Basic Configuration CLI Reference Guide

Model: S3700-24T4F

CLI REFERENCE GUIDE

Table of Contents

Chapter 1 System Management Commands

1.1 Commands for Managing Configuration Files

Commands for managing configuration files are shown in the following:

- copy
- delete
- dir
- ip address
- ip route
- show configuration
- format
- more

1.1.1 copy

To read files from the TFTP server to the switch, run copy.

copy tftp<*:filename*> {**flash**<*:filename*>|**rom**} [*ip_addr*]

Parameters

Parameters	Description
tftp<:filename>	Reads files from the TFTP server. The filename parameter shows the corresponding file name. If the filename parameter is not designated, you are prompted to enter the file name after the copy command is run.
flash <:filename>	Writes files into the flash of the switch. The filename parameter shows the corresponding file name. If the filename parameter is not designated, you are prompted to enter the file name after the copy command is run.
rom	Updates the bootrom of the switch.
ip_addr	Means the IP address of the TFTP server. If this parameter is not designated, you are prompted to enter the IP address after the copy command runs.

Default Value

None

Command Mode

Monitoring Mode

Usage Guidelines

None

Example

monitor#copy tftp:switch.bin flash:switch.bin 192.2.2.1

The example shows how to copy the switch.bin files from the TFTP server to the flash of the switch.

Related Command

None

1.1.2 delete

To delete a file, run delete.

delete *file-name*

Parameters

Parameters	Description
file-name	Means a file name with up to 20 characters.

Default Value

If the file name is not entered, the startup-config files will be deleted by default.

Command Mode

Monitoring Mode

Usage Guidelines

None

Related Command

None

1.1.3 dir

To display a file and a directory, run dir.

dir *file-name*

Parameters

Parameters	Description
file-name	Means a file name with up to 20 characters.

Default Value

None

Command Mode

Monitoring Mode

Usage Guidelines

None

Related Command

None

1.1.4 ip address

To designate the IP address of the Ethernet port, run ip address in monitor status.

ip address *ip-address mask*

Parameters

Parameters	Description
ip-address	IP address
mask	Mask of the IP network

Default Value

None

Command Mode

Monitoring Mode

Usage Guidelines

None

Example

monitor#ip address 192.168.1.1 255.255.255.0

Related Command

ip route

ping

1.1.5 ip route

To designate a default gateway, run ip route in monitor status.

ip route default gw_ip_addr

Parameters

Parameters	Description
gw_ip_addr	Stands for a default gateway address.

Default Value

None

Command Mode

Monitoring Mode

Usage Guidelines

None

Example

monitor#ip route default 192.168.1.3

Related Command

ip address

1.1.6 show configuration

To display the current configuration file of the system, run show configuration.

Parameters

None

Default Value

None

Command Mode

Monitoring Mode

Usage Guidelines

None

Related Command

None

1.1.7 format

To format the file system, run format in EXEC mode.

format

Parameters

None

Default Value

None

Command Mode

EXEC

Usage Guidelines

If the format command is used, all files in the file system will be lost.

Related Command

None

1.1.8 more

To display the content of a file, run more in EXEC mode.

more *file-name*

Parameters

Parameters	Description
file-name	Means a file name with up to 20 characters.

Default Value

None

Command Mode

EXEC

Usage Guidelines

If all characters in the file are legible, they are displayed in the ASCII code; otherwise, it will be displayed in the binary system.

Related Command

None

1.2 Basic System Management Commands

Basic System Management Commands

- bootflash

- cd
- chinese
- english
- date
- md
- pwd
- rd
- rename
- reboot
- show break
- alias
- boot system flash
- help
- show
- history
- show alias

1.2.2 boot flash

To start a device from the designated file in monitor mode, run the following command.

boot flash *filename*

Parameters

Parameters	Description
filename	Stands for the name of the designated file.

Default Value

None

Command Mode

Monitoring Mode

Usage Guidelines

After a user enters the monitor state, you can use this command to start a device.

Example

monitor#boot flash switch.bin

Related Command

None

1.2.3 cd

To change the current directory, run the following command in the monitoring mode.

cd *directory|..*

Parameters

Parameters	Description
directory	Means a file name with up to 20 characters.
..	Parent directory

Default Value

None

Command Mode

Monitoring Mode

Usage Guidelines

None

Example

monitor#cd my_dir

Related Command

pwd

1.2.4 chinese

To switch the command prompt to Chinese mode, use the chinese command.

Parameters

None

Default Value

None

Command Mode

Monitoring Mode

Usage Guidelines

None

Example

None

Related Command

None

1.2.5 date

To set system absolute time, run command "date".

Parameters

None

Default Value

None

Command Mode

Monitoring Mode

Usage Guidelines

This command is used to set the absolute time for the system. For the switch with a battery-powered clock, the clock will be powered by the battery. If the clock doesn't keep good time, you need to change the battery.

For the switch without a battery-powered clock, the system date is configured to Jan 1st,1970 after the reboot of the switch, and user needs to set the current time each time when starting the switch.

Example

```
monitor#date
The current date is 2000-7-27 21:17:24
Enter the new date(yyyy-mm-dd):2000-7-27
Enter the new time(hh:mm:ss):21:17:00
```

Related Command

None

1.2.6 english

To switch the command prompt to english mode, use the english command.

Parameters

None

Default Value

None

Command Mode

Monitoring Mode

Usage Guidelines

None

Example

None

Related Command

None

1.2.7 md

md *directory*

Parameters

Parameters	Description
directory	Means a file name with up to 20 characters.

Default Value

None

Command Mode

Monitoring Mode

Usage Guidelines

The command can be used to set a directory.

Related Command

None

1.2.8 pwd

Parameters

None

Default Value

None

Command Mode

Monitoring Mode

Usage Guidelines

The command can be used to display the current directory.

Related Command

None

1.2.9 rd

rd *directory*

Parameters

Parameters	Description
directory	Means a file name with up to 20 characters.

Default Value

None

Command Mode

Monitoring Mode

Usage Guidelines

The system prompts if the directory is not empty. The system prompts if the directory doesn't exist. To delete a command, use the rd command.

Related Command

None

1.2.10 rename

To rename a file in a file system, use the rename command.

rename *old_file_name new_file_name*

Parameters

Parameters	Description
old_file_name	The original filename.
new_file_name	The new filename.

Default Value

None

Command Mode

Monitoring Mode

Usage Guidelines

None

Related Command

None

1.2.11 reboot

Parameters

None

Default Value

None

Command Mode

Monitoring Mode

Usage Guidelines

The command can be used to reboot the switch.

Related Command

None

1.2.12 alias

alias *alias_name command_line*

Parameters

Parameters	Description
alias_name	Name the alias name.
command_line	The command of naming the alias name.

Default Value

None

Command Mode

Configuration mode

Usage Guidelines

The command can be used to replace "command_line" with "alias_name". For instance, alias update1 copy tftp:BDMSU8508_4.0.0B.bin flash:switch.bin 10.168.30.188. The command "copy tftp:BDMSU8508_4.0.0B.bin flash:switch.bin 10.168.30.188 " will automatically run on the switch only update 1 is input.

Example

Replace command "copy tftp:MSU8508_4.0.0B.bin flash:switch.bin 10.168.30.188" with "update1".

alias update1 copy tftp:MSU8508_4.0.0B.bin flash:switch.bin 10.168.30.188

Related Command

None

1.2.13 boot system flash

To designate the systematic mirror file that will be executed when the system is started, run the following first command; to cancel this settings, run the following second command.

boot system flash *filename*

no boot system flash *filename*

Parameters

Parameters	Description
filename	Means a file name with up to 20 characters.

Default Value

None

Command Mode

Global configuration mode

Usage Guidelines

If the user doesn't configure the command, the system will execute the first system mirror file of the flash file system. If the user configures with multiple commands, the system executes the mirror documents in turn. If the document doesn't exist or occurs mirror. The next file will be executed consecutively. If the file doesn't run successfully, the system enters the monitor mode.

Example

config#boot system flash switch.bin

Related Command

None

1.2.14 help

help

Parameters

None

Default Value

None

Command Mode

EXEC

Usage Guidelines

The command can be used to show the help system of the switch.

Example

The following example shows how to show the help system of the switch.

switch# help

Help may be requested at any point in a command by entering a question mark '?', If nothing matches, the help list will be empty and you must backup until entering a '?' shows the available options.

Two styles of help are provided:

1. Full help is available when you are ready to enter a command argument (e.g.'show ?') and describes each possible argument.

2. Partial help is provided when an abbreviated argument is entered and you want to know what arguments match the input (e.g. 'interface e?'.)

Related Command

None

1.2.15 history

To show history command, run the following command. To return to the default setting, use the no form of this command.

[no] history [+ <*count*> | - <*count*> | clear]

Parameters

Parameters	Description
+ <count>	To display the count<1-20> historical command from the beginning to the end.
- <count>	To display the count<1-20> historical command from the end to the beginning.

Default Value

If there are no more than 20 commands executed, all historical command lines will be displayed from the beginning to the end. If there are more than 20 commands executed, all historical command lines will be displayed from the beginning to the end.

Command Mode

Any command mode

Usage Guidelines

The modularized switch can save up to 20 historical commands. You can invoke these commands with the "up" or “down” key or directly use it after edition. The command can be used to browse the history command. You can run the [no] history command to delete the history command.

Example

The following example shows how to display the latest 5 history commands from the end to the beginning.

```
switch#history - 5
config
int e1/1
no ip addr
ip addr 192.2.2.49 255.255.255.0
exit
```

Related Command

None

1.2.16 show

To display the relevant information of the system, which or specific ones of which can be filtered through the filter, run the following command:

show <sub-command> [| <begin | include | exclude | redirect> <*WORD*> [*SEPARATOR WORD*]]

Parameters

Parameters	Description
sub-command	Stands for a child command.
|	Uses the output filter.
begin	Means to show the result of the show command starting with a specific word.
include	Means to show the lines of the result of the show command containing a specific word.
exclude	Means not to show the lines of the result of the show command containing a specific word.
redirect	Redirects the result of the show command to the file in the designated file system.
WORD	Stands for a designated word, which is the designated filename as to the redirect command.
SEPARATOR WORD	Stands for the designated separator, which is space by default to separate the words.

Default Value

None

Command Mode

The EXEC mode or the configuration mode

Usage Guidelines

This command can be used to filter the useless information in the result of the show command, especially when the result is too much to read. For example, if you want to browse a designated MAC address in a MAC address table, which contains a lot of MAC addresses, this command will give you convenience for you.

Example

The following example shows how to display the lines, in which the word "interface" is contained, in the result of show running-config.

```
Switch#show running-config | include interface
Building configuration...

Current configuration:
!
interface GigaEthernet0/1
interface GigaEthernet0/2
interface GigaEthernet0/3
interface GigaEthernet0/4
interface GigaEthernet0/5
interface GigaEthernet0/6
interface GigaEthernet0/7
interface GigaEthernet0/8
```

Related Command

1.2.17 show alias

To display all aliases or the designated alias, run the following command.

show alias [<*alias name*>]

Parameters

Parameters	Description
alias name	Name the alias name.

Default Value

Display all aliases according the format "alias name=command line".

Command Mode

The EXEC mode or the configuration mode

Usage Guidelines

None

Example

The following example shows how to display all aliases of the current system:

```
switch_config#show alias
hualab=date
router=snmp
```

Related Command

alias

1.2.18 show break

It is used to display the abnormal information of the system. The system stores all abnormal information in the latest running. The abnormal information contains the times of abnormity, the stack content and the invoked functions when abnormity occurs.

Parameters

None

Default Value

None

Command Mode

Monitoring Mode

Usage Guidelines

The command is only used for debugging.

Related Command

None

Chapter 2 Terminal Service Configuration Commands

2.1 Telnet Configuration Commands

The chapter describes telnet and relative commands. The telnet command is used to establish a session with the remote server. The telnet command is always working at the UNIX operating systems. Option negotiation is required. Telnet does not provide itself the login authentication. Telnet is different from Rlogin because telnet does not provide itself password check.

The telnet configuration commands include:

- telnet
- ip telnet
- where
- disconnect
- resume
- clear Telnet
- show Telnet
- debug Telnet

2.1.2 telnet

To establish a telnet session, run the following command:

telnet *server-ip-addr/server-host-name* [**/port** *port*][**/source-interface** *interface*] [**/local** *local-ip-addr*] [**/debug**] [**/echo | /noecho**] [**/script** *scriptname*]

Parameters

Parameters	Description
server-ip-addr	Dotted-decimal IP address of the remote server
server-host-name	Name of the remote server, which is configured by the ip hostcommand
Port	Telnet port of the remote server
interface	Local interface where the telnet connection is originated
local-ip-addr	Local IP address where the telnet connection is originated
/debug	A negotiation process for enabling the debug at the client side and printing the connection

/echo */noecho*	Enable or disable the local echo. The default value is noecho.
scriptname	A script name used for auto login

Default Value

The default port number is 23. The interface has no default number.

Command Mode

EXEC and global configuration mode

Usage Guidelines

You can use one of the following command lines to establish a remote login.

telnet server-ip-addr/server-host-name

In this case, the application program directly sends the telnet login request to port 23 of the remote server. The local IP address is the IP address which is nearest to the peer and found by the routing table.

telnet server-ip-addr/server-host-name /port port

In this case, the application program sends a telnet login request to the port of the peer.

telnet server-ip-addr/server-host-name /source-interface interface

In this case, the application program uses the IP address on the interface ass the localIP address.

telnet server-ip-addr/server-host-name /debug

In this case, the application program opens the debug and exports the connection at the client side.

telnet server-ip-addr/server-host-name echo/noecho

In this case, the application program enables or disables the local echo. The local echo is disabled by default. Only when the server is not in charge of echo is the local echo enabled.

telnet server-ip-addr/server-host-name /script scriptname

Before executing the automatic login command of the script, run the command **ip telnet script** to configure the script.

The previous commands can be used together.

During the session with the remote server, you can press the Q button to exit the session. If the session is not manually quit, the session will be complete after a10-second timeout.

Example

Suppose you want to telnet server 192.168.20.124, the telnet port of the server is port 23 and port 2323, and the local two interfaces are e1/1(192.168.20.240) and s1/0(202.96.124.240). You can run the following operations to complete the remote login.

1. telnet 192.168.20.124 /port 2323

In this case, the telnet connection with port 2323 of the peer is to be established. The local IP address of the peer is 192.168.20.240.

2. telnet 192.168.20.124 /source-interface vlan2

In this case, the telnet connection with port 23 of the peer is to be established. The local IP address of the peer is 202.96.124.240.

3. telnet 192.168.20.124 /local 192.168.20.240

In this case, the telnet connection with port 23 of the peer is to be established. The local IP address of the peer is 192.168.20.240.

4. telnet 192.168.20.124 /debug

In this case, the telnet connection negotiation with port 23 of the peer will be printed out.

5. telnet 192.168.20.124 /echo

In this case, the local echo is enabled. If the echo is also enabled at the server side, all input will be echoed twice.

6. telnet 192.168.20.124 /script s1

Use login script S1 for automatic login.

2.1.3 ip telnet

To establish a telnet session, run the following command.

ip telnet max-user *num*

ip telnet enable

ip telnet source-interface vlan *value*

ip telnet access-class *accesslist*

ip telnet listen-port *start-port [end-port]*

ip telnet script *scriptname 'user_prompt' user_answer 'pwd_prompt' pwd_answer*

Parameters

Parameters	Description
num	telnet maximum connections
value	Local interface where the telnet request is originated
accesslist	Access list name to limit the source address when the local client receives the connection

start-port	Starting port number designated at the listening port area
end-port	End port number designated at the listening port area
scriptname	Name of the login script
user_prompt	Username prompt returned by the telnet server
user_answer	Username response information from the client side
pwd_prompt	Password prompt returned by the telnet server
pwd_answer	Password response information submitted by the client side

Default Value

None

Command Mode

Global configuration mode

Usage Guidelines

- Run the following command to configure the local interface for originating the telnet connection:

  ip telnet source-interface *interface*

  In this case, all telnet connections originated afterwards are through the interface. The configuration command is similar to the command telnet source-interface interface. However, the telnet command has no interface parameters followed. When the interface is configured and the telnet command has interface parameters, the interface followed the telnet command is used.

- Run the following command to configure the name of the access list which performs limitation on local telnet connection reception.

  ip telnet access-class *accesslist*

  In this case, the access list will be checked when the server accepts all telnet connections.

- Run the following command to configure a port, except the default port 23, to receive the telnet service.

  ip telnet listen-port *start-port [end-port]*

  Note: If the end port number is not designated, the listening will be executed at a specific port. The number of the designated ports cannot be bigger than 16 and the port number ranges between 3001 and 3999.

- Run the following command to configure the telnet login script.

  ip telnet script s1 'login:' switch 'Password:' test

  Note: When the script is configured, the username prompt and password prompt and their answers must be correctly matched, especially the prompt information is capital sensitive and has inverted comma (''). If one of them is wrongly configured, the automatic login cannot be performed.

Note:

You can add the **NO** prefix on the above four commands and then run them to cancel previous configuration.

Example

1. ip telnet source-interface vlan1

In this case, the s1/0 interface will be adopted to originate all telnet connections afterwards.

2. ip telnet access-class abc

In this case, all the received telnet connections use access list abc to perform the access list check.

3. ip telnet listen-port 3001 3010

Except port 23, all ports from port 3001 to port 3010 can receive the telnet connection.

4. ip telnet script s1 'login:' switch 'Password:' test

The login script s1 is configured. The username prompt is login: and the answer is switch. The password prompt is Password: and the answer is test.

2.1.4 ctrl-shift-6+x (the current connection is mounted)

To mount the current telnet connection, run the following command:

ctrl-shift-6+x

Parameters

None

Default Value

None

Command Mode

Any moment in the current telnet session

Usage Guidelines

You can use the shortcut key to mount the current telnet connection at the client side.

Example

switchA>telnet 192.168.20.1
Welcome to Multi-Protocol 3700 Series switch

```
switchB>ena
switchB#(press ctrl-shift-6+x)
switchA>
```

You press **ctrl-shift-6+x** to mount the telnet connection to switch B and return to the current state of switch A.

2.1.5 where

To check the currently mounted telnet session, run the following command:

where

Parameters

None

Default Value

None

Command Mode

Global configuration mode

Usage Guidelines

The command can be used to check the mounted outward telnet connection at the client side. The displayed information contains the serial number, peer address, local address and local port.

Note:

The **where** command is different from the **show telnet** command. The former is used at the client side and the displayed information is the outward telnet connection.

Example

```
switchA>telnet 192.168.20.1
Welcome to Multi-Protocol 3700 Series switch
switchB>ena
switchB#(press ctrl-shift-6+x)
switchA> telnet 192.168.20.2
Welcome to Multi-Protocol 3700 Series switch
switchC>ena
switchC#(press ctrl-shift-6+x)
switchA>where
NO.          Remote Addr      Remote Port          Local Addr      Local Port
  1       192.168.20.1               23     192.168.20.180           20034
```

2	192.168.20.2	23	192.168.20.180	20035

Enter **where** at switch A. The mounted outward connection is displayed.

2.1.6 resume

To resume the currently mounted outward telnet connection, run the following command:

resume *no*

Parameters

Parameters	Description
no	Number of the currently mounted telnet session that is checked through the where command

Default Value

None

Command Mode

Global configuration mode

Usage Guidelines

The command can be used to resume the currently mounted outward telnet connection at the client side.

Example

```
switchA>telnet 192.168.20.1
Welcome to Multi-Protocol 3700 Series switch
switchB>ena
switchB#(press ctrl-shift-6+x)
switchA> telnet 192.168.20.2
Welcome to Multi-Protocol 3700 Series switch
switchC>ena
switchC#(press ctrl-shift-6+x)
switchA>where
NO.          Remote Addr      Remote Port          Local Addr       Local Port
   1         192.168.20.1              23     192.168.20.180            20034
   2         192.168.20.2              23     192.168.20.180            20035
switchA>Resume 1
  [Resuming connection 1 to 192.168.20.73 . . . ]
(enter)
switchB#
```

After you enter where at switch A and the mounted outward connection of switch A is displayed, enter Resume1.You will be prompted that connection 1 is resumed. The command prompts of switch B are displayed after the Enter key is pressed.

2.1.7 disconnect

To clear the currently mounted outward telnet session, run the following command:

disconnect *no*

Parameters

Parameters	Description
no	Number of the currently mounted telnet session that is checked through the where command

Default Value

None

Command Mode

Global configuration mode

Usage Guidelines

The command can be used to clear the currently mounted outward telnet connection at the client side.

Note:

The **disconnect** command is different from the **clear telnet** command. The former is used at the client side and clears the outward telnet connection. The latter is used at the server and clears the inward telnet connection.

Example

```
switchA>telnet 192.168.20.1
   Welcome to Multi-Protocol 3700 Series switch
switchB>ena
switchB#(press ctrl-shift-6+x)
switchA> telnet 192.168.20.2
   Welcome to Multi-Protocol 3700 Series switch
switchC>ena
switchC#(press ctrl-shift-6+x)
switchA>where
NO.          Remote Addr      Remote Port          Local Addr       Local Port
 1        192.168.20.1              23       192.168.20.180            20034
```

```
 2          192.168.20.2                23          192.168.20.180              20035
switchA>disconnect 1
<Closing connection to 192.168.20.1> <y/n>y

 Connection closed by remote host.
switchA>
```

After you enter where at switch A and the mounted outward connection of switch A is displayed, enter disconnect 1. You will be prompted whether the connection of switch B is closed. After you enter Y, the connection is closed.

2.1.8 clear telnet

To clear the telnet session at the server, run the following command:

clear telnet *no*

Parameters

Parameters	Description
no	Number of the telnet session that is displayed after the show telnet command is run

Default Value

None

Command Mode

EXEC

Usage Guidelines

The command can be used to clear the telnet session at the server.

Example

clear telnet 1

The telnet session whose sequence number is 1 is cleared at the server (192.168.20.220:1097).

2.1.9 show telnet

To display the telnet session at the server, run the following command:

show telnet

Parameters

None

Default Value

None

Command Mode

All command modes except the user mode

Usage Guidelines

The command can be used to display the telnet session at the server. The displayed information includes the sequence number, peer address, peer port, local address and local port.

Example

Switch# show telnet

If you run the previous command, the result is shown as follows:

NO.	Remote Addr	Remote Port	Local Addr	Local Port
1	192.168.20.220	1097	192.168.20.240	23
2	192.168.20.180	14034	192.168.20.240	23

2.1.10 debug telnet

The following is a format of the debug command for the telnet session:

debug telnet

Parameters

None

Default Value

None

Command Mode

EXEC

Usage Guidelines

The command can be used to enable the switch of the telnet debug.

If the switch of the telnet debug is enabled, the negotiation processes of all the incoming telnet sessions are printed on the window that the debug command invokes. The debug telnet command is different from the telnet debug command. The former is to export the debug information of the telnet session connected to the server. The latter is to export the debug information of the telnet session that the client originates.

Example

debug telnet

The debug information of the telnet session that is connected to the server is displayed.

2.2 Terminal Configuration Commands

The terminal configuration commands include:

- attach-port
- autocommand
- clear line
- connect
- disconnect
- exec-timeout
- length
- line
- location
- login authentication
- monitor
- no debug all
- password
- resume
- show debug
- show line
- terminal-type
- terminal monitor

- terminal width
- terminal length
- where
- width

2.2.2 attach-port

To bind the telnet listening port to the line vty number and enable the telnet connection at a specific port generates vty according to the designated sequence number, run the following command:

[no] attach-port *PORT*

Parameters

Parameters	Description
Port	Listening port of the telnet server (3001-3999)

Default Value

None

Command Mode

Line configuration mode

Example

Bind listening port 3001 to line vty 2 3.

switch_config# line vty 2 3
switch_config_line#attach-port 3001

2.2.3 autocommand

To set the automatically-run command when user logs in to the terminal, run the following command. The connection is cut off after the command is executed.

autocommand *LINE*

no autocommand

Parameters

Parameters	Description
LINE	Command to be executed

Command Mode

Line configuration mode

Example

switch_conf#line vty 1
switch_conf_line#autocommand pad 123456

After you successfully log in, the host whose X.121 address is 123456 will be automatically padded.

2.2.4 clear line

To clear the designated line, run the following command:

clear line [console | *vty*] [*number*]

Parameters

Conform to the line command

Command Mode

EXEC

Example

switch#clear line vty 0

2.2.5 connect

To connect Telnet server, run the following command:

connect *server-ip-addr/server-host-name* {[/**port** *port*][/**source-interface** *interface*] [/**local** *local-ip-addr*]} [/**script** *word*]

Parameters

Parameters	Description
server-ip-addr/server-host-name	IP address or host name of the server
Port	Port number
interface	Interface name where the Telnet connection is originated
local-ip-addr	Local IP address where the telnet connection is originated
word	Name of the script

Command Mode

All Configuration Modes

Example

switch# connect 192.168.20.1

2.2.6 disconnect

To delete the suspended telnet session, run the following command:

disconnect *N*

Parameters

Parameters	Description
N	number of the suspended telenet dialog

Command Mode

All Configuration Modes

Example

switch#disconnect 1

2.2.7 exec-timeout

To set the max idle time of the terminal, run the following command:

[**no**] **exec-timeout** [*time*]

Parameters

Parameters	Description
time	Idle time in seconds Value range: 0-86400

Default Value

0 (no time-out limit)

Command Mode

Line configuration mode

Example

The following example shows how to set the idle time of the line to 1 hour.

switch_config_line#exec-timeout 3600

2.2.8 length

To set the line number on the screen of the terminal, run the following command:

[no] length [*value*]

Parameters

Parameters	Description
value	Value range: 0 to 512. The value 0 means there is no pause.

Default Value

24

Command Mode

Line configuration mode

2.2.9 line

To enter the line configuration mode, run the following command:

line [**console |vty**] [*number*]

Parameters

Parameters	Description
console	Monitoring line, which has only one number 0
vty	Virtual lines such as Telnet, PAD and Rlogin
number	Number in the line of the type

Command Mode

Global configuration mode

Example

The following example shows how to enter the line configuration mode of VTY 0 to 10.

switch_config#line vty 0 10

2.2.10 location

To record the description of the current line, run the following command:

location [*LINE*]

no location

Parameters

Parameters	Description
LINE	Description of the current line

Command Mode

Line configuration mode

2.2.11 login authentication

To set line login authentication, run the following command:

[**no**] **login authentication** [**default** | *WORD*]

Parameters

Parameters	Description
default	Default authentication mode
WORD	Name of the authentication list

Command Mode

Line configuration mode

Example

switch_conf_line#login authentication test

The above example shows how to set the authentication list of the line to test.

2.2.12 monitor

To export the log and debugging information to the line, run the following command:

[**no**] **monitor**

Parameters

None

Command Mode

Line configuration mode

Example

switch_config_line#monitor

2.2.13 no debug all

To shut down all debugging output of the current VTY, run the following command:

no debug all

Parameters

None

Command Mode

EXEC

Example

switch#no debug all

2.2.14 password

To set the password for the terminal, run the following command:

password {*password* | [encryption-type] *encrypted-password*}

no password

Parameters

Parameters	Description

password	Password configured on the line, which is entered in the plaintext form and whose maximum length is 30 bits.
[encryption-type] *encrypted-password*	encryption-type means the encryption type of the password. Currently, products only support two encryption modes: 0 and 7. The number 0 means the password is not encrypted and the plaintext of password is directly entered. It is the same as the way of directly entering the password. The number 7 means the password is encrypted through an algorithm . You need to enter the encryption text for the encrypted password. The encryption text can be copied from the configuration files of other switches.

For password encryption, refer to the explanation of the commands service**password-encryption** and **enable password**.

Command Mode

Line configuration mode

Example

switch_conf#line vty 1
switch_conf_line#password test

The above example shows how to set the login password of VTY1 to test.

2.2.15 resume

To resume the mounted telnet session, run the following command:

resume *N*

Parameters

Parameters	Description
N	number of the suspended telenet dialog

Command Mode

All Configuration Modes

Example

switch#resume 1

2.2.16 show debug

To display all debugging information of the current VTY, run the following command:

show debug

Parameters

None

Command Mode

EXEC or global configuration mode

Example

```
Switch# show debug
http authentication debug is on
http cli debug is on
http request debug is on
http response debug is on
http session debug is on
http erro debug is on
http file debug is on
TELNET:
Incoming Telnet debugging is on
```

2.2.17 show line

To display the status of the current effective line, run the following command:

show line {[**console** | **vty**] [*number*]}

Parameters

If there is no parameter followed, the status of all effective lines will be displayed.

The definition of other parameters is similar to that of the line command.

Command Mode

Non-user mode

2.2.18 terminal length

To change the line number on the current terminal screen, run the following command. The parameter can be obtained by the remote host. The rlogin protocol uses the parameter to notify the remote UNIX host. Run the no terminal length command to resume the default value:

terminal length *length*

no terminal length

Parameters

Parameters	Description
length	Line number displayed on each screen Value range: 0-512

Default Value

Pause when 24 lines are displayed on the screen.

Command Mode

Global configuration mode

Usage Guidelines

This command only takes effect on the current terminal. When a session is terminated, the attributes of this terminal are also gone.

Example

switch#terminal length 40

Related Command

line

2.2.19 terminal monitor

To display the output debug and the system error information, run the following command. To shutdown the monitor, use the no form of this command.

terminal monitor

no terminal monitor

Parameters

None

Default Value

The system's console port is enabled by default, while other terminals are disabled by default.

Command Mode

Global configuration mode

Usage Guidelines

This command only takes effect on the current terminal. When a session is terminated, the attributes of this terminal are also gone.

Example

switch#terminal monitor

Related Command

line

debug

2.2.20 terminal width

In default settings, the switch is to export 80 characters in each line. If the default settings cannot meet your requirements, you can reset it. The parameter can be obtained by the remote host. To set the character number in each line, run the following command. To return to the default setting, use the no form of this command.

terminal width *number*

no terminal width

Parameters

Parameters	Description
number	Character number of each line

Default Value

80 characters in each line

Command Mode

Global configuration mode

Usage Guidelines

This command only takes effect on the current terminal. When a session is terminated, the attributes of this terminal are also gone.

Example

switch#terminal width 40

Related Command

line

2.2.21 terminal-type

To set the terminal type, run the following command:

[**no**] **terminal-type** [*name*]

Parameters

Parameters	Description
name	Terminal name Terminal types currently supported are VT100, ANSI and VT100J.

Default Value

ANSI

Command Mode

Line configuration mode

2.2.22 where

To check the currently mounted telnet session, run the following command:

where

Parameters

None

Command Mode

All Configuration Modes

Example

switch#where

2.2.23 width

To set the terminal width of the line, run the following command:

[**no**] **width** [*value*]

Parameters

Parameters	Description
value	Value range: 0 to 256. The value 0 means no execution.

Default Value

80

Command Mode

Line configuration mode

Chapter 3 Maintenance and Debugging Tool Commands

3.1 Network Testing Tool Commands

3.1.2 ping

To test host accessibility and network connectivity, run the following command. After the ping command is run, an ICMP request message is sent to the destination host, and then the destination host returns an ICMP response message.

ping [-a][-d][-**f**] [-**i** {source-ip-address}] [-**m** {source-interface}] [-**j** host1 [host2 host3 …]] [–**k** host1 [host2, host3 …]] [-**l** length] [-**n** number] [-**r** hops] [-**s** tos] [-**t** ttl] [-**v**] [-**w** *waittime*] [–**b** *interval*] [-**c**] **host**

Parameters

Parameters	Description
-a	Sets the ping command keeping running until it is interrupted.
-d	Sets the direct routing to the port without checking the routing table when forwarding the packet.
-f	Sets the DF digit (message is not segmented). If the message required to be sent is larger than the MTU of the path, the message will be dropped by the routing switch on the path and the routing switch will then return an ICMP error message to the source host. If network performance has problems, one node in the network may be configured to a small MTU. You can use the –f option to decide the smallest MTU on the path. Default value: No resetting
-i	Sets the source IP address of the message or the IP address of an interface. Default value: Main IP address of the message-sending interface
source-ip-address	Source IP address adopted by the message
source-interface	Message takes the IP address of the source-interface interface as the source address.
-j *host1* [*host2 host3…*]	Sets the relaxation source route. Default: Not set
-k *host1* [*host2 host3…*]	Sets the strict source route Default: Not set
-l *length*	Sets the length of ICMP data in the message. Default: 56 bytes
-n *number*	Sets the total number of messages. Default: 5 messages
-r *hops*	Records routes. Up to hops routes are recorded. Default: not record
-s *tos*	Sets IP TOS of the message to tos. Default Value:0.
-t *ttl*	Sets IP TTL of the message to ttl. Default Value:255.

-v	Detailed output
-w *waittime*	Time for each message to wait for response Default Value:2seconds.
-b *interval*	Sets the time interval of sending ping packet. Unit: 10ms; Value range: 0-65535; Default Value: 0.
-c	Simple output
host	Destination host

Command Mode

EXEC and global configuration mode

Usage Guidelines

The command supports that the destination address is the broadcast address or the multicast address. If the destination address is the broadcast address (255.255.255.255) or the multicast address, the ICMP request message is sent on all interfaces that support broadcast or multicast. The routing switch is to export the addresses of all response hosts. By pinging multicast address224.0.0.1, you can obtain the information about all hosts in directly-connected network segment that support multicast transmission.

Press the Q key to stop the ping command.

Simple output is adopted by default.

Parameters	Description
!	A response message is received.
.	Response message is not received in the timeout time.
U	The message that the ICMP destination cannot be reached is received.
Q	The ICMP source control message is received.
R	The ICMP redirection message is received.
T	The ICMP timeout message is received.
P	The ICMP parameter problem message is received.

The statistics information is exported:

Parameters	Description
packets transmitted	Number of transmitted messages
packets received	Number of received response messages, excluding other ICMP messages
packet loss	Rate of messages that are not responded to
round-trip min/avg/max	Minimum/average/maximum time of a round trip (ms)

Example

```
switch#ping -l 10000 -n 30 192.168.20.125
PING 192.168.20.125 (192.168.20.125): 10000 data bytes
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
--- 192.168.20.125 ping statistics ---
30 packets transmitted, 30 packets received, 0% packet loss
round-trip min/avg/max = 50/64/110 ms
```

3.1.3 traceroute

To detect which routes have already reached the destination, run the following command.

You can transmit to the destination the UDP packets (or ICMP ECHO packets) of different TTLs to confirm which routes have come to the destination. Each router on this path has to deduct 1 from the TTL value before forwarding ICMP ECHO packets. Speaking from this aspect, TTL is an effective hop count. When the TTL value of a packet is deducted to zero, the router sends back to the source system the ICMP timeout message. Send the first response packet whose TTL is 1 and send TTL plus 1 subsequently until the target reaches to the max TTL.

By checking the ICMP timetout message sent back by inter medial routers, you can confirm the routers. At the arrival of the destination, the traceroute sends a UPD packet whose port ID is larger than 30000; the destination node hence can only transmit back a Port Unreachable ICMP message. This reception of this message means the arrival of destination.

traceroute [**-i** source-ip-address] [**-m** source-interface}] [**-j** host1 [host2 host3 …]] [–**k** host1 [host2, host3 …]] [**-p** port-number] [**-q** probe-count] [**-r** hops] [**-t** ttl] [**-w** *waittime*] [**-x icmp**] **host**

Parameters

Parameters	Description
-i *source-ip-address*	Sets the source IP address of packet.
-m *source-interface*	Sets the packet-transmitted port.
-j *host1* [*host2 host3…*]	Sets the relaxation source route. Default: Not set
-k *host1* [*host2 host3…*]	Sets the strict source route Default: Not set
-p *port-number*	Sets the ID of destination port that transmits UDP packets. Default value: 33434 Default: 33434
-q *probe-count*	Sets the number of packets that you detect each time. Default: 3 messages
-r *hops*	Records routes. Up to hops routes are recorded. Default: not record
-t *ttl*	Sets IP TTL of the message to ttl. Default: the minimum and maximum TTLs are 1 and 30 respectively.
-w *waittime*	Time for each message to wait for response Default: 3 seconds
-x icmp	Sets the detection packet to be the ICMP ECHO packet. Default: UDP packet
host	Destination host

Command Mode

EXEC and global configuration mode

Usage Guidelines

The UDP packet is used for detection by default, but you can run –x icmp to replace it with ICMP ECHO for detection.

If you want to stop traceroute, press q or Q.By default, the simple output information is as follows.

Simple output is adopted by default.

Parameters	Description
!N	Receives an ICMP-route unreachable packet.
!H	Receives an ICMP-host unreachable packet.
!P	Receives an ICMP-protocol unreachable packet.
!F	Receives an ICMP unreachable (need to be fragmented) packet.
!S	Receive an ICMP unreachable (failing to detect the source-station route) packet.

The statistics information is exported:

Parameters	Description
hops max	Means the maximum detection hops (the threshold of ICMP).
byte packets	Stands for the size of each detection packet.

Example

```
switch#traceroute 90.1.1.10
traceroute to 90.1.1.10 (90.1.1.10), 30 hops max, 36 byte packets
 1   90.2.2.1   0 ms   0 ms   0 ms
 2   90.1.1.10   0 ms   0 ms   0 ms
```

3.2 Fault Diagnosis Commands

The chapter describes the commands used for fault diagnosis. All the following commands are used to detect the reason of the fault. You can use other commands to remove the fault, such as the debug command.

The chapter only introduces the universal diagnosis commands. For more details, please refer to the Fault Diagnosis White Paper.

The fault diagnosis commands include:

- logging
- logging buffered

- logging console
- logging facility
- logging monitor
- logging on
- logging trap
- logging command
- logging source-interface
- logging history alerts
- logging history critical
- logging history debugging
- logging history emergencies
- logging history errors
- logging history informational
- logging history notifications
- logging history warnings
- logging history rate-limit
- logging history size
- service timestamps
- clear logging
- show break
- show debug
- show logging

3.2.2 logging

To display the state of logging (syslog), run the following command.To return to the default setting, use the no form of this command.

logging *A.B.C.D level*

no logging *A.B.C.D level*

Parameters

Parameters	Description
A.B.C.D	IP address of the syslog server
level	Level of log information on the server Refer to table 1.

Default value

The log information is not recorded to the server.

Command Mode

Global configuration mode

Usage Guidelines

The command can be used to record the log information to the designated syslog server. The command can be used for many times to designate multiple syslog servers.

Example

logging 192.168.1.1 errors

Related Command

logging trap

3.2.3 logging buffered

To record the log information to the memory of the switch, run the following command.

logging buffered [*size* | *level* | *dump*]

no logging buffered

Parameters

Parameters	Description
size	Size of memory cache Value range: 4096-2147483647 Unit: byte
level	Information level of the log recorded to memory cache Refer to table 1.
dump	When the system has abnormality, the information in the current memory is currently recorded to the flash and the information is resumed after the system is restarted.

Default Value

The information is not recorded to the memory cache.

Command Mode

Global configuration mode

Usage Guidelines

The command records the log information to the memory cache of the switch. The memory cache is circularly used. After the memory cache is fully occupied, the latter information will cover the previous information.

You can use the show logging command to display the log information recorded in the memory cache of the switch.

Do not use big memory for it causes the shortage of memory.

Table 1 Level of log recording

Prompt	Level	Description	Syslog definition
emergencies	0	System unusable	LOG_EMERG
alerts	1	Immediate action needed	LOG_ALERT
critical	2	Critical conditions	LOG_CRIT
errors	3	Error conditions	LOG_ERR
warnings	4	Warning conditions	LOG_WARNING
notifications	5	Normal but significant condition	LOG_NOTICE
informational	6	Informational messages only	LOG_INFO
debugging	7	Debugging messages	LOG_DEBUG

Related Command

clear logging

show logging

3.2.4 logging console

To control the information volume displayed on the console, run the following command.

To forbid the log information to be displayed on the console, use the no form of this command.

logging console *level*

no logging console

Parameters

Parameters	Description
level	Information level of the logs displayed on the console Refer to table 2.

Default Value

The log level displayed on the console port is debugging by default.

Command Mode

Global configuration mode

Usage Guidelines

After the information level is specified, information of this level or the lower level will be displayed on the console.

Run the command show logging to display the currently configured level and the statistics information recorded in the log.

Table 2 Level of log recording

Prompt	Level	Description	Syslog definition
emergencies	0	System unusable	LOG_EMERG
alerts	1	Immediate action needed	LOG_ALERT
critical	2	Critical conditions	LOG_CRIT
errors	3	Error conditions	LOG_ERR
warnings	4	Warning conditions	LOG_WARNING
notifications	5	Normal but significant condition	LOG_NOTICE
informational	6	Informational messages only	LOG_INFO
debugging	7	Debugging messages	LOG_DEBUG

Example

logging console alerts

Related Command

logging facility

show logging

3.2.5 logging facility

To record specified error information, run the following command. To restore to local7, use the no form of this command.

logging facility *facility-type*

no logging facility

Parameters

Parameters	Description
facility-type	Facility type Refer to table 3.

Default Value

local7

Command Mode

Global configuration mode

Usage Guidelines

Table 3 Facility type

Type	Description
auth	Authorization system
cron	Cron facility
daemon	System daemon
kern	Kernel
local0-7	Reserved for locally defined messages
lpr	Line printer system
mail	Mail system
news	USENET news
sys9	System use
sys10	System use
sys11	System use
sys12	System use
sys13	System use
sys14	System use
syslog	System log

user	User process
uucp	UNIX-to-UNIX copy system

Example

logging facility kern

Related Command

logging console

3.2.6 logging monitor

To control the information volume displayed on the terminal line, run the following command.

To forbid the log information to be displayed on the terminal line, use the no form of this command.

logging monitor *level*

no logging monitor

Parameters

Parameters	Description
level	Information level of the logs displayed on the terminal line Refer to table 4.

Default Value

debugging

Command Mode

Global configuration mode

Usage Guidelines

Table 4 Level of log recording

Prompt	Level	Description	Syslog definition
emergencies	0	System is unusable	LOG_EMERG
alerts	1	Immediate action needed	LOG_ALERT
critical	2	Critical conditions	LOG_CRIT

errors	3	Error conditions	LOG_ERR
warnings	4	Warning conditions	LOG_WARNING
notifications	5	Normal but significant condition	LOG_NOTICE
informational	6	Informational messages only	LOG_INFO
debugging	7	Debugging messages	LOG_DEBUG

Example

logging monitor errors

Related Command

terminal monitor

3.2.7 logging on

To control the recording of error information, run the following command.

To forbid all records, use the no form of this command.

logging on

no logging on

Parameters

None

Default Value

logging on

Command Mode

Global configuration mode

Example

switch_config# **logging on**
switch_config# ^Z
switch#
Configured from console 0 by DEFAULT
switch# **ping 192.167.1.1**

```
switch#ping 192.167.1.1
PING 192.167.1.1 (192.167.1.1): 56 data bytes
!!!!!
--- 192.167.1.1 ping statistics ---
5 packets transmitted, 5 packets received, 0% packet loss
round-trip min/avg/max = 0/4/10 ms
switch#IP: s=192.167.1.111 (local), d=192.167.1.1 (FastEthernet0/0), g=192.167.1.1, len=84, sending
IP: s=192.167.1.1 (FastEthernet0/0), d=192.167.1.111 (FastEthernet0/0), len=84,rcvd
IP: s=192.167.1.111 (local), d=192.167.1.1 (FastEthernet0/0), g=192.167.1.1, len=84, sending
IP: s=192.167.1.1 (FastEthernet0/0), d=192.167.1.111 (FastEthernet0/0), len=84,rcvd
IP: s=192.167.1.111 (local), d=192.167.1.1 (FastEthernet0/0), g=192.167.1.1, len=84, sending
IP: s=192.167.1.1 (FastEthernet0/0), d=192.167.1.111 (FastEthernet0/0), len=84,rcvd
IP: s=192.167.1.111 (local), d=192.167.1.1 (FastEthernet0/0), g=192.167.1.1, len=84, sending
IP: s=192.167.1.1 (FastEthernet0/0), d=192.167.1.111 (FastEthernet0/0), len=84,rcvd
IP: s=192.167.1.111 (local), d=192.167.1.1 (FastEthernet0/0), g=192.167.1.1, len=84, sending
IP: s=192.167.1.1 (FastEthernet0/0), d=192.167.1.111 (FastEthernet0/0), len=84,rcvd

switch_config# no logging on

switch_config# ^Z
switch#
switch# ping 192.167.1.1
PING 192.167.1.1 (192.167.1.1): 56 data bytes
!!!!!
--- 192.167.1.1 ping statistics ---
5 packets transmitted, 5 packets received, 0% packet loss
round-trip min/avg/max = 0/4/10 ms
```

Related Command

logging

logging buffered

logging monitor

logging console

3.2.8 logging trap

To control the information volume recorded to the syslog server, run the following command.

To forbid the information to be recorded to the syslog server, use the no form of this command.

logging trap *level*

no logging trap

Parameters

Parameters	Description
level	Information level of the logs displayed on the terminal line Refer to table 5.

Default Value

Informational

Command Mode

Global configuration mode

Usage Guidelines

Table 5 Level of log recording

Prompt	Level	Description	Syslog definition
emergencies	0	System is unusable	LOG_EMERG
alerts	1	Immediate action needed	LOG_ALERT
critical	2	Critical conditions	LOG_CRIT
errors	3	Error conditions	LOG_ERR
warnings	4	Warning conditions	LOG_WARNING
notifications	5	Normal but significant condition	LOG_NOTICE
informational	6	Informational messages only	LOG_INFO
debugging	7	Debugging messages	LOG_DEBUG

Example

logging 192.168.1.1
logging trap notifications

Related Command

logging

3.2.9 logging command

To enable the command execution recording, run logging command. After this function is enabled will be generated for each of all entered commands, in which the line to execute this command, the command line, the execution result, the login line and the login address will be recorded.

To disable this function, use the no form of this command.

Parameters

None

Default Value

no logging command

Command Mode

Global configuration mode

Example

Switch config#logging command

Switch_config#Jul 11 15:26:56 %CMD-6-EXECUTE: `logging command ` return 0, switch(vty 0, 192.168.25.42).

Related Command

logging

3.2.10 logging source-interface

To set the source port of log exchange, run the following command.

You can use no logging source-interface to disable this function.

Parameters

None

Default Value

no logging source-interface

Command Mode

Global configuration mode

Example

Switch_config# logging source-interface vlan 1

Related Command

logging

3.2.11 logging history alerts

To set the level of the historical log table to alerts (need to act immediately), run the following command.

Parameters

None

Default Value

logging history warnings

Command Mode

Global configuration mode

Example

Switch_config#logging history alerts

Related Command

logging

3.2.12 logging history critical

To set the level of the historical log table to critical, run the following command.

Parameters

None

Default Value

logging history warnings

Command Mode

Global configuration mode

Example

Switch_config#logging history critical

Related Command

logging

3.2.13 logging history debugging

This command is used to set the level of the historical log table to debugging.

Parameters

None

Default Value

logging history warnings

Command Mode

Global configuration mode

Example

Switch_config#logging history debugging

Related Command

logging

3.2.14 logging history emergencies

To set the level of the historical log table to emergencies, run the following command:

Parameters

None

Default Value

logging history warnings

Command Mode

Global configuration mode

Example

Switch_config#logging history emergencies

Related Command

logging

3.2.15 logging history errors

This command is used to set the level of the historical log table to errors.

Parameters

None

Default Value

logging history warnings

Command Mode

Global configuration mode

Example

Switch_config#logging history errors

Related Command

logging

3.2.16 logging history informational

This command is used to set the level of the historical log table to informational.

Parameters

None

Default Value

logging history warnings

Command Mode

Global configuration mode

Example

Switch_config#logging history informational

Related Command

logging

3.2.17 logging history notifications

This command is used to set the level of the historical log table to notifications.

Parameters

None

Default Value

logging history warnings

Command Mode

Global configuration mode

Example

Switch_config#logging history notifications

Related Command

logging

3.2.18 logging history warnings

To set the level of the historical log table to warnings, run the following command:

Parameters

None

Default Value

logging history warnings

Command Mode

Global configuration mode

Example

Switch_config#logging history warnings

Related Command

logging

3.2.19 logging history rate-limit

To set the log output rate, run the following command.

Parameters

Parameters	Description
<1-512>	Stands for the number of logs which are exported each second.

Default Value

logging history rate-limit 0

Command Mode

Global configuration mode

Example

Switch_config#logging history rate-limit 256

Related Command

logging

3.2.20 logging history size

To set the number of entries in the historical log table, run the following command.
logging history size

Parameters

Parameters	Description
<0-500>	Stands for the number of historical log entries.

Default Value

logging history size 0

Command Mode

Global configuration mode

Example

Switch_config#logging history size 256

Related Command

logging

3.2.21 service timestamps

To set configure the time stamp that is added when the system is debugged or records the log information, run the following command.

To cancel the time stamp that is added when the system is debugged or records the log information, use the no form of this command.

service timestamps [log|debug] [*uptime*| *datetime*]

no service timestamps [log|debug]

Parameters

Parameters	Description
log	Adds the time stamp before the log information.
debug	Adds the time stamp before the debug information.
uptime	Duration between the startup of the switch and the current time
datetime	Real-time clock time

Default Value

service timestamps log date

service timestamps debug date

Command Mode

Global configuration mode

Usage Guidelines

The time stamp in the uptime form is displayed like HHHH:MM:SS, meaning the duration from the start-up of the switch to the current time.

The time stamp in the date form is displayed like YEAR-MON-DAY HH:MM:SS, meaning the real-time clock time.

Example

service timestamps debug uptime

3.2.22 clear logging

To clear the log information recorded in the memory cache, run the following command.

clear logging

Parameters

None

Command Mode

EXEC

Related Command

logging buffered

show logging

3.2.23 show break

To display the information about abnormal breakdown of the switch, run the following command.

show break

Parameters

None

Default Value

None

Command Mode

EXEC

Usage Guidelines

The command can be used to display the information about abnormal breakdown of the switch, helping to find the cause of the abnormality.

Example

```
switch#show break
Exception Type:1400-Data TLB error
BreakNum: 1 s date: 2000-1-1 time: 0:34:6
r0          r1          r2          r3          r4          r5          r6
00008538-01dbc970-0054ca18-00000003-80808080-fefefeff-01dbcca1-
r7          r8          r9          r10         r11         r12         r13
00000000-00009032-00000000-7ffffff0-00008588-44444444-0054c190-
r14         r15         r16         r17         r18         r19         r20
000083f4-000083f4-00000000-00000000-00000000-00000000-00000000-
r21         r22         r23         r24         r25         r26         r27
00000000-0000000a-00000001-00000000-00000000-004d6ce8-01dbd15c-
r28         r29         r30         r31         spr8        spr9        ip
00000002-00467078-00010300-00000300-00000310-00008588-00000370-
Variables :
00008538-44444444-01dbd15c-01dbcaac-00000002-00000000-004d6ce8-
```

```
01dbca18-
  00008538 ---    do_chram_mem_sys_addr---bspcfg.o
  0001060c ---    subcmd---cmdparse.o---libcmd.a
  000083e4 ---    do_chram_mem_sys---bspcfg.o
  0000fb24 ---    lookupcmd---cmdparse.o---libcmd.a
  0000f05c ---    cmdparse---cmdparse.o---libcmd.a
  003e220c ---    vty---vty.o---libvty.a
  00499820 ---    pSOS_qcv_broadcast---ksppc.o---os\libsys.a
```

The whole displayed content can be divided into six parts:

1. RROR:file function.map not found

The prompt information means that the system has not been installed the software function.map, which does not affect the system running.

If the version of the software function.map is not consistent with that of the switch, the system prompts that the version is not consistent.

2. Exception Type—Abnormal hex code plus abnormal name

3. BreakNum

It is the current abnormal number. It means the number of abnormalities that the system has since it is powered on in the latest time. It is followed by the time when the abnormality occurs.

4. Content of the register

The common content of the register is listed out.

5. Variable area

The content in the stack is listed out.

6. Calling relationship of the number

If the map file is not installed on the system, only the function's address is displayed. If the map file is installed on the system, the corresponding function name, .o file name and .a file name are displayed.

The calling relationship is from bottom to top.

3.2.24 show debug

To display all the enabled debugging options of the switch, run the following command.

show debug

Parameters

None

Command Mode

EXEC

Example

switch# show debug

Crypto Subsystem:
  Crypto Ipsec debugging is on
  Crypto Isakmp debugging is on
  Crypto Packet debugging is on

Related Command

debug

3.2.25 show logging

To display the state of logging (syslog), run the following command.

show logging

Parameters

None

Command Mode

EXEC

Usage Guidelines

The command can be used to display the state of logging (syslog), including the login information about the console, monitor and syslog.

Example

switch# show logging

Syslog logging: enabled (0 messages dropped, 0 flushes, 0 overruns)
  Console logging: level debugging, 12 messages logged
  Monitor logging: level debugging, 0 messages logged
  Buffer logging: level debugging, 4 messages logged
  Trap logging: level informations, 0 message lines logged

Log Buffer (4096 bytes):

2000-1-4 00:30:11 Configured from console 0 by DEFAULT

2000-1-4 00:30:28 User DEFAULT enter privilege mode from console 0, level = 15

Related Command

clear logging

Chapter 4 SSH Configuration Commands

4.1 SSH Configuration Commands

4.1.2 ip sshd enable

Syntax

ip sshd enable

no ip sshd enable

Parameters

None

Default Value

Disabled

Usage Guidelines

The command can be used to generate the rsa encryption key and then monitor the connection to the ssh server. The process of generating encryption key is a process of consuming the calculation time. It takes one or two minutes.

Command Mode

Global configuration mode

Example

In the following example, the SSH service is generated.

switch_config#ip sshd enable

4.1.3 ip sshd timeout

Syntax

ip sshd timeout *time-length*

no ip sshd timeout

Parameters

Parameters	Description
time-length	Maximum time from the establishment of connection to the authentication approval;Value range: 60-65535

Default Value

180 seconds

Usage Guidelines

To prevent the illegal user from occupying the connection resources, the connections that are not approved will be shut down after the set duration is exceeded.

Command Mode

Global configuration mode

Example

In the following example, the timeout time is set to 360 seconds

switch_config#ip sshd timeout 360

4.1.4 ip sshd auth-method

Syntax

ip sshd auth-method *method*

no ip sshd auth-method

Parameters

Parameters	Description
method	Sets authentication method list. The length of the authentication method's name is no more than 20 characters.

Default Value

The default authentication method list is used.

Usage Guidelines

The ssh server uses the authentication method list of the login type.

Command Mode

Global configuration mode

Example

In the following example, an auth-ssh authentication method list is configured and it is applied to the ssh server:

switch_config#aaa authentication login auth-ssh local
switch_config#ip sshd auth-method auth-ssh

4.1.5 ip sshd access-class

Syntax

ip sshd access-class *access-list*

no ip sshd access-class

Parameters

Parameters	Description
access-list	Standard IP access list the length of the access list's name is no more than 20 characters.

Default Value

No access control list

Usage Guidelines

The command can be used to configure the access control list for the ssh server. Only the connections complying with the regulations in the access control list can be approved.

Command Mode

Global configuration mode

Example

In the following example, an ssh-accesslist access control list is configured and applied in the ssh server:

```
switch_config# ip access-list standard ssh-accesslist
switch_config_std#deny 192.168.20.40
switch_config#ip sshd access-class ssh-accesslist
```

4.1.6 ip sshd auth-retries

Syntax

ip sshd auth-retries *times*

no ip sshd auth-retries

Parameters

Parameters	Description
times	Maximum re-authentication times; Value range: 0-65535

Default Value

6 times

Usage Guidelines

The connection will be shut down when the re-authentication times exceeds the set times.

Command Mode

Global configuration mode

Example

In the following example, the maximum re-authentication times is set to five times:

```
switch_config#ip sshd auth-retries 5
```

4.1.7 ip sshd clear

Syntax

ip sshd clear *ID*

Parameters

Parameters	Description
ID	Number of the SSH connection to the local device; Value range: 0-15

Default Value

None

Usage Guidelines

The command can be used to disable the incoming ssh connection with the specified number compulsorily. You can run the command **show ssh** to check the current incoming connection's number.

Command Mode

Global configuration mode

Example

In the following example, the No.0 incoming connection is mandatorily closed:

switch_config#ip sshd clear 0

4.1.8 ip sshd silence-period

Syntax

ip sshd silence-period *time-length*

no ip sshd silence-period

Parameters

Parameters	Description
time-length	Means the time of the silence, which ranges from 0 to 3600.

Default Value

60s

Usage Guidelines

The command can be used to set the login silence period. After the accumulated login failures exceed a certain threshold, the system regards that there exist attacks and disables the SSH service in a period of time, that is, the system enters the login silence period.

The silence period is set by the ip sshd silence-period command. The default silence period is 60 seconds. The allowable login failures are set by the ip sshd auth-retries command, whose default value is 6.

Command Mode

Global configuration mode

Example

The following example shows how to set the silence period to 200 seconds.

switch_config#ip sshd silence-period 200

4.1.9 ip sshd sftp

Syntax

ip sshd sftp

no ip sshd sftp

Parameters

None

Default Value

None

Usage Guidelines

The command can be used to enable the SFTP function. The SFTP function refers to the secure file transmission system based on SSH, of which the authentication procedure and data transmission are encrypted. Though it has low transmission efficiency, network security is highly improved.

Command Mode

Global configuration mode

Example

The following example shows how to enable the SFTP function.

switch_config#ip sshd sftp

4.1.10 ip sshd save

Syntax

ip sshd save

no ip sshd save

Parameters

None

Default Value

None

Usage Guidelines

The command can be used to save the initial key. When the SSH server is restarted, the key will be first read from the flash; if the key reading is successful, the recalculation of key will be avoided and the startup time will be shortened.

Command Mode

Global configuration mode

Example

The following example shows how to enable the key protection function.

switch_config#ip sshd save

4.1.11 ip sshd disable-aes

Syntax

ip sshd disable-aes

no ip sshd disable-aes

Parameters

None

Default Value

The AES encryption algorithm is forbidden.

Usage Guidelines

The command can be used to decide whether to use the AES algorithm during the encryption algorithm negotiation. The AES algorithms such as aes128-cbc and aes256-cbc are not used by default.

Command Mode

Global configuration mode

Example

The following example shows how to disable the AES encryption algorithm.

switch_config#ip sshd disable-aes

4.1.12 ssh

Syntax

ssh –**l** *userid* –**d** *destIP* **[-c {des|3des|blowfish }] [-o** *numberofpasswdprompts***] [-p** *port***] [-v** {1|2}**]**

Parameters

Parameters	Description
–**l** userid	User account on the server
–**d** destIP	Destination IP address in the dotted decimal system
-o numberofpasswdprompts	Re-authentication times after the first authentication fails; Actual re-authentication times is the set value plus the smallest value set on the server. Its default value is three times. Value range: 0-65535
-p port	Port number that the server monitorsIts default value is 22. Value range: 0-65535
-c {des|3des|blowfish}	Encryption algorithm used during communicationThe encryption algorithm is 3des by default.
-v version	Specified version number

Default Value

None

Usage Guidelines

The command can be used to create a connection with the remote ssh server.

Command Mode

Privileged mode

Example

The following example shows how a connection with the ssh server whose IP address is 192.168.20.41 is created. The account is zmz and the encryption algorithm is blowfish:

switch#ip ssh –l zmz –d 192.168.20.41 –c blowfish

4.1.13 show ssh

Syntax

show ssh

Parameters

None

Default Value

None

Usage Guidelines

The command can be used to display the sessions on the ssh server.

Command Mode

Privileged mode

Example

The following example shows the sessions on the ssh server:

switch#show ssh

4.1.14 show ip sshd

Syntax

show ip sshd

Parameters

None

Default Value

None

Usage Guidelines

The command can be used to display the current state of the ssh server.

Command Mode

Privileged mode

Example

In the following example, the current state of the ssh server is displayed:

switch#show ip sshd

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