QUANTUM NETWORKS

QASA CLI GUIDE

Debugging and Diagnosis

Contents

1. SHOW

clear history all-users

Command	**clear history all-users**
Parameter	None.
Default	None.
Mode	Admin mode.
Usage	Using this command can clear the command history of all users.
Example	**Switch#clear history all-users**

clear logging

Command	**clear logging sdram**
Parameter	None.
Default	None.
Mode	Global Mode.
Usage	When the old information in the log buffer zone is no longer concerned, we can use this command to clear all the information.
Example	To clear all information in the log buffer zone sdram. **Switch#clear logging sdram**

history all-users max-length

Command	**history all-users max-length <count>**
Parameter	**<count>:** the command history number can be saved, ranging from 100 to 1000.
Default	The system can save 100 recent command history of all users at best by default.
Mode	Global Mode.
Usage	Using this command can set the max command history number.
Example	**Switch#config** **Switch(config)#history all-users max-length 500**

logging

Command	**logging { <ipv4-addr> | <ipv6-addr> } [facility <local-number>] [level <severity>]** **no logging { <ipv4-addr> | <ipv6-addr> } [facility <local-number>]**
Parameter	**<ipv4-addr>:** IPv4 address of the host. **<ipv6-addr>:** IPv6 address of the host. **<local-number>:** recording equipment of the host with a valid range of local0～local7, which is in accordance with the facility defined in the RFC3164. **<severity>:** severity threshold of the log information severity level. The rule of the log information output is explained as follows: only those with a level equal to or higher than the threshold will be outputted. For detailed description on the severity please refer to the operation manual.
Default	No log information output to the log host by default. The default recorder of the log host is the local0; the default severity level is warnings.
Mode	Global Mode.
Usage	The command is used to configure the output channel of the log host. The "no" form of this command will disable the output at the log host output channel. Only when the log host is configured by the logging command, this command will be available. We can configure many IPv4 and IPv6 log hosts.
Example	To send the log information with a severity level equal to or higher than warning to the log server with an IPv4 address of 100.100.100.5, and save to the log recording equipment local1. **Switch#config** **Switch(config)#logging 100.100.100.5 facility local1 level warnings**

logging executed-commands

Command	**logging executed-commands {enable | disable}**
Parameter	None.
Default	Disable state.
Mode	Global Mode.
Usage	After enabling this command, the commands executed by user at the console, telnet or ssh terminal will record the log, so it should be used with the logging LOGHOST command.
Example	To enable the command and send the commands executed by user into log host (10.1.1.1) **Switch#config** **Switch(config)#logging 10.1.1.1** **Switch(config)#logging executed-commands enable**

logging loghost sequence-number

Command	**logging loghost sequence-number** **no logging loghost sequence-number**
Parameter	None.
Default	Do not include the sequence-number.
Mode	Global Mode.
Usage	Adds the loghost sequence-number for the log; the no command does not include the loghost sequence-number. Use logging command to configure the loghost before this command is set.
Example	To open the loghost sequence-number **Switch#config** **Switch(config) #logging loghost sequence-number**

logging source-ip

Command	**logging source-ip{ <A.B.C.D> | <X:X::X:X> }**
Parameter	**<ipv4-addr>:** IPv4 address of the host. **<ipv6-addr>:** IPv6 address of the host.
Default	None
Mode	Global Mode.
Usage	Appoints the source IP address of the log packet which is sent to the log server, the ipv4 or ipv6 addresses can be configured. After configured this command, the log information sent to the server has the IP address; if this command is not configured, the log information does not have the IP address.
Example	To configure the source IP address of the log packet which is sent to the log server. **Switch#config** **Switch(config)#logging source-ip 2010::10**

ping

Command	**ping [[src<source-address>] { <destination-address> | host <hostname> }]**
Parameter	**<source-address>:** <source-address>is the source IP address where the ping command is issued, with IP address in dotted decimal format. **<destination-address>:** <destination-address>is the target IP address of the ping command, with IP address in dotted decimal format. **<hostname>:** <hostname>is the target host name of the ping command, which should not exceed 64 characters.
Default	5 ICMP echo requests will be sent. The default packet size and time out is 56 bytes and 2 seconds.
Mode	Admin Mode.
Usage	Issues ICMP request to remote devices, check whether the remote device can be reached by the switch. When the ping command is entered without any parameters, interactive configuration mode will be invoked. And ping parameters can be entered interactively.
Example	**Example** 1： To ping with default parameters. **Switch#ping 10.1.128.160**

Type ^c to abort.
Sending 5 56-byte ICMP Echos to 10.1.128.160, timeout is 2 seconds.
...!!
Success rate is 40 percent (2/5), round-trip min/avg/max = 0/0/0 ms
In the example above, the switch is made to ping the device at 10.1.128.160. The command did not receive ICMP reply packets for the first three ICMP echo requests within default 2 seconds timeout. The ping failed for the first three tries. However, the last two ping succeeded. So the success rate is 40%. It is denoted on the switch "." for ping failure which means unreachable link, while "!" for ping success, which means reachable link.

Example 2：Ping with parameters entered interactively.
Switch#ping
VRF name：
Use IP Address[y]: y
Target IP address：10.1.128.160
Use source address option[n]: y
Source IP address: 10.1.128.161
Repeat count [5]: 100
Datagram size in byte [56]：1000
Timeout in milli-seconds [2000]: 500
Extended commands [n]: n

Display Information	Explanation
VRF name	VRM name. If MPLS is not enabled, this field will be left empty.
Target IP address	The IP address of the target device.
Use source address option[n]	Whether or not to use ping with source address.
Source IP address	To specify the source IP address for ping.
Repeat count [5]	Number of ping requests to be sent. The default value is 5.
Datagram size in byte [56]	The size of the ICMP echo requests, with default as 56 bytes.
Timeout in milli-seconds [2000]	Timeout in milli-seconds, with default as 2 seconds.
Extended commands [n]	Whether or to use other extended options.

ping6

Command	**ping6 [<dst-ipv6-address> | host <hostname> | src<src-ipv6-address> {<dst-ipv6-address > | host <hostname>}]**
Parameter	**<dst-ipv6-address>:** target IPv6 address of the ping command. **<src-ipv6-address>:** source IPv6 address where the ping command is issued. **<hostname>:** Target host name of the ping command, which should not exceed 64 characters.
Default	Five ICMP6 echo request will be sent by default, with default size as 56 bytes, and default timeout to be 2 seconds.
Mode	Global Mode.
Usage	To check whether the destination network can be reached. When the ping6 command is issued with only one IPv6 address, other parameters will be default. And when the ipv6 address is a local data link address, the name of VLAN interface should be specified. When the source IPv6 address is specified, the command will fill the icmp6 echo requests with the specified source address for ping.
Example	**Example** 1：To issue ping6 command with default parameters. **Switch#ping6 2001:1:2::4** Type ^c to abort. Sending 5 56-byte ICMP Echos to 2001:1:2::4, timeout is 2 seconds. !!!!! Success rate is 100 percent (5/5), round-trip min/avg/max = 1/320/1600 ms **Example** 2：To issue the ping6 command with parameters input interactively. **Switch#ping6** Target IPv6 address:fe80::2d0:59ff:feb8:3b27 Output Interface: vlan1 Use source address option[n]:y Source IPv6 address: fe80::203:fff:fe0b:16e3 Repeat count [5]: Datagram size in byte [56]: Timeout in milli-seconds [2000]: Extended commands [n]: Type ^c to abort. Sending 5 56-byte ICMP Echos to fe80::2d0:59ff:feb8:3b27, using src address fe80::203:fff:fe0b:16e3, timeout is 2 seconds. !!!!! Success rate is 100 percent (5/5), round-trip min/avg/max = 1/4/16 ms

Display Information	Explanation
ping6	The ping6 command
Target IPv6 address	The target IPv6 address of the command
Output Interface	The name of the VLAN interface, which should be specified when the target address is a local data link address.
Use source IPv6 address [n]:	Whether or not use source IPv6 address. Disabled by default.
Source IPv6 address	Source IPv6 address.
Repeat count[5]	Number of the ping packets.
Datagram size in byte[56]	Packet size of the ping command. 56 byte by default.
Timeout in milli-seconds[2000]	Timeout for ping command. 2 seconds by default.
Extended commands[n]	Extended configuration. Disabled by default.
!	The network is reachable.
.	The network is unreachable.
Success rate is 100 percent(8/8), round-trip min/avg/max = 1/1/1ms	Statistic information, success rate is 100 percent of ping packet.

show flash

Command	**Show flash**
Parameter	None.
Default	None.
Mode	Admin and Configuration Mode.
Usage	Shows the size of the files which are reserved in the system flash memory.
Example	To list the files and their size in the flash. **Switch#show flash** total 12227K -rw- 12516553 nos.img -rw- 3224 startup.cfg Drive : flash: Size:30.0M Used:13.0M Available:17.0M Use:43%

show history

Command	show history
Parameter	None.
Default	None.
Mode	Admin Mode.
Usage	Displays the recent user command history. The system holds up to 20 commands the user entered, the user can use the UP/DOWN key or their equivalent (ctrl+p and ctrl+n) to access the command history.
Example	**Switch# show history** enable config interface ethernet 1/0/3 enable dir show ftp

show history all-users

Command	show history all-users [detail]
Parameter	**detail**: shows user name of the executing command. IP address of the user will be shown when logging in the executing command through Telnet or SSH.
Default	None.
Mode	Admin Mode.
Usage	This command is used to show the recent command history of all users, including time, logging type, executing command, etc. Notice: The user can only check the command history of other users whose purview should not be higher than oneself.
Example	**Switch# show history all-users detail** Time Type User Command 0w 0d 0h 2m Telnet/SSH admin show history all-users detail 192.168.1.2:1419 0w 0d 0h 1m Telnet/SSH admin show history all-users 192.168.1.2:1419 0w 0d 0h 1m Console Null show history all-users 0w 0d 0h 1m Console Null end

	0w 0d 0h 1m Console Null ip address 192.168.1.1 255.255.255.0 0w 0d 0h 0m Console Null in v 1 0w 0d 0h 0m Console Null telnet-server enable

show logging buffered

Command	**show logging buffered [level {critical | warnings} | range <begin-index><end-index>]**
Parameter	**level {critical | warnings}:** level of critical information. **<begin-index>:** index start value of the log message, the valid range is 1-65535. **<end-index>:** index end value of the log message, and the valid range is 1-65535. When only display logging buffered information of the line card must be added range parameter, but the main control has not the request.
Default	No parameter specified indicates all the critical log information will be displayed.
Mode	Admin Mode.
Usage	This command displays the detailed information in the log buffer channel. This command is not supported on low end switches. Warning and critical log information is saved in the buffer zone. When displayed to the terminal, their display format should be: index ID time <level> module ID [mission name] log information.
Example	To display the critical log information in the log buffer zone channel and related to the main control with index ID between 940 and 946. **Switch# show logging buffered level critical range 940 946** Current messages in SDRAM:0

show logging executed-commands state

Command	**show logging executed-commands state**
Parameter	None.
Default	None.
Mode	Admin Mode.
Usage	Use this command to display the state (enable or disable).

Example	**Switch#show logging executed-commands state** Logging executed command state is enable

show logging source

Command	**show logging source mstp**
Parameter	None.
Default	None.
Mode	Admin and configuration mode.
Usage	Shows the log information source of MSTP module.
Example	Show the log information source of MSTP. **Switch#show logging source mstp** system module log switch status: Channel Onoff Severity logbuff on warning loghost on warning terminal on warning

show running-config

Command	**show running-config**
Parameter	None.
Default	None.
Mode	Admin mode.
Usage	Displays the current active configuration parameters for the switch. When the user finishes a set of configuration and needs to verify the configuration, show running-config command can be used to display the current active parameters.
Example	**Switch#show running-config**

show running-config current-mode

Command	**show running-config current-mode**
Parameter	None.
Default	None.
Mode	All configuration modes.
Usage	Enters into any configuration mode and input this command under this mode, it can show all the configurations under the current mode.
Example	**Switch#show running-config current-mode** Interface Ethernet1/0/1 switchport access vlan 2 !

show startup-config

Command	**show startup-config**
Parameter	None.
Default	If the configuration parameters read from the Flash are the same as the default operating parameter, nothing will be displayed.
Mode	Admin mode.
Usage	The **show running-config** command differs from **show startup-config** in that when the user finishes a set of configurations, **show running-config** displays the added-on configurations whilst **show startup-config** won't display any configurations. However, if **write** command is executed to save the active configuration to the Flash memory, the displays of **show running-config** and **show startup-config** will be the same.
Example	**Switch#show startup-config**

show switchport interface

<table>
<tr><td>Command</td><td>show switchport interface [ethernet] <IFNAME></td></tr>
<tr><td>Parameter</td><td><IFNAME>: port number</td></tr>
<tr><td>Default</td><td>None.</td></tr>
<tr><td>Mode</td><td>Admin and configuration mode.</td></tr>
<tr><td>Usage</td><td>Shows the VLAN port mode, VLAN number and Trunk port messages of the VLAN port mode on the switch.</td></tr>
<tr><td>Example</td><td>Show VLAN messages of port ethernet 1/0/1
Switch#show switchport interface ethernet 1/0/1
Ethernet1/0/1
Type :Universal
Mode :Trunk
Port VID :1
Trunk allowed Vlan :1-4094

<table>
<tr><td>Displayed Information</td><td>Description</td></tr>
<tr><td>Ethernet1/0/1</td><td>Corresponding interface number of the Ethernet.</td></tr>
<tr><td>Type</td><td>Current interface type.</td></tr>
<tr><td>Mode: Trunk</td><td>Current interface VLAN mode.</td></tr>
<tr><td>Port VID :1</td><td>Current VLAN number the interface belongs.</td></tr>
<tr><td>Trunk allowed Vlan : ALL</td><td>VLAN permitted by Trunk</td></tr>
</table>
</td></tr>
</table>

show tcp

Command	**show tcp**
Parameter	None.
Default	None.
Mode	Admin mode.
Usage	Displays the current TCP connection status established to the switch .
Example	**Switch#show tcp**

show tcp ipv6

Command	**show tcp ipv6**
Parameter	None.
Default	None.
Mode	Admin and configuration mode
Usage	Shows the current TCP connection.
Example	**Switch#show tcp ipv6**

show telnet login

Command	**show telnet login**
Parameter	None.
Default	None.
Mode	Admin and configuration mode.
Usage	This command is used to list the information of currently available telnet clients which are connected to the switch.
Example	**Switch#show telnet login** Authenticate login by local. Login user: aa

show udp

Command	**show udp**
Parameter	None.
Default	None.
Mode	Admin mode.
Usage	Displays the current UDP connection status established to the switch.
Example	**Switch#show udp**

show udp ipv6

Command	**show udp ipv6**
Parameter	None.
Default	None.
Mode	Admin and configuration mode.
Usage	Shows the current UDP connection.
Example	Switch#show udp ipv6

show version

Command	**show version**
Parameter	None.
Default	None.
Mode	Admin mode.
Usage	Displays the switch version. Use this command to view the version information for the switch, including hardware version and software version.
Example	**Switch#show version**

traceroute

Command	**traceroute [source <ipv4-addr>] { <ip-addr> | host <hostname> } [hops <hops>] [timeout <timeout>]**
Parameter	**<ipv4-addr>:** assigned source host IPv4 address in dot decimal format. **<ip-addr>:** target host IP address in dot decimal format. **<hostname>:** hostname for the remote host. **<hops>:** maximum gateway number allowed by traceroute command. **<timeout>:** timeout value for test packets in milliseconds, between 100 -10000.
Default	The default maximum gateway number is 30, timeout in 2000 ms.
Mode	Admin mode.

Usage	This command is tests the gateway passed in the route of a packet from the source device to the target device. This can be used to test connectivity and locate a failed sector. Traceroute is usually used to locate the problem for unreachable network nodes.
Example	**Switch#traceroute 192.168.2.36** Type ^c to abort. Traceroute to host 192.168.2.36, maxhops is 30, timeout is 2000ms. 1 0ms 192.168.2.36 Traceroute completed.

traceroute6

Command	**traceroute6 [source <addr>] {<ipv6-addr> | host <hostname>} [hops <hops>] [timeout <timeout>]**
Parameter	**<ipv4-addr>:** assigned source host IPv6 address in colonned hex notation. **<ip-addr>:** IPv6 address of the destination host, shown in colonned hex notation. **<hostname>:** name of the remote host. **<hops>:** max number of the gateways the traceroute6 passed through, ranging between 1-255. **<timeout>:** timeout period of the data packets, shown in millisecond and ranging between 100~10000.
Default	Default number of the gateways passes by the data packets is 30, and timeout period is defaulted at 2000ms.
Mode	Admin mode.
Usage	This command is for testing the gateways passed by the data packets from the source device to the destination device, so to check the accessibility of the network and further locating the network failure. Traceroute6 is normally used to locate destination network inaccessible failures.
Example	**Switch#traceroute6 2004:1:2:3::4**

reload after

Command	**reload after {[<HH:MM:SS>] [days <days>]}**
Parameter	**<HH:MM:SS>:** specified time, HH (hours) ranges from 0 to 23, MM (minutes) and SS (seconds) range from 0 to 59. **<days>:** specified days, unit is day, range from 1 to 30.
Default	None.
Mode	Admin mode.
Usage	With this command, users can reboot the switch without shut down its power after a specified period of time, usually when updating the switch version. The switch can be rebooted after a period of time instead of immediately after its version being updated successfully. This command will not be reserved, which means that it only has one-time effect. After this command is configured, it will prompt the reboot information when user logging in the switch by telnet.
Example	To set the switch to automatically reload after 2 days, 10 hours and 1 second. **Switch#reload after 10:00:01 days 2** Process with reboot after? [Y/N] y

reload cancel

Command	**reload cancel**
Parameter	**<HH:MM:SS>:** specified time, HH (hours) ranges from 0 to 23, MM (minutes) and SS (seconds) range from 0 to 59. **<days>:** specified days, unit is day, range from 1 to 30.
Default	None.
Mode	Admin mode.
Usage	Cancels the specified time period to reload the switch. With this command, users can cancel the specified time period to reload the switch, that is, to cancel the configuration of command "reload after". This command will not be reserved.
Example	To prevent the switch to automatically reboot after the specified time. **Switch#reload cancel** Reload cancel successful.

show reload

Command	show reload
Parameter	None.
Default	None.
Mode	Admin and configuration mode.
Usage	Displays the user's configuration of command "reload after". With this command, users can view the configuration of command "reload after" and check how long a time is left before rebooting the switch.
Example	To view the configuration of command "reload after". In the following case, the user set the switch to be rebooted in 10 hours and 1 second, and there are still 9 hours 59 minutes and 48 seconds left before rebooting it. **Switch#show reload** The original reload after configuration is 10:00:01. System will be rebooted after 09:59:48 from now.

clear cpu-rx-stat protocol

Command	clear cpu-rx-stat protocol [<protocol-type>]
Parameter	**<protocol-type>:** type of the protocol of the packet**,** , including dot1x, stp, snmp, arp, telnet, http, dhcp, igmp, ssh
Default	None.
Mode	Admin mode.
Usage	This command clear the statistics of the CPU received packets of the protocol type, it is supposed to be used with the help of the technical support.
Example	To clear the statistics of the CPU receives ARP packets. **Switch#config** **Switch#clear cpu-rx-stat protocol arp**

cpu-rx-ratelimit protocol

Command	**cpu-rx-ratelimit protocol <protocol-type><packets>** **no cpu-rx-ratelimit protocol <protocol-type>**
Parameter	**<protocol-type>:** type of the protocol, including dot1x, stp, snmp, arp, telnet, http, dhcp, igmp, ssh **<packets>:** max rate of CPU receiving packets of the protocol type, its range is 1-2000 pps.
Default	A different default rate is set for the different type of protocol.
Mode	Global mode.
Usage	Sets the max rate of the CPU receiving packets of the protocol type, the no command set the max rate to default. The rate limit set by this command have an effect on CPU receiving packets, so it is supposed to be used with the help of the technical support.
Example	To set the rate of the ARP packets to 500pps. **Switch#config** **Switch(config)#cpu-rx-ratelimit protocol arp 500**

cpu-rx-ratelimit total

Command	**cpu-rx-ratelimit total <packets>** **no cpu-rx-ratelimit total**
Parameter	**<packets>:** max number of CPU receiving packets per second.
Default	1200pps.
Mode	Global mode.
Usage	Sets the total rate of the CPU receiving packets, the no command sets the total rate of the CPU receiving packets to default. The total rate set by the command have an effect on CPU receiving packets, so it is supposed to be used with the help of the technical support.
Example	To set the total rate of the CPU receive packets to 1500pps. **Switch#config** **Switch(config)#cpu-rx-ratelimit total 1500**

show cpu-rx protocol

Command	**show cpu-rx protocol [<protocol-type>]**
Parameter	**<protocol-type>:** protocol type of the packets, if do not input parameters, show all statistic packets.
Default	None.
Mode	Admin and configuration mode.
Usage	Shows the statistics of the CPU received packets of the specified protocol type. This command is used to debug, it is supposed to be used with the help of the technical support.
Example	Show the statistics of CPU receiving ARP packets. **Switch#show cpu-rx protocol arp** Type Rate-limit TotPkts DropPkts DelayCount CurState ARP 300 0 0 0 allowed