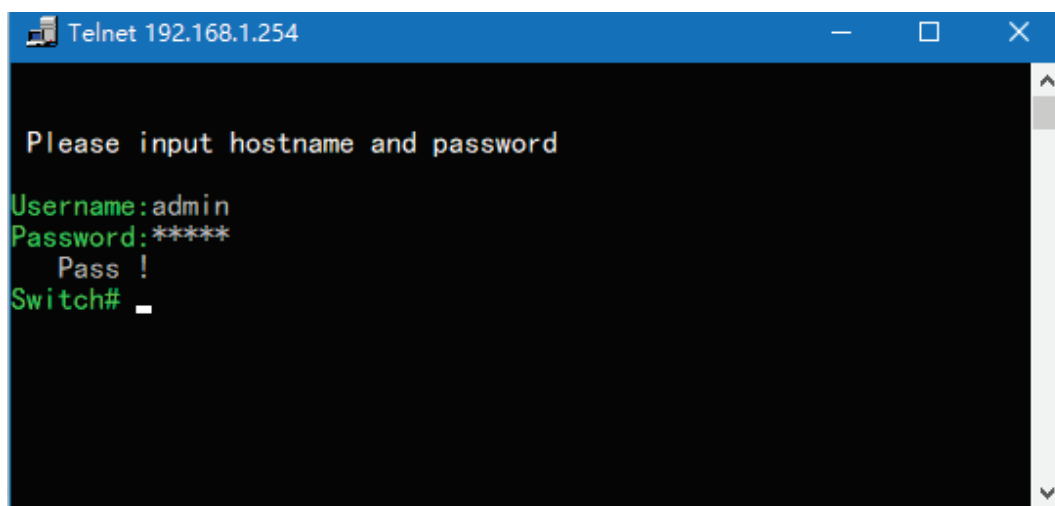
Note:

- 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 and start the Telnet connection request. After successful connection, the interface displays "Please input hostname and password", as shown below.



Step 4 Enter the correct username and password. After the username and password are verified, "Pass!" will be displayed. As the picture below:



Note:

Refer to the contents of Chapter "Login to the WEB Interface" of "User Manual" for device's default username and password. The user name and password are generally admin by default, and admin12345 for some industry-specific devices by default.

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
	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	Description
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
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
  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	Description
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	Description
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

Display state information of port 1.

```
Switch(Port) # show state 1
           Speed  Port_status  Link_status  Interface_type
port 1  10M      HALF        LOS         TX
```

Display configuration information of port 1.

```
Switch(Port) # show config 1
           Speed  Mode      Port_status  Flow_contorl
Interface_type
port 1  Auto    HALF      Enable      Disable      TX
```

2.2 Port enablement;

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

Operation	Command	Description
Port enablement	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	Description
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	Description
-----------	---------	-------------

Operation	Command	Description
Configure the speed and duplex mode of the port	Mode <portlist> {10h 10f 100h 100f 1000f auto}	<portlist>: 1,2,3,.....or all; Mode: • 10h: 10Mbps half duplex; • 10f: 10Mbps full duplex; • 100h: 100Mbps half duplex; • 100f: 100Mbps full duplex; • 1000f: 1000Mbps full duplex; • Auto: auto-negotiation

Configuration Instance

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

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

3 Serial Configuration Command

The serial port server configuration includes

- Port number configuration
- Serial Parameter Settings
- Work Mode Settings

3.1 Serial Port Introduction

The serial port supports TCP Client, TCP Server, UDP, TcpAuto, as well as TCP Server and UDP segment advanced working mode

Enter serial port configuration view command:

Operation	Command	Description
Enter serial port configuration view	Serial	Execute in the system view
Enter serial port configuration	Com1、Com2、Com3、Com4	Execute in the serial port view



Note

The number of serial ports entering the serial port configuration shall be subject to the number of serial ports possessed by the actual product.

3.2 Serial Port Information:

Serial Port Information:

Operation	Command	Description
-----------	---------	-------------

Operation	Command	Description
Display connection status of the serial port	Show link <i><port></i>	<i><port></i> : 1,2,3 or all
Statistics serial port information status	Show err <i><port></i>	<i><port></i> : 1,2,3 or all
Clean up serial port information	clear err <i><port></i>	<i><port></i> : 1,2,3 or all
Displays serial port configuration information	Show config <i><port></i>	<i><port></i> : 1,2,3 or all

Configuration Instance

- Display the connection status of serial port 1
Serial (com1) # **show link 1**
- Statistics error message of serial port 1
Serial (com1) # **show err 1**
- Clean up the error message of serial port 1
Serial (com1) # **clear err 1**
- Display configuration information of serial port 1
Serial (com1) # **show config 1**

3.3 Serial Port Parameter

Configure the serial port parameter:

Operation	Command	Description
-----------	---------	-------------

Operation	Command	Description
Configure the serial port parameter	Config <i><Baudrate><parity><Databits><stopbits></i>	<i><Baudrate port></i>: baud rate 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 <i><parity></i>: Parity 0: None 1: Odd 2: Even 3: Mark 4: Space <i><Databits></i>: Databits 0: 5bits 1: 6bits 2: 7bits 3: 8bits <i><stopbits></i>: Stop Bits 0: 1bit 1: 1.5bits, data bits is 5. 1: 2bits, data bits is 6/7/8.
Serial port data frame message	Set packs_bytes <i><bytes></i>	<i><bytes></i> : data frame range 0~1460 bytes
Serial character spacing	Set packs_time <i><time></i>	<i>< time ></i> : character interval of 1~500ms
COM Mode	Set Com_mode <i><Com_mode></i>	<i>< Com_mode ></i>: 0: RS232 1: RS485 2: RS422

Configuration Instance

- Configure the parameter of serial port 1
Serial (com1) # **config 115200 1 2 1**
- Configure the data frame for serial port 1
Serial (com1) # **set packs_bytes 500**
- Configure character spacing for serial port 1
Serial (com1) # **set packs_time 50**
- Configure serial port 1 to RS485 work mode
Serial (com1) # **set_com_mode 2**

3.4 COM Work Mode Configuration

COM work mode configuration information:

Operation	Command	Description
COM work mode configuration information	Set oneToMulti <oneToMulti>	<oneToMulti>: 0: basic mode 1: advanced mode

Configuration Instance

Configure serial port 1 to advanced mode

```
Serial (com1) # set oneToMulti 1
```

3.5 TCP Client working mode configuration

Configuration information of serial port TCP Client mode:

Operation	Command	Description
Serial TCP Client mode configuration information	Set TCP_C <session_list> <enable> <local_port> <dns> <dest_addr> <dest_port> <link_mode> <heartbeat> <TCP_timeout> <realCom>	<session_list>: sessions 1~4 <enable>: 1: Enable 0: disable Local port Domain name 1: Enable 0: disable Destination address Destination port <link_mode> : 1: connect immediately 0: data trigger Heartbeat time Disconnected time out <realCom>: 1: Enabled 0: Disable

Configuration Instance

Configure TCP Client working mode of the serial port 1

```
Serial (com1) # set TCP_C 4 1 30000 1 192.168.1.254 31000 1 0 300
1
```

3.6 UDP Working Mode Configuration

UDP mode configuration information of serial port:

Operation	Command	Description
TCP UDP mode configuration information of serial port	Set UDP <session_list> <enable> <local_port><dns> <dest_addr> <dest_port> <realCom>	<session_list>: sessions 1~4 <enable>: • 1: Enable • 0: disable Local port Domain name Destination address Destination port <realCom>: • 1: Enabled • 0: Disable

Configuration Instance

Configure UDP working mode of serial port 1

```
Serial (com1) # set UDP 4 1 30000 1 192.168.1.254 31000 31000 1
```

3.7 TCP Server working mode configuration

Serial TCP Server mode configuration information:

Operation	Command	Description
Serial TCP Server mode configuration information	Set TCP_S <session_list> <enable> <local_port> <heartbeat> <TCP_timeout> <realCom>	<session_list>: sessions 1~4 <enable>: • 1: Enable • 0: disable Local port Heartbeat time Disconnected time out <realCom>: • 1: Enabled • 0: disable

Configuration Instance

Configure the serial port 1 TCP Server working mode

```
Serial (com1) # set TCP_S 4 1 30000 10 300 1
```

3.8 TCP Auto Working Mode Configuration

Configuration information of serial port TCP Auto mode:

Operation	Command	Description
Serial port TCP Auto mode configuration information	Set TCP_A <session_list> <enable> <local_port> <dns> <dest_addr> <dest_port> <link_mode> <heartbeat> <TCP_timeout> <realCom>	<session_list>: sessions 1~4 <enable>: • 1: Enable • 0: disable Local port Domain name Destination address Destination port <link_mode>: • 1: connect immediately • 0: data trigger Heartbeat time Disconnected time out <realCom>: • 1: Enabled • 0: Disable

Configuration Instance

Configure serial port 1 TCP Auto working mode

```
Serial (com1) # set TCP_A 4 1 30000 1 192.168.1.254 31000 1 10 300 1
```

3.9 Serial Port Advanced Mode

COM work mode configuration information:

Operation	Command	Description
-----------	---------	-------------

Operation	Command	Description
Serial port advanced mode information	Set Session_multi <net_mode > <session_number>	<net_mode >: 1: TCP server 2: UDP <session_number>: sessions 0~4

Configuration Instance

Configure advanced mode of serial port 1

```
Serial (com1) # set session_multi 1 4
```

3.10 TCP Server Advanced Mode Configuration

Advanced mode configuration information of serial TCP Server:

Operation	Command	Description
Serial TCP Server advanced mode configuration information	Set TCP_S_multi <local_port> <heartbeat> <TCP_timeout> <realCom>	Local port Heartbeat time Disconnected time out <realCom>: 1: Enabled 0: Disable

Configuration Instance

Configure the serial port 1 TCP Server advanced mode.

```
Serial (com1) # set TCP_S_multi 30000 10 300
```

3.11 UDP Advanced Mode Configuration

UDP advanced mode configuration information of serial port:

Operation	Command	Description
-----------	---------	-------------

Operation	Command	Description
UDP advanced mode configuration information of serial port	Set UDP_multi <session_list> <local_port> <dns> <dest_addr> <dest_addr_end> <dest_port> <realCom>	<session_list>: sessions 0~4 Local port Domain name <dest_addr> : the starting destination address for the segment address <dest_addr_end> : end destination address of segment address Destination address <realCom>: • 1: Enabled • 0: Disable

Configuration Instance

Configure serial port 1 UDP advanced mode.

```
Serial (com1) # set UDP_multi 4 30000 1 192.168.0.1 192.168.0.254
31000 1
```

4 CAN Configuration Command

CAN server configuration includes:

- Port number configuration
- CAN Parameters Configuration
- Work Mode Settings

4.1 CAN Introduction

The CAN port supports TCP Client, TCP Server, UDP, TcpAuto, as well as TCP Server and UDP segment advanced working mode.

Enter CAN port configuration view command:

Operation	Command	Description
Enter CAN port configuration view	CAN	Execute in the system view
Enter CAN port configuration	Can1、Can2	Execute in CAN configuration view



The number of CAN ports entering the CAN port configuration shall be subject to the number of CAN ports possessed by the actual product.

4.2 Display CAN Information

CAN port information:

Operation	Command	Description
Displays CAN port configuration information	Show config <i><port_list></i>	<i><port_list></i> : 1, 2 or all

Operation	Command	Description
Display CAN port session connection information	Show link <i><port_list></i>	<i><port_list></i> : 1, 2 or all
Display CAN port error statistics information	Show err <i><port_list></i>	<i><port_list></i> : 1, 2 or all
Clean CAN port error statistics information	clear err <i><port_list></i>	<i><port_list></i> : 1, 2 or all

Configuration Instance

1. Display configuration information of CAN port 1.

```
CAN(CAN1) # show config 1
```

```
CAN<1>
```

```

Buadrate:          1000000 (bps)
Can mode:          Normal
Packs frame:       1 (frame)
Packs time space:  1 (ms)
Session Option:    OneToOne

```

```
Session<1>
```

```

State:             Enable
Session mode:      TCP server
local port:        32000.
heartbeat interval: 0 (S)
TCP link TimeOut:  300 (S)

```

```
Session<2>
```

```

State:             Disable
Session mode:      TCP server
local port:        32001.
heartbeat interval: 0 (S)
TCP link TimeOut:  300 (S)

```

```
Session<3>
```

```

State:             Disable
Session mode:      TCP server
local port:        32002.
heartbeat interval: 0 (S)
TCP link TimeOut:  300 (S)

```

```
Session<4>
```

```

State:             Disable
Session mode:      TCP server
local port:        32003.
heartbeat interval: 0 (S)
TCP link TimeOut:  300 (S)

```

2. Display CAN1 session connection information.

```
CAN(CAN1) # show link 1
```

```
CAN<1>
```

```
Session<1>
```

```
Session<2>
```

```
Session<3>
```

```
Session<4>
```

3. Statistics error message of CAN 1.

```
CAN(CAN1) # show err 1
```

```
CAN<1>
```

```
Can err:      0 frames
```

```
Bus err:      0 frames
```

```
Session<1>
```

```
ch err:      0 frames
```

```
Session<2>
```

```
ch err:      0 frames
```

```
Session<3>
```

```
ch err:      0 frames
```

```
Session<4>
```

```
ch err:      0 frames
```

4. Clean up the error message of CAN 1.

```
CAN(CAN1) # clear err 1
```

```
Clear OK!
```

4.3 Configure CAN Parameter

Configure the CAN port parameter:

Operation	Command	Description
CAN subcontract Frame Number Configuration	Set Packs_frame <i><packs_frame></i>	<i><packs_frame></i> : the range of subcontract frame number is 1-50.
CAN subcontract time configuration	Set Packs_time <i><Packs_time></i>	<i><Packs_time></i> : the range of CAN subcontract time interval is 1-254ms.
Clear CANBuffer information	Set Clear_can_buff <i>{enable disable}</i>	<i>{enable disable}</i> : - Enable: clear up CANBuffer during TCP connection; - Disable: never clear up CANBuffer.

Operation	Command	Description
Enable/Disable TCP Trubo	Set TCP_Trube <i>{enable disable}</i>	{enable disable}: • Enable: Enable TCP Trubo; • Disable: Disable TCP Trubo.
CAN port baud rate and CAN mode configuration	Config <i><baudrate></i> <i><can_mode></i>	<i><baudrate></i> : CAN baud rate supports optional 5000, 10000, 20000, 30000, 40000, 50000, 100000, 125000, 250000, 500000, 600000, 700000, 800000, 900000, 1000000, the unit is bps. <i><can_mode></i> : • 0: normal; • 1: listen only; • 2: self testing.

4.4 Basic/Advanced Mode Configuration

Basic/advanced mode configuration information:

Operation	Command	Description
Basic/Advanced Mode Configuration information	Set oneToMulti <i><oneToMulti></i>	<i><oneToMulti></i> : • 0: basic mode • 1: advanced mode

Configuration Instance

Configure CAN1 to basic mode

```
CAN (CAN1) # set oneToMulti 0
```

```
[OK]
```

4.5 Work Mode Configuration in Basic Mode

4.5.1 TCP Client working mode configuration

Configuration information of TCP Client mode:

Operation	Command	Description
-----------	---------	-------------

Operation	Command	Description
TCP Client mode	Set TCP_C <code><session_list></code> <code><enable></code> <code><local_port></code> <code><dns></code> <code><dest_addr></code> <code><dest_port></code> <code><link_mode></code> <code><heartbeat></code> <code><TCP_timeout></code>	<code><session_list></code> : session number, 1, 2, 3, 4 or all. <code><enable></code> : 0: disable 1: enable <code><local_port></code> : local_port, 0-65535. Domain name 1: Enable 0: disable <code><dest_addr></code> : destination address, IP address or domain name. <code><Dest_port></code> : destination port, 1-65535. <code><link_mode></code> : 1: connect immediately 0: data trigger <code><Heartbeat></code> : heartbeat time, 0-65535s. <code><TCP_timeout></code> : disconnected time out, 0-65535s.

Configuration Instance

Configure TCP Client working mode of the CAN1.

```
CAN (CAN1) # set tcp_C 1 1 30000 0 192.168.1.66 31000 1 0 300
[OK]
```

4.5.2 UDP Working Mode Configuration

UDP mode configuration information:

Operation	Command	Description
-----------	---------	-------------

Operation	Command	Description
UDP mode	Set UDP <code><session_list></code> <code><enable></code> <code><local_port></code> <code><dns></code> <code><dest_addr></code> <code><dest_port></code>	<code><session_list></code> : session number, 1, 2, 3, 4 or all. <code><enable></code> : 0: disable 1: enable <code><local_port></code> : local_port, 0-65535. Domain name 1: Enable 0: disable <code><dest_addr></code> : destination address, IP address or domain name. <code><Dest_port></code> : destination port, 1-65535.

Configuration Instance

Configure the working mode of CAN1 UDP

```
CAN (CAN1) # set UDP 3 1 30002 1 192.168.1.66 32000
```

[OK]

4.5.3 TCP Server working mode configuration

TCP Server mode configuration information:

Operation	Command	Description
TCP Server mode	Set TCP_S <code><session_list></code> <code><enable></code> <code><local_port></code> <code><heartbeat></code> <code><TCP_timeout></code>	<code><session_list></code> : session number, 1, 2, 3, 4 or all. <code><enable></code> : 0: disable 1: enable <code><local_port></code> : local_port, 0-65535. <code><Heartbeat></code> : heartbeat time, 0-65535s. <code><TCP_timeout></code> : disconnected time out, 0-65535s.

Configuration Instance

Configure TCP Server working mode of the CAN1.

```
CAN (CAN1) # set tcp_s 2 1 30001 0 300
```

[OK]

4.5.4 TCP Auto Working Mode Configuration

Configuration information of TCP Auto mode:

Operation	Command	Description
TCP Auto mode	Set TCP_A <code><session_list></code> <code><enable></code> <code><local_port></code> <code><dns></code> <code><dest_addr></code> <code><dest_port></code> <code><link_mode></code> <code><heartbeat></code> <code><TCP_timeout></code>	<code><session_list></code> : session number, 1, 2, 3, 4 or all. <code><enable></code> : 0: disable 1: enable <code><local_port></code> : local_port, 0-65535. Domain name 1: Enable 0: disable <code><dest_addr></code> : destination address, IP address or domain name. <code><Dest_port></code> : destination port, 1-65535. <code><link_mode></code> : 1: connect immediately 0: data trigger <code><Heartbeat></code> : heartbeat time, 0-65535s. <code><TCP_timeout></code> : disconnected time out, 0-65535s.

Configuration Instance

Configure TCP Auto working mode of the CAN1.

```
CAN (CAN1) # set tcp_A 4 1 30000 0 192.168.1.66 34000 1 0 300
[OK]
```

4.6 Work Mode Configuration in Advanced Mode

Work mode configuration information:

Operation	Command	Description
Work mode selection in advanced mode	Set Session_multi <code><net_mode ></code> <code><session_number></code>	<code><net_mode ></code> : 1: TCP server 2: UDP <code><session_number></code> : session number, 0-4.

Configuration Instance

Configure the advanced mode of CAN 1.

```
CAN (CAN1) # Set OneToMulti 1 //advanced mode
```

[OK]

```
CAN (CAN1) # Set Session_multi 1 4 //TCP work mode
```

[OK]

4.6.1 TCP Server Advanced Mode Configuration

The configuration information of TCP Server advanced mode:

Operation	Command	Description
TCP Server advanced mode	Set TCP_S_multi <i><local_port></i> <i><heartbeat></i> <i><TCP_timeout></i>	<local_port>: local_port, 0-65535. <Heartbeat>: heartbeat time, 0-65535s. <TCP_timeout>: disconnected time out, 0-65535s.

Configuration Instance

Configure the CAN1 TCP Server advanced mode.

```
CAN (CAN1) # Set TCP_S_multi 30000 0 300
```

[OK]

4.6.2 UDP Advanced Mode Configuration

The configuration information of UDP advanced mode:

Operation	Command	Description
-----------	---------	-------------

Operation	Command	Description
UDP advanced mode	Set UDP_multi <code><session_list></code> <code><local_port></code> <code><dns></code> <code><dest_addr></code> <code><dest_addr_end></code> <code><dest_port></code>	<code><session_list></code> : session number, 1, 2, 3, 4 or all. <code><local_port></code> : local_port, 0-65535. Domain name 1: Enable 0: disable <code><dest_addr></code> : the start destination address of the UDP segment address. <code><dest_addr_end></code> : the end destination address of the UDP segment address. <code><Dest_port></code> : destination port, 1-65535.

5 Bandwidth Configuration Command

Enter bandwidth management view

Operation	Command	Description
Enter bandwidth management view	Bandwidth	Execute in the system view

Switch# **bandwidth**

Switch(Bandwidth) #

5.1 Bandwidth configuration

Ingress bandwidth and egress bandwidth configuration commands.

Operation	Command	Description
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	Description
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, 16M, 32M, 64M, 128M, 256M, 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]

5.2 Bandwidth Display

Display commands of ingress bandwidth and egress bandwidth.

Operation	Command	Description
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
```

6 IGMP Configuration Command

Enter IGMP snooping view

Operation	Command	Description
Enter the multicast filter configuration view	IGMP	Execute in the system view

Switch# **igmp**

Switch(Igmp) # ?

6.1 IGMP Snooping Configuration Command

IGMP-snooping configuration

Operation	Command	Description
Configure IGMP snooping enablement	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 MAClist	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.
```

7 LLDP Configuration Command

Enter LLDP View

Operation	Command	Description
Enter LLDP configuration view	LLDP	Execute in the system view

Switch# **lldp**

Switch (Lldp) #

7.1 LLDP enablement

Enable/disable LLDP configuration command

Operation	Command	Description
Enable/disable LLDP	Lldp {enable disable}	{enable disable}: • Enable • Disable

7.2 Display LLDP Information

Display LLDP information

Operation	Command	Description
Display LLDP configuration	Show	Execute in LLDP configuration view

7.3 LLDP Configuration

LLDP configuration command

Operation	Command	Description
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

8 VLAN Configuration Command

Enter vlan configuration view:

Operation	Command	Description
Enter Vlan configuration view	Vlan	Execute in the system view

Switch# **vlan**

Switch(VLAN) #

8.1 VLAN Type Configuration and Display

VLAN type configuration and display commands.

Operation	Command	Description
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!

8.2 Port-based VLAN

Enter port VLAN view.

Operation	Command	Description
Port VLAN view	PVLANSetting	Execute in VLAN view

Switch (VLAN) # **PVLANSetting**

Switch (PortVlan) #

Port VLAN configuration

Operation	Command	Description
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 (PortVlan) # **add 2 2,3**

[OK]

8.3 IEEE802.1Q VLAN

Enter 802.1Q VLAN view

Operation	Command	Description
802.1Q Vlan view	QVLANSetting	Execute in VLAN view

Switch (Vlan) # **qVLANSetting**

Switch (QVlan) #

802.1Q VLAN Configuration

Operation	Command	Description
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

Operation	Command	Description
Pvid setting	config pvid <portlist> <pvid>	<portlist> : 1, 2, 3... or all, 0 represents the CPU port <pvid>: 1-4095
Add Vlan	Add <vid> <portlist> <typelist>	<vid>: 1-4095 <portlist> : 1, 2, 3... or all, 0 represents the CPU port <typelist>: • M: UnModified • U: UnTagged • T: Tagged
Delete VLAN	Delete <vidlist>	<Vidlist>: 1-4095 or all
View vlan information	Show vlan <vidlist>	<Vidlist>: 1-4095 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]
```

9 QoS Configuration Command

Enter QoS configuration view.

Operation	Command	Description
Enter QoS configuration view	QoS	Execute in the system view

Switch# **QoS**

Switch(QoS) #

9.1 QoS Queue Mechanism Configuration

QoS queue mechanism configuration command.

Operation	Command	Description
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]

9.2 ToS and CoS Enablement

ToS and CoS enablement configuration command

Operation	Command	Description
-----------	---------	-------------

Operation	Command	Description
ToS and CoS enablement	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]
```

9.3 ToS/CoS Value Mapping

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

Operation	Command	Description
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 1,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 1,m,h,n
DSCP ( 1) :Low      DSCP(17) :Medium   DSCP(42) :High
DSCP(62) :Normal
```

9.4 Default Port Priority Configuration

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

Operation	Command	Description
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]
```

9.5 Display QoS configuration information

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

Operation	Command	Description
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;

10 Ring Configuration Command

Enter ring configuration view.

Operation	Command	Description
Enter ring configuration view	ring	Execute in the system view

Switch# **ring**

Switch(Ring)#

10.1 Enable or Disable Ring Network Function

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

Operation	Command	Description
Ring network enablement	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

10.2 Ring3 Configuration

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

Operation	Command	Description
Configure ring3	Config ring3 {1 2} <id> <LoopType> <port> <hellotime>	{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>: 0: Single 1: Couple 2: chain 3: Daul_homing <portlist>: ring network port <hellotime> : value range is 0-300
Modify ring3	Modify ring3 {1 2} <options> <parameter>	{1 2} : 1 represents ring group 1, 2 represents ring group 2 <options>: -h: Hellotime, ranging [0-300]*100ms -i: ring network ID, ranging 0-255 -t: ring network type, {0 1 2 3} -p: ring network port -s: ring network status, {enable or disable} <parameter>

Configuration Instance

Configure Port 3 and Port 4 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 3,4 0 // configure port 7,8 to Ring3,  
Ring type to Couple
```

[OK]

Tip: This configuration will be validated after restarting

10.3 RSTP Configuration

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

Operation	Command	Description
-----------	---------	-------------

Operation	Command	Description
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 96 112 128 144 160 176 192 208 224 240} <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	Description
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

10.4 Display RSTP Current Status

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

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

10.5 Display Ring Network Configuration Information

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

Operation	Command	Description
Display Ring network configuration information	show ring	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: 5, 6 type: Couple Hello_time: 0*100ms
state:Enable
Group:2 ID: 2 port: 3, 4 type: Single Hello_time: 0*100ms
state:Disable
```

11 Trunk Configuration Command

Enter port trunking view.

Operation	Command	Description
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	Description
Port trunking configuration	Config <trunkgroup> <portlist>	<trunkgroup> : trunk group 1, 2, 3, 4 <portlist>: trunking port 1,2,3,.....or all
Port trunking clear	Clean <trunkgroup>	<trunkgroup> : 1, 2, 3, 4, respectively represent the trunk group 1, 2, 3, 4. 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	Description
-----------	---------	-------------

Operation	Command	Description
Display configuration information of port trunking	Show <trunkgroup>	<trunkgroup> : 1, 2, 3, 4, respectively represent the trunk group 1, 2, 3, 4. 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	Description
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	Description
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	Description
-----------	---------	-------------

Operation	Command	Description
Configure SNMP Read/Write community	Config <orcomm> <rwcomm>	<orcomm>: read-only community name <rwcomm>: read-write community name
Configure SNMP gateway.	Tarp {1 2 3} <ip>	{1 2 3}: 1: SNMP gateway address 1 2: SNMP gateway address 2 3: SNMP gateway address 3 <ip>: SNMP gateway IP address

Configuration Instance

Set SNMP gateway to 192.168.11.1.

```
Switch(Snmp) # config 1 192.168.11.1
[OK]
```

12.3 SNMP Display

SNMP display command.

Operation	Command	Description
Display SNMP Information	Show	Execute in SNMP view

13 Alarm Configuration Command

Enter alarm configuration view.

Operation	Command	Description
Enter alarm configuration view	Alarm	Execute in the system view

Switch# **alarm**

Switch (Alarm) #

13.1 Alarm Configuration/Delete

The user can configure the alarm using the following commands

Operation	Command	Description
Relay alarm	Type {0 1}	{0 1}: 0: Disable 1: Enable
Configure the power supply alarm.	Power relay <powerID> {enable disable}	<powerID>: 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	Description
Display relay alarm information	Show type	Execute in alarm view
Display power supply alarm information	Show power <powerID>	<powerID> : 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 Statistics Configuration Command

Enter port statistics configuration view.

Operation	Command	Description
Enter port statistics view	Statistics	Execute in the system view

Switch# **statistics**

Switch(Statistics)#

14.1 Port Statistics Configuration View

Port statistics configuration.

Operation	Command	Description
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

Configuration Instance

Count the frame number and types of port 1.

Switch(Statistics)# show frames 1

InGoodOctets	96376	OutOctets	238454
InbadOctets	0	OutUnicast	337
InUnicasts	225	OutBroadCasts	3
InBroadcasts	354	OutMulticasts	101
InMulticasts	340	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

15 Mirror Configuration View

Enter port mirroring configuration view.

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

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

15.1 Port Mirroring Configuration/Delete

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

Operation	Command	Description
Configure port mirroring	Config {0 1 2} <mirror_port> <port>	{0 1}: 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]

15.2 Displays port mirroring information

View mirror information command:

Operation	Command	Description
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
```

16 Manage Configuration Command

Enter system management view

Operation	Command	Description
Enter system management view	Manage	Execute in the system view

Switch# **manage**

Switch (Manage) #

16.1 Network Diagnosis Setting

Enter system management view:

Operation	Command	Description
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
```

16.2 Display Device Network Address

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

Operation	Command	Description
Display IP, subnet mask, default gateway 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
```

16.3 IP Address, Default Gateway Settings

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

Operation	Command	Description
Device IP address configuration	IP <IP_address> <mask>	<IP_address>: IP address <mask>: subnet mask
Default gateway configuration	Gateway <gateway>	<gateway>: gateway 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.....
```

16.4 System Timeout Settings

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

Operation	Command	Description
System timeout settings	Set <time_out>	<time_out> : system timeout, value range is [0-60], 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.

16.5 User Name and Password Settings

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

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

16.6 Factory Default

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

Operation	Command	Description
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.....
```

16.7 Upload and download configuration files

Through the hyper terminal, the user can upload and download the configuration file with the following commands.

Operation	Command	Description
Upload Configuration	Upload	The file suffix is (.cfg)
Download configuration file	Download	The file suffix is (.cfg)

The steps to download the configuration file are as follows:

Step 1 Input command:

```
Switch (manage) # download
Please select file path and ready to receive file .
Or press [Esc] to quit .
```

Step 2 Configure the hyper terminal and select the folder where the files will be saved.

```
[transfer] → [receive file] → [browse] → [select folder] → [folder that user stores downloads]
→ [confirm] → [use receive protocol] → [Xmodem] → [receive] → [receive file name] → [file
name that user stores, the suffix is .cfg] → [confirm]
```

The steps to upload the configuration file are as follows:

Step 1 Input command:

```
System_manage# upload
Please send configuration file, or press [Esc] to quit .
CCCCCCCCCCCC
```



Notice

From the upload command input and the first C appears, if no operation within 2 minutes, and the system will automatically exit.

Step 2 Configure the hyper terminal and select the configuration file that will be uploaded with the suffix.cfg.

```
[transfer] → [send file] → [browse] → [select folder] → [profile that user uploads] → [open] →
[use receive protocol] → [Xmodem] → [send]
```

Step 3 End.

16.8 System Upgrade

Through the hyper terminal, the user can upgrade the system file with the following command (please confirm the correctness of the file before upgrading).

Operation	Command	Description
System upgrading.	Upgrade	The file suffix is (.bin)

The steps to upgrade system files are as follows

Step 1 Input command:

```
Switch(manage) # upgrade
```

Please send upgrade file, or press [Esc] to quit .

```
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
```

Step 2 Configure the hyper terminal and select the upgrade file that will be uploaded with the suffix.bin.

```
[transfer] →[send file] →[browse] →[select folder] →[profile that user upgrades] →[open]
```

```
→ [use receive protocol] →[Xmodem] →[send]
```

Step 3 End.

17 Multicast Configuration Command

Enter the static multicast filter view.

Operation	Command	Description
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	Description
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	Description
-----------	---------	-------------

Operation	Command	Description
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	Description
Delete multicast address	Delete <1-15>	<1-15> : entry 1-15 of 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	Description
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	Description
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	Description
-----------	---------	-------------

Operation	Command	Description
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 up Device Information

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

Operation	Command	Description
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	Description
Enter time configuration view	Time	Execute in the system view

Switch# **time**

Switch(Time)#

19.1 Time Configuration

Time Configuration Command

Operation	Command	Description
Disable time configuration	close	Execute in time configuration view
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 Displays the Time Configuration View

Displays the time configuration information.

Operation	Command	Description
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:
```

```
The system time:1980-11-16,08:03:47, Sun
```

20 TFTP Configuration Command

Enter TFTP Configuration View.

Operation	Command	Description
Enter TFTP configuration view	TFTP	Execute in the system view

Switch# **TFTP**

Switch (TFTP) #

20.1 TFTP Configuration

TFTP configuration command

Operation	Command	Description
IP address of the TFTP server	Server <ip_address>	<ip_address> : TFTP server IP address, for example 192.168.1.254
Upload Configuration	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.

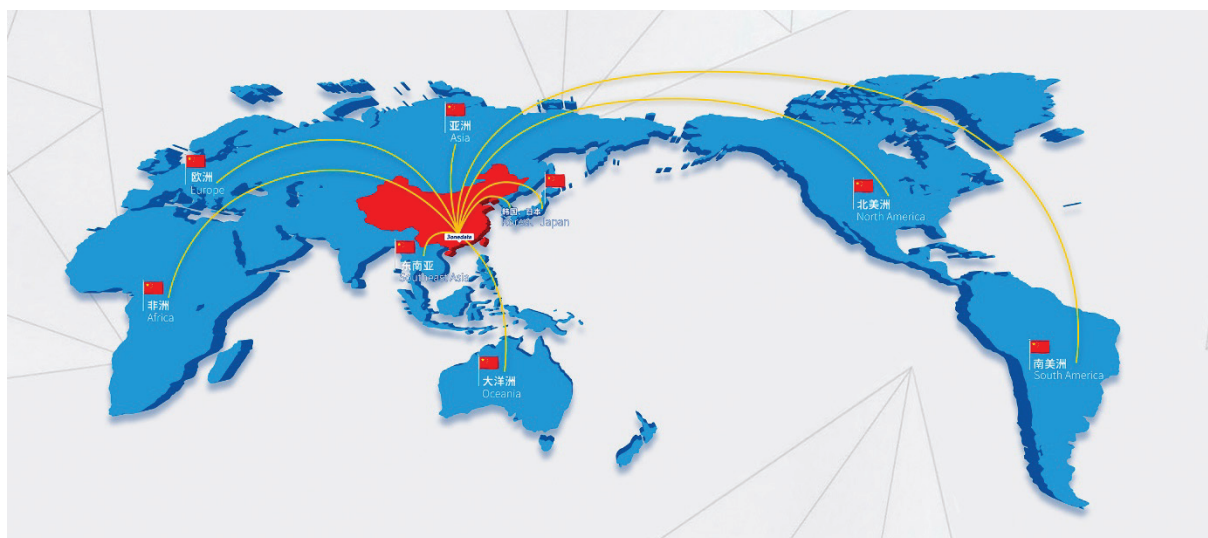
Operation	Command	Description
Display TFTP configuration information	Show TFTP_config	Execute in the TFTP view

Configuration Instance

Display TFTP configuration information.

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

3onedata



3onedata Co., Ltd.

Headquarter address: 3/B, Zone 1, Baiwangxin High Technology Industrial Park, Song Bai Road, Nanshan District, Shenzhen, 518108, China

Technology support: tech-support@3onedata.com

Service hotline: 400-880-4496

Official Website: <http://www.3onedata.com>