System Configuration Commands

Оглавление

1.1. alias

Parameter Description

Use this command to configure a command alias in global configuration mode. Use the **no** or

default form of this command to restore the default setting.

alias *mode command-alias original-command*

no alias *mode* [*command-alias*]

default alias mode [*command-alias*]

Parameter	Description
mode	Mode of the command represented by the alias
command-alias	Command alias
original-command	Syntax of the command represented by the alias

Defaults

Some commands in user or privileged EXEC mode have default alias.

Command Mode

Global configuration mode.

Usage Guide

The following table lists the default alias of the commands in privileged EXEC mode.

Alias	Actual Command
h	help
p	ping
s	show
u	undebug
un	undebug

The default alias cannot be removed by the **no alias exec** command.

After configuring the alias, you can use a word to replace a command. For example, you can create an alias to represent the first part of a command, and then type the rest part of the command.

```
QTECH(config)# alias ?
aaa-gs AAA server group mode
```

The mode of the command represented by the alias is the command mode existing in the current system. In the global configuration mode, you can use the **alias ?** command to list all the modes under which you can configure alias for commands

```
config              globle configure mode
......
```

The alias also has its help information that is displayed after * in the following format:

```
*command-alias=original-command
```

For example, in the privileged EXEC mode, the default alias s stands for show. You can enter s? to query the key words beginning with s and the help information of the alias.

```
QTECH#s?
*s=show show start-chat start-terminal-service
```

If an alias represents more than one word, the command will be displayed in brackets. For example, if you set sv stand for show version in the privileged EXEC mode, then:

```
QTECH#s?
*s=show *sv="show version" show start-chat start-terminal-service
```

The alias must begin with the first letter of the command. The first letter of the command cannot be a space. The space before the command cannot be used as a valid alias.

```
QTECH# s?
show start-chat start-terminal-service
```

The command alias also has its help information. For example, if the alias ia represents ip address in the interface configuration mode, then:

```
QTECH(config-if)#ia ?
A.B.C.D IP address
dhcp  IP Address via DHCP QTECH(config-if)# ip address
```

The above help information lists the parameters of **ip address** and shows

the actual command name.

You must enter an entire alias; otherwise it cannot be recognized.

Use the **show aliases** command to show the aliases setting in the system.

Configuration Examples

The following example uses def-route to represent the default route setting of ip route 0.0.0.0 0.0.0.0 192.168.1.1 in the global configuration mode:

```
QTECH# configure terminal
QTECH(config)# alias config def-route ip route 0.0.0.0 0.0.0.0 192.168.1.1
QTECH(config)#def-route?
*def-route="ip route 0.0.0.0 0.0.0.0 192.168.1.1" QTECH(config)# end
QTECH# show aliases config globle configure mode alias:
def-route    ip route 0.0.0.0 0.0.0.0
192.168.1.1
```

Related Commands

Comm and	Description
show aliases	Displays the aliases settings.

Platform Description

N/A

1.2. cli-python

Use this command to install and uninstall a phython script for CLI.

cli-python { insmod | rmmod } *python-filename*

Parameter Description

Parameter	Description
python-filename	Python script filename.

Defaults
N/A.

Command Mode

Privileged EXEC mode.

Usage Guide

Upload a python script to the flash directory and run this command to install the python script.

Configuration Examples

The following example installs phython script QTECH.py.

```
QTECH# cli-python insmod QTECH.py
% Python script module "QTECH.py" insert success.
```

Related Commands

Command	Description
N/A.	N/A.

Platform Description

N/A.

1.3. privilege

Use this command to attribute the execution rights of a command to a

command level in global configuration mode. Use the **no** form of this

command to restore the default setting.

privilege *mode* [**all**] [**level** *level* **| reset**] *command-string*

no privilege *mode* [**all**] [**level** *level*] *command-string*

Parameter Description

Parameter	Description
mode	CLI mode of the command to which the execution rights are attributed.
all	Command alias

level *level*	Specifies the execution right levels (0–15) of a command or sub-commands
reset	Restores the command execution rights to its default level
command-string:	Command string to be authorized

Defaults

N/A

Command Mode

Global configuration mode.

Usage Guide

The following table lists some key words that can be authorized by the **privilege** command in CLI mode. The number of command modes that can be authorized may vary with different devices. In the global configuration mode, you can use the **privilege ?** command to list all CLI command modes that can be authorized.

Mode	Descripton
config	Global configuration mode.
exec	Privileged EXEC mode
interface	Interface configuration mode
ip-dhcp-pool	DHCP address pool configuration mode
ip-dhcp-pool	DHCP address pool configuration mode
keychain	KeyChain configuration mode
keychain-key	KeyChain-key configuration mode

Configuration Examples

The following example sets the password of CLI level 1 as **test** and attribute the **reload** rights to reset the device:

```
QTECH(config)#privilege exec level 1 reload
```

You can access the CLI window as level-1 user to usef the **reload** command:

```
QTECH>reload ?
LINE    Reason for reload
```

<cr> You can use the key word **all** to attribute all sub-commands of reload to level-1 users:
```
QTECH(config)# privilege exec all level 1 reload          After the above setting, you can
```

QTECH
МИР ДОСТУПНЕЕ   www.qtech.ru

access the CLI window as level-1 user to use all sub commands of the **reload** command:

```
QTECH>reload ?
LINE   Reason for reload
at     reload at a specific time/date
cancel cancel pending reload scheme
in     reload after a time interval
```

Related Commands

Command	Description
enable secret	Sets the CLI-level password.

Platform Description

N/A.

1.4. show aliases

Use this command to show all the command aliases or aliases in special command modes.

show aliases [*mode*]

Parameter Description

Parameter	Description
mode	Mode of the command represented by the alias.

Defaults

N/A.

Command Mode

 Privileged EXEC mode.

Usage Guide

This command displays the configuration of all aliases if no command mode is input.

 Configuration Examples

 The following example displays the command alias in privileged EXEC mode:

```
QTECH#show aliases exec exec mode alias:
h     help
```

```
p      ping
s      show
u      undebug
un     undebug
```

Related Commands

Command	Description
alias	Sets a command alias.

Platform Description

N/A.

2. BASIC CONFIGURATION MANAGEMENT COMMANDS

2.1. <1-99>

Use this command to restore the suspended Telnet Client session.

<1-99>

Parameter Description

Parameter	Description
N/A	N/A

Defaults

N/A

Command Mode

User EXEC mode

Usage Guide

This command is used to restore the suspended Telnet Client session. Hot keys (ctrl+shift+6 x) are used to exit the Telnet Client session creation. The **<1-99>** command is used to restore the session. If the session is created, you can use the **show session** command to display the session.

Configuration Examples

Related Commands

Platform Description

The following example restores the suspended Telnet Client session.

QTECH# 1

Command	Description
N/A	N/A

N/A

QTECH | www.qtech.ru

МИР ДОСТУПНЕЕ

2.2. banner exec

Use this command to configure a message to welcome the user entering user

EXEC mode through the line. Use the **no** form of this command to restore the

default setting.

banner exec *c message c*

no banner exec

Parameter Description

Parameter	Description
c	Separator of the message. Delimiters are not allowed in the message.
message	Contents of the message.

Defaults

N/A

Command Mode

Global configuration mode

Usage Guide

This command is used to configure the welcome message. The system

discards all the characters next to the terminating symbol.

When you are logging in to the device, the MOTD message is displayed at first, and then the banner login message. After you have logged in, the EXEC message or the incoming message is displayed. If it's a reverse Telnet session, the incoming message is displayed. Otherwise, the EXEC message is displayed.

The messages are for all lines. If you want to disable display the EXEC message on a specific line, configure the **no exec-banner** command on the line.

Configuration Examples

Related Commands

Platform Description

The following example configures a welcome message.

QTECH(config)# banner exec $ Welcome $

Command	Description
N/A	N/A

N/A

2.3. banner incoming

Use this command to configure a prompt message for reverse Telnet session.

Use the **no** form of this command to remove the setting.

banner incoming *c message c*

no banner incoming

Parameter Description

Parameter	Description
c	Separator of the message. Delimiters are not allowed in the message.
message	Contents of the message.

Defaults

N/A

Command Mode

Global configuration mode

Usage Guide

This command is used to configure a prompt message. The system discards all the characters next to the terminating symbol.

When you are logging in to the device, the MOTD message is displayed at first, and then the banner login message. After you have logged in, the welcome message or the prompt

QTECH
МИР ДОСТУПНЕЕ   www.qtech.ru

message is displayed. If it's a reverse Telnet session, the prompt message is displayed. Otherwise, the welcome message is displayed.

Configuration Examples

Related Commands

Platform Description

The following example configures a prompt message for reverse Telnet session.

QTECH(config)# banner incoming $ Welcome $

Command	Description
N/A	N/A

N/A

2.4. banner login

Use this command to configure a login banner. Use **no** form of this command to r remove the setting.

banner login *c message c*

no banner login

Parameter Description

Parameter	Description
c	Separator of the message contained in the login banner. Delimiters are not allowed in the MOTD.
message	Contents of the login banner

Defaults

N/A

Command Mode

Global configuration mode

Usage Guide

QTECH
МИР ДОСТУПНЕЕ   www.qtech.ru

This command sets the login banner message, which is displayed at login. The

system discards all the characters next to the terminating symbol.

Configuration Examples

The following example configures a login banner.

QTECH(config)# banner login $ enter your password$

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

2.5. banner motd

Use this command to set the Message-of-the-Day (MOTD) . Use the **no** form

of this command to remove the setting.

banner [**motd**] *c message c*

no banner [**motd**]

Parameter Description

Parameter	Description
c	Separator of the MOTD. Delimiters are not allowed in the MOTD.
message	Contents of an MOTD

Defaults
N/A

Command Mode

Global configuration mode

Usage Guide

This command sets the MOTD, which is displayed at login. The letters that

follow the separator will be discarded.

Configuration Examples

Related Commands

Platform Description

The following example configures the MOTD.

QTECH(config)# **banner motd** $ *hello,world*$

Command	Description
N/A	N/A

N/A

2.6. banner prompt-timeout

Use this command to configure the prompt-timeout message to notify timeout.

Use the **no** form of this command to remove the setting.

banner prompt-timeout *c message c*

 no banner prompt-timeout

Parameter Description

Parameter	Description
c	Separator of the message. Delimiters are not allowed in the message.
message	Contents of the message.

Defaults

N/A

Command Mode

Global configuration mode

Usage Guide

The system discards all the characters next to the terminating symbol.

When authentication times out, the banner prompt-timeout message is displayed.

Configuration Examples

Related Commands

Platform Description

The following example configures the prompt-timeout message to notify timeout.

QTECH(config)# banner exec $ authentication timeout$

Command	Description
N/A	N/A

N/A

2.7. banner slip-ppp

Use this command to configure the slip-ppp message for the SLIP/PPP

session. Use the **no** form of this command to remove the setting.

banner slip-ppp *c message c*

no banner slip-pp

Parameter Description

Parameter	Description
c	Separator of the message. Delimiters are not allowed in the message.
message	Contents of the message.

Defaults

N/A

Command Mode

Global configuration mode

Usage Guide

This command is used to configure the slip-ppp message for the SLIP/PPP

session. The system discards all the characters next to the terminating

symbol.

When the SLIP/PPP session is created, the slip-ppp message is displayed

on the corresponding terminal.

Configuration Examples

Related Commands

Platform Description

The following example configures the banner slip-ppp message for the SLIP/PPP session.

QTECH(config)# banner slip-ppp $ Welcome $

Command	Description
N/A	N/A

N/A

2.8. boot config

Use this command to modify the path for saving startup configurations and

the corresponding file name.

boot config { **flash:filename** | **usb0:filename** }

no boot config

Parameter Description

Parameter	Description
flash	Saves the startup configuration file in the extensible Flash.

usb0	Saves the startup configuration file in USB0 device. The device must
	have a USB interface into which a USB device is inserted.

Defaults

By default, startup configuration file of a device is saved in **Flash:/config.text**

Command Mode

 Privileged EXEC mode

Usage Guide

The startup configuration file name follows a slash "/", for example, **Flash:/QTECH.text** and **Usb0:/QTECH.text**.

The startup configuration file name consists of a path and a file name. The path is mandatory.

Otherwise, configurations cannot be saved by using the **write** command. Take

Flash:/QTECH/QTECH.text and **Usb0:/QTECH/QTECH.text** as examples,

where the **Flash:/QTECH** and **Usb0:/QTECH** folders must exist. In master-

slave mode, all device paths are required.

To save the startup configuration file to a USB flash drive, the device must provide a USB interface with a USB flash drive inserted. Otherwise, configurations cannot be saved by using

the **write** command. In master-slave mode, all devices must have USB flash drives connected.

 Configuration Examples

 The following example sets the startup configuration file path to flash:/QTECH.text..

QTECH(config)#boot configflash:/QTECH.text

Related Commands

Command	Description
N/A	N/A

Platform Description

QTECH
МИР ДОСТУПНЕЕ   www.qtech.ru

N/A

2.9. configure

Use this command to enter global configuration mode.

configure [**terminal**]

Parameter Description

Parameter	Description
N/A	N/A

Defaults

N/A

Command Mode

Privileged EXEC mode

Usage Guide

N/A

Configuration Examples

The following example enters global configuration mode.

```
QTECH# configure
QTECH(config)#
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

2.10. disable

Use this command to switch from privileged EXEC mode to user EXEC mode

or lower the privilege level.

disable [*privilege-level*]

Parameter Description

Parameter	Description
privilege-level	Privilege level

Defaults

N/A

Command Mode

User EXEC mode

Usage Guide

Use this command to switch to user EXEC mode from privileged EXEC mode. If
a new privilege level is added, the current privilege level will be lowered.

The privilege level that follows the **disable** command must be lower than the current level

Configuration Examples

Related Commands

Platform Description

The following example lowers the current privilege level of the device to level 10.

QTECH# disable 10

Command	Description
enable	Moves from user EXEC mode enter to privileged EXEC mode or reaches a higher level of authority.

N/A

2.11. disconnect

Use this command to disconnect the Telnet Client session.

disconnect *session-id*

Parameter Description

Parameter	Description
session-id	Telnet Client session ID.

Defaults
N/A

Command Mode

User EXEC mode

Usage Guide

This command is used to disconnect the Telnet Client session by setting the session ID.

Configuration Examples

Related Commands

Platform Description

The following example disconnects the Telnet Client session by setting the session ID.

QTECH# disconnect 1

Command	Description
N/A	N/A

N/A

2.12. do telnet

Use this command to login to Telnet server.

do telnet [**oob**] *host* [*port*] [**/source** { **ip** *A.B.C.D* | **ipv6** *X:X:X:X::X* |

interface *interface-name* }] [**/vrf** *vrf-name*] [**via** *mgmt-name*]

Parameter Description

QTECH
МИР ДОСТУПНЕЕ   www.qtech.ru

Parameter	Description
oob	Connects to Telnet server through oob channel. This parameter is available only when the device has a MGMT port.
host	IPv4, IPv6 or host name of Telnet server.
port	Configures TCP port ID. The default is 23.
/source	Specifies source IP or source port for Telnet client.
ip *A.B.C.D*	Specifies source IPv4 address for Telnet client.
ipv6 *X:X:X:X::X*	Specifies source IPv6 address for Telnet client.
interface *interface-name*	Specifies source port for Telnet client.
/vrf *vrf-name*	Specifies VRF table.
via *mgmt-name*	Specifies MGMT table.

Defaults

N/A

Command Mode

User EXEC mode/Privileged EXEC mode/Interface configuration mode

Usage Guide

N/A

Configuration Examples

The following example configures destination IPv4 address 192.168.1.1, uses default port ID, and specifies source port Gi 0/1 and VRF table vpn1.

```
QTECH(config)# do telnet 192.168.1.1 /source interface gigabitEthernet
0/1 /vrf vpn1
```

Related Commands

Platform Description

QTECH МИР ДОСТУПНЕЕ   www.qtech.ru

The following example configures destination IPv6 address

2AAA:BBBB::CCCC.

QTECH(config)# do telnet 2AAA:BBBB::CCCC

The following example configures destination IPv4 address 192.168.1.1 and

specifies MGMT port Mgmt 0.

QTECH(config)# do telnet oob 192.168.1.1 via mgmt 0

Command	Description
N/A	N/A

N/A

2.13. enable

Use this command to enter privileged EXEC mode.

Enable [*privilege-level*]

Parameter Description

Parameter	Description
privilege-level	Privilege level

Defaults
N/A

Command Mode

User EXEC mode

Usage Guide
N/A

Configuration Examples

The following example enters privileged EXEC mode and lowers the privilege level to 14.

```
QTECH> enable 14


Password:
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

2.14. enable password

Use this command to configure passwords for different privilege levels. Use the **no** form of this command to restore the default setting.

enable password [**level** *level*] { [**0**] *password* | **7** *encrypted-password* }

no enable password [**level** *leve l*]

Parameter Description

Parameter	Description
password	Password for the user to enter the EXEC configuration layer
level	User's level.
0	(Optional) The password is in plain text.
7 *encrypted-password*	The password is encyrpted.

Defaults

N/A

Command Mode

Global configuration mode

Usage Guide

No encryption is required in general. The encryption type must be specified for copying and pasting a encrypted password for the device.

A valid password is defined as follows:

- Consists of 1-26 upper/lower case letters and numbers

> ▪ Leading spaces are allowed but usually ignored. Spaces in between

  or at the end are regarded as part of the password..

If an encryption type is specified and a plaintext password is entered, you cannot enter privileged EXEC mode. A lost password that has been encrypted using any method cannot be restored. In this case, you can only reconfigure the device password

Configuration Examples

Related Commands

The following example configures the password as **pw10**.

QTECH(config)# **enable password** *pw10*

Command	Description
enable secret	Sets the security password

Platform Description

N/A

2.15. enable secret

Use this command to configure a security password for different privilege

levels. Use the **no** form of this command to restore the default setting.

enable secret [**level** *level*] { [**0**] *password* | **5** *encrypted-secret* }
no enable secret [**level** *level*]

Parameter Description

Parameter	Description
secret	Password for the user to enter the EXEC configuration layer
level	User's level.
0	"0" for no encryption.
5 *encrypted-password*	"5" for security encryption.

Defaults
N/A

Command Mode

Global configuration mode

Usage Guide

A password comes under two categories: "password" and "security". "Password" indicates a simple password, which can be set only for level 15. "Security" means a security password, which can be set for levels 0-15. If both types of passwords coexist in the system, no "password" type is allowed. If a "password" type password is set for a level other than 15, the system gives an alert and the password is automatically converted into a "security" password. If a "password" type password is set for level 15 and the same as a "security" password, an alert is given. The password must be encrypted, with simple encryption for "password" type passwords and security encryption for "security" type passwords.

Configuration Examples

Related Commands

Platform Description

The following example configures the security password as **pw10**.

QTECH(config)# **enable secret** *0 pw10*

Command	Description
enable password	Sets passwords for different privilege levels.

N/A

2.16. enable service

Use this command to enable or disable a specified service such as **SSH**

Server/Telnet Server/Web Server/SNMP Agent.

enable service { **ssh-sesrver** | **telnet-server** | **web-server** [**http** | **https** | **all**] | **snmp-agent** }

Parameter Description

Parameter	Description

ssh-server	Enables SSH Server. IPv4 and IPv6 services are enabled at the same time.
telnet-server	Enables Telnet Server. IPv4 and IPv6 services are enabled at the same time.
web-server [http | https | all]	Enables HTTP Server. IPv4 and IPv6 services are enabled at the same time.
snmp-agent	Enables SNMP Agent. IPv4 and IPv6 services are enabled at the same time.

Defaults

telnet-server, snmp-agent and web-server are enabled and ssh-server is disabled by default.

Command Mode

Global configuration mode

Usage Guide

Use this command to enable or disable a specified service. Use the **no enable service** command to disable the specified service.

The **enable service web-server** command is followed by three optional keywords: [**http** | **https** | **all**]. If the command is followed by no keyword or by **all**, the command enables http and https services. Followed by **http**, the command enables http service only. Followed by **https**, the command enables https service only.

Configuration Examples

Related Commands

Platform Description

The following example enables the SSH Server.

QTECH(Config)# **enable service ssh-sesrver**

Command	Description
show service	Displays the service status in the current system.

N/A

2.17. end

Parameter Description

Use this command to return to privileged EXEC mode.

end

Parameter	Description
N/A	N/A

Defaults

N/A

Command Mode

All modes except privileged EXEC mode

Usage Guide

N/A

Configuration Examples

The following example returns to privileged EXEC mode.

```
QTECH#con
Enter configuration commands, one per line. End with CNTL/Z. QTECH(config)#line vty 0
QTECH(config-line)#end
*May 20 09:49:38: %SYS-5-CONFIG_I: Configured from console by console QTECH#
```

Related Commands

Command	Description
N/A	N/A

 Platform Description

N/A

2.18. exec-banner

Use this command to enable display of the EXEC message on a specific line.

Use the **no** form of this command to restore the default setting.

exec-banner no

exec-banner

Parameter Description

Parameter	Description
N/A	N/A

Defaults

The EXEC message is displayed on all lines by default.

 Command Mode

 LINE configuration mode

Usage Guide

After you configure the **banner exec** and the **banner motd** commands, the EXEC and the MOTD messages are displayed on all lines by default. If you want to disable display of the EXEC and the MOTD messages on a specific line, configure the **no** form of this command on the line.

This command does not work for the banner incoming message. If you configure the **banner incoming** command, the banner incoming message is displayed on all reverse Telnet sessions and the display cannot be disabled on a specific line.

Configuration Examples

 The following example disables display of the EXEC message on line VTY 1.

```
QTECH(config)# line vty 1
QTECH(config-line)no exec-banner
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

2.19. exec-timeout

Use this command to configure connection timeout for this device in LINE mode. Use the **no** form of this command to restore the default setting and the connection never expires.

exec-timeout *minutes* [*seconds*]

no exec-timeout

Parameter Description

Parameter	Description
minutes	Timeout in minutes.
seconds	(Optional) Timeout in minutes

Defaults

The default is 10 minutes.

Command Mode

Line configuration mode

Usage Guide

If there is no input or output for this connection within a specified time, this connection will expire, and this LINE will be restored to the free status.

Configuration Examples

Related Commands

Platform Description

The following example sets the connection timeout to 5'30''.

QTECH(config-line)#**exec-timeout** *5 30*

Command	Description
N/A	N/A

N/A

2.20. execute

Use this command to execute a command on the file.

execute { [**flash:**] *filename* }

Parameter Description

Parameter	Description
filename	Specifies the file path.

Defaults

N/A

Command Mode

Privileged EXEC mode

Usage Guide

N/A

Configuration Examples

The following example executes a command to configure an IP address for the specified interface.

```
QTECH#execute flash:mybin/config.text executing script file mybin/config.text ......
executing done QTECH#config
Enter configuration commands, one per line. End with CNTL/Z. QTECH(config)#interface
gigabitEthernet 0/1
QTECH(config-if-GigabitEthernet  0/1)#ip  address  192.168.21.158  24  QTECH(config-if-
GigabitEthernet 0/1)#end
*Sep 29 23:35:49: %SYS-5-CONFIG_I: Configured from console by console
QTECH#
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

2.21. exit

Parameter Description

Use this command to return to the upper configuration mode.

exit

Parameter	Description
N/A	N/A

Defaults

N/A

Command Mode

All configuration modes

Usage Guide

N/A

Configuration Examples

The following example returns to the upper configuration mode.

```
QTECH#con
Enter configuration commands, one per line. End with CNTL/Z. QTECH(config)#line vty 0
QTECH(config-line)#end
*May 20 09:49:38: %SYS-5-CONFIG_I: Configured from console by console QTECH#con
Enter configuration commands, one per line. End with CNTL/Z. QTECH(config)#line vty 0
QTECH(config-line)#exit QTECH(config)#exit
*May 20 09:51:48: %SYS-5-CONFIG_I: Configured from console by console QTECH#exit


Press RETURN to get started
```

Related Commands

www.qtech.ru

Command	Description
N/A	N/A

Platform Description

N/A

2.22. help

Parameter Description

Use this command to display the help information.

help

Parameter	Description
N/A	N/A

Defaults

Any mode

Command Mode

Usage Guide

This command is used to display brief information about the help system. You can use "?" to display all commands or a specified command with its parameters.

Configuration Examples

The following example displays brief information about the help system.

```
QTECH#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:
      Full help is available when you are ready to enter a command argument (e.g. 'show
?') and describes each possible argument.
      Partial help is provided when an abbreviated argument is entered and you want to
know what arguments match the input
```

```
(e.g. 'show pr?'.)
```

```
QTECH(config-if-GigabitEthernet 0/0)#? Interface configuration commands:
arp    ARP interface subcommands
bandwidth    Set bandwidth informational parameter carrier-delay        Specify delay for
interface transitions dampening  Enable event dampening
default            Set a command to its defaults description                Interface
specific description dldp Exec data link detection command
duplex Configure duplex operation
efm    Config efm for an interface
end    Exit from interface configuration mode
```

The following example displays all available commands in interface configuration mode.

```
exit          Exit from interface configuration mode
expert        Expert extended ACL
flowcontrol    Set the flow-control value for an interface full-duplex Force full
duplex operation
global        Global ACL
gvrp          GVRP configure command
half-duplex    Force half duplex operation
help          Description of the interactive help system ip      Interface Internet
Protocol config commands
ipv6          Internet Protocol Version 6
isis          Intermediate System - Intermediate System (IS-IS) l2     Config L2
attribute
label-switching Enable interface process mpls packet
 lacp              LACP interface subcommands Link Layer
 lldp              Discovery Protocol
 load-interval      Specify interval for load calculation for an interface Mac
 mac               extended ACL
 mac-address       Set mac-address
 mpls              Multi-Protocol Label Switching
 mtu               Set the interface Maximum Transmission Unit (MTU) Negate a
 no                command or set its defaults
 ntp               Configure NTP
 port-group        Aggregateport/port bundling configuration Redirect
 redirect          packets
 rmon               Rmon command
 security          Configure the Security
 show               Show running system information Shutdown
 shutdown           the selected interface Modify SNMP
 snmp               interface parameters Configure speed
 speed              operation
 switchport        Set switching mode characteristics
 vrf               Multi-af VPN Routing/Forwarding parameters on the
```

```
interface vrrp          VRRP interface subcommands

 xconnect               Xconnect commands
```

```
QTECH(config)#access-list 1 permit ?
  A.B.C.D Source address any     Any
  source host

  host    A single source host
```
The following example displays the parameters of a specified command.

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

2.23. hostname

Use this command to specify or modify the hostname

of a device**. hostname** *name*

Parameter Description

Parameter	Description
name	Device hostname, string, number or hyphen, up to 63 characters.

Defaults
The default is QTECH.

Command Mode

Global configuration mode

Usage Guide

This hostname is mainly used to identify the device and is taken as the

username for the local device during dialup and CHAP authentication.

Configuration Examples

The following example configures the hostname of the device as BeiJingAgenda.

```
QTECH(config)# hostname BeiJingAgenda
BeiJingAgenda(config)#
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

2.24. ip telnet source-interface

Use this command to configure the IP address of an interface as the source address for Telnet connection.

ip telnet source-interface *interface-name*

Parameter Description

Parameter	Description
interface-name	Configures the IP address of the interface as the source address for Telnet connection.

Defaults

N/A

Command Mode

Global configuration mode

Usage Guide

This command is used to specify the IP address of an interface as the source address for global Telnet connetction. When using the telnet command to log in a Telnet server, apply the global setting if no source interface or source address is specified. Use the **no ip telnet source-interface** command to restore it to the default setting.

Configuration Examples

Related Commands

Platform Description

The following example configures the IP address of the *Loopback1* interface as the source address for global Telnet connection.

QTECH(Config)# **ip telnet source-interface** *Loopback1*

Command	Description
telnet	Logs in a Telnet server.

N/A

2.25. language character-set

Use this command to set a language character set.

language character-set { **UTF-8** | **GBK** | **default** }

Parameter Description

Parameter	Description
UTF-8	Specifies the UFT-8 character set,
GBK	Specifies the GBK character set.
default	Specifies the default character set.

Defaults

Default

QTECH
МИР ДОСТУПНЕЕ   www.qtech.ru

Command Mode

Global configuration mode

Usage Guide

If you want to set a character set in running configuration, please delete the character set configuration different from the target character set first.

Configuration Examples

The following example specifies the UFT-8 character set.

```
QTECH(config)#language character-set UTF-8
This may take some time to build configuration, Continue? (yes[no]): y QTECH(config)#
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

2.26. lock

Parameter Description
Use this command to set a temporary password for the terminal.
lock

Parameter	Description
N/A	N/A

Defaults

N/A

Command Mode

User EXEC mode

Usage Guide

You can lock the terminal interface and maintain the session continuity to prevent access to the interface by setting a temporary password. Take the following steps to lock the terminal interface:

- Enter the **lock** command, and the system will prompt you for a password:
- Enter the password, which can be any character string. The system will prompt you to confirm the password, clear the screen, and display the "Locked" information.
- To access the terminal, enter the preset temporary password.
- To lock the terminal, run the **lockable** command in line configuration mode and enable terminal locking in the corresponding line.

Configuration Examples

The following example locks a terminal interface.

```
QTECH(config-line)# lockable QTECH(config-line)# end QTECH# lock
Password: <password> Again: <password> Locked
Password: <password>
```

Related Commands

Platform Description

QTECH#

Command	Description
lockable	Supports terminal locking in the line.

N/A

2.27. lockable

Use this command to support the **lock** command at the terminal. Use the **no**

form of this command to restore the default setting.

lockable

no lockable

Parameter Description

Parameter	Description
N/A	N/A

Defaults

This function is disabled by default

Command Mode

Line configuration mode

Usage Guide   This command is used to lock a terminal interface in the

corresponding line. To lock the terminal, run the lock command in EXEC mode.

Configuration Examples

The following example enables terminal locking at the console port and locks the console.

```
QTECH(config)#  line  console  0  QTECH(config-line)#  lockable  QTECH(config-line)#  end
QTECH# lock
Password: <password> Again: <password> Locked
Password: <password>
```

Related Commands

Platform Description

Command	Description
lock	Locks the terminal.

N/A

2.28. login

Parameter Description

Use this command to enable simple login password authentication on the interface if AAA is disabled. Use the **no** form of this command to restore the default setting.

login

no login

Parameter	Description
N/A	N/A

Defaults

Login is disabled for console and enabled for AUX, TTY and VTY terminals by default.

Command Mode

Line configuration mode

Usage Guide

If the AAA security server is inactive, this command enables simple password authentication at login.

The password is configured for a VTY or console interface.

Configuration Examples

The following example sets a login password authentication on VTY..

```
QTECH(config)# no aaa new-model
QTECH(config)# line vty 0
QTECH(config-line)# password 0 normatest
QTECH(config-line)# login
```

Related Commands

Command	Description
password	Configures the line login password

Platform Description

N/A

2.29. login access non-aaa

Use this command to configure non-AAA authentication on line when AAA is enabled. Use the **no f**orm of this command to restore the default setting.

login access non-aaa

no login access non-

aaa

Parameter Description

Parameter	Description
N/A	N/A

Defaults
This function is disabled by default.

Command Mode

Global configuration mode

Usage Guide

N/A

Configuration Examples

The following example configures VTY line authentication with AAA enabled.

```
QTECH(config)#log access non-aaa QTECH(config)#aaa new-model QTECH(config)#line vty 0 4
QTECH(config-line)#login local

QTECH(config-line)#
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

2.30. login authentication

If the AAA is enabled, login authentication must be performed on the AAA

QTECH
МИР ДОСТУПНЕЕ   www.qtech.ru

server. Use this command to associate login authentication method list. Use the

no form of this command to remove the configuration.

login authentication { **default |** *list-name* }

no login authentication { **default** | *list-name* }

Parameter Description

Parameter	Description
default	Name of the default authentication method list
list-name	Name of the method list

Defaults
The default authentication is used when AAA is enabled.

Command Mode

Line configuration mode

Usage Guide

Configuration Examples

The following example associates the method list on VTY and perform login

authentication on a radius server.

```
QTECH(config)# aaa new-model
QTECH(config)# aaa authentication login default radius QTECH(config)# line vty 0
QTECH(config-line)# login authentication default
```

Related Commands

Command	Description
aaa new-model	Enables the AAA security service.
aaa authentication login	Configures the login authentication method list.

Platform Description

N/A

2.31. login local

Use this command to enable local user authentication on the interface if AAA is disabled. Use the **no**

form of this command to restore the default setting.

login local no login local

Parameter Description

Parameter	Description
N/A	N/A

Defaults

N/A

Command Mode

Line configuration mode

Usage Guide

If the AAA security server is inactive, this command is used for local user login

authentication. The user is allowed to use the **username** command.

Configuration Examples

The following example sets local user authentication on VTY.

```
QTECH(config)#  no  aaa  new-model  QTECH(config)#  username  test  password  0  test
QTECH(config)# line vty 0
QTECH(config-line)# login local
```

Related Commands

Command	Description
username	Configures local user information.

Platform Description

N/A

2.32. login privilege log

Use this command to log privilege change. Use the **no** form of this command to restore the default setting.

login privilege log

no login privilege

log

Parameter Description

Parameter	Description
N/A	N/A

Defaults
This command is disabled by default.

Command Mode

Global configuration mode

Usage Guide

N/A

Configuration Examples

The following example enables the function of logging privilege change.

QTECH(config)# login privilege log

The following example displays the log of privilege change failure.

```
QTECH>enable 10


Password:


Password:


Password:



% Access denied QTECH>
```

```
*Sep 10 11:34:19: %SYS-5-PRIV_AUTH_FAIL: Authentication to
privilege level 10 from console failed
```

The following example displays the log of privilege change success.

```
QTECH>enable 10


Password:

QTECH#
*Sep 10 11:34:20: %SYS-5-PRIV_AUTH_SUCCESS: Authentication to privilege level 10 from
console success
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

2.33. motd-banner

Use this command to enable display of the MOTD message on a specified

line. Use the **no** form of this command to restore the default setting.

motd-banner

no motd-banner

Parameter Description

Parameter	Description
N/A	N/A

Defaults

The MOTD message is displayed on all lines by default.

Command Mode

Line configuration mode

Usage Guide After you configure the **banner exec** and the **banner motd**

commands, the EXEC and the MOTD messages are displayed on all lines by

default. If you want to disable display of the EXEC and the MOTD messages

on a specific line, configure the **no** form of this command on the line.

This command does not work for the incoming message. If you configure the **banner incoming**
command, the banner incoming message is displayed on all reverse Telnet

sessions and the display cannot be disabled on a specific line.

Configuration Examples

The following example disables display of the MOTD message on VTY 1.

```
QTECH(config)# line vty 1
QTECH(config-line)no motd-banner
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

2.34. password

Use this command to configure a password for line login, run the **password** command. Use the **no**

form of this command to restore the default

setting. **password** { [**0**] *password* | **7**

encrypted-password } **no password**

Parameter Description

Parameter	Description
password	Password for remote line login

0	(Optional) The password is in plain text by a QTECH device.
7 *encrypted-password*	The password is encrypted

Defaults

N/A

Command Mode

Line configuration mode

Usage Guide

Configuration Examples

The following example configures the line login password as "red".

```
QTECH(config)# line vty 0
QTECH(config-line)# password red
```

Related Commands

Command	Description
login	Moves from user EXEC mode to privileged EXEC mode or enables a higher level of authority.

Platform Description

N/A

2.35. prompt

Use this command to set the **prompt** command. Use the **no** form of this command to restore the default setting.

prompt *string*

no prompt

Parameter Description

Parameter	Description
string	Character string of the **prompt** command, containing up to 32 letters.

Defaults

N/A

Command Mode

Global configuration mode

Usage Guide

If no prompt string is configured, the system name applies and varies with the system name. The

prompt command is valid only in EXEC mode.

Configuration Examples

The following example sets the prompt string to rgnos.

```
QTECH(config)# prompt rgnos QTECH(config)# end
RGOS
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

2.36. secret

Parameter Description

Use this command to set a password encrypted by irreversible MD5 for line

login. Use the **no** form of this command to restore the default setting.

secret { [**0**] *password* | **5** *encrypted-secret* }

no secret

Parameter	Description
0	(Optional) sets the plaintext password text and encrypts it with irreversible MD5 after configuration.
password	Sets the password plaintext, a string ranging from 1 to 25 characters.
5 encrypted-secret	Sets the password text encrypted by irreversible MD5 and saves it as the encrypted password after configuration.

Defaults

N/A

Command mode

Line configuration mode

Usage Guide

This command is used to set a password encrypted by irreversible MD5 that is authenticated by a remote user through line login.

If the specified encryption type is 5, the logical length of the cipher text to be entered must be 24 and the 1st, 3rd and 8th characters of the password text must be $.

In general, the encryption type does not need to be specified as 5 except when the encrypted password is copied and pasted.

Line mode allows configuration of both "password" and "secret" types passwords at the same time. When the two passwords are the same, the system will send alert notification but the configuration will be permitted. When the system is configured with the two passwords, if the user enters a password that does not match the "secret" type password, it will not continue to match the "password" type password and login fails, enhancing security for the system password.

Configuration Examples

The following example sets the password encrypted by irreversible MD5 for line login to

vty0.

```
QTECH(config)# line vty 0
QTECH(config-line)# secret vty0
```

Related Commands

Platform Description

The following displays the encryption outcome by running the **show** command.

secret 5 1X834$wvx6y794uAD8svzD

Command	Description
login	Sets simple password authentication on the interface as the login authentication mode

N/A

2.37. session

Use this command to connect to another device in VSU multiple-device

environment (box-type device).

session { **master** | **device** *device-number* }

Parameter Description

Parameter	Description
master	Configures the slave host to connect with the master host or the slave management module with the master management module.
device *device-number*	Sets the device number.

Defaults

N/A

Command Mode

User EXEC mode

Usage Guide

N/A

Configuration Examples

The following example configures the slave host to connect with the master host in VSU environment.

QTECH# session master

The following example connects to device1 through session in VSU multiple-device environment (box-type device).

```
QTECH# session device 1
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

2.38. session-timeout

Use this command to configure the session timeout for a remote terminal. Use the **no** form of this command to restore the default setting and the session never expires.

session-timeout *minutes* [**output**]
no session-timeout

Parameter Description

Parameter	Description
minutes	Timeout in minutes.
output	Regards data output as the input to determine whether the session expires.

Defaults

The default timeout is 0.

Command Mode

LINE configuration mode

Usage Guide

If no input or output in current LINE mode is found on the remote terminal for the session within a specified time, this connection will expire, and this LINE will be restored to the free status.

Configuration Examples

Related Commands

Platform Description

The following example specifies the timeout as 5 minutes.

QTECH(config-line)#**exec-timeout** *5***output**

Command	Description
N/A	N/A

N/A

2.39. show boot config

Use this command to display the path for saving startup configurations and the corresponding file name.

show boot config

Parameter Description

Parameter	**Description**
N/A	N/A

Defaults
N/A

QTECH МИР ДОСТУПНЕЕ   www.qtech.ru

Command Mode

Privileged EXEC mode

Usage Guide

N/A

Configuration Examples

The following example displays the path for saving startup configurations and the corresponding file name..

```
QTECH#show boot config

Boot config file: [flash:/QTECH.text]
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

2.40. show debugging

Use this command to display debugging state.
show debugging

Parameter Description

Parameter	Description
N/A	N/A

Defaults
N/A

Command Mode

Privileged EXEC mode

Usage Guide

N/A

Configuration Examples

The following example displays debugging state.

```
QTECH#show debugging


debug fw-group detect intf-state
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

2.41. show hostname

Use this command to display the hostname of a device.

show hostname

Parameter Description

Parameter	Description
N/A	N/A

Defaults
N/A

Command Mode

Privileged EXEC mode

Usage Guide   N/A

Configuration Examples

The following example displays the hostname of a device.

```
QTECH#show hostname QTECH
QTECH#
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

2.42. show language character-set

Use this command to display the language character set configuration.

show language character-set

Parameter Description

Parameter	Description
N/A	N/A

Defaults
N/A

Command Mode

Privileged EXEC mode

Usage Guide

N/A

Configuration Examples

The following example displays the language character set configuration.

```
QTECH#show language character-set
Current language character set encode: UTF-8 QTECH#
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

2.43. show line

Use this command to display the configuration of a line.

show line { **console** *line-num*| **vty** *line-num* | *line-num* }

Parameter Description

Parameter	Description
console	Displays the configuration of a console line.
vty	Displays the configuration of a vty line.
line-num	Number of the line.

Defaults

N/A

Command Mode

Privileged EXEC mode

Usage Guide

Configuration Examples

The following example displays the configuration of a console port.

```
QTECH# show line console 0
CON     Type      speed     Overruns
* 0     CON       9600      45927
Line 0, Location: "", Type: "vt100" Length: 24 lines, Width: 79
columns
Special Chars: Escape Disconnect Activation
```

```
^^x   none

Timeouts: Idle EXEC    Idle    Session

Never      never

History is enabled, history size is 10. Total input: 53564 bytes

Total output:   395756 bytes

Data overflow: 27697 bytes stop rx interrupt:   0 times
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

2.44. show reload

Use this command to display the system restart settings.

show reload

Parameter Description

Parameter	Description
N/A	N/A

Defaults
N/A

Command Mode

Privileged EXEC mode

Usage Guide

Configuration Examples

The following example displays the restart settings of the system.

```
QTECH# show reload
Reload scheduled in 595 seconds. At 2003-12-29 11:37:42
```

```
Reload reason: test.
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

2.45. show running-config

Use this command to display how the current device system is configured..

show running-config

Parameter Description

Parameter	Description
N/A	N/A

Defaults
N/A

Command Mode

Privileged EXEC mode

Usage Guide
N/A

Configuration Examples

Related Commands

Platform Description

N/A

Command	Description

N/A	N/A

N/A

2.46. show service

Use this command to display the service status.

show service

Parameter Description

Parameter	Description
N/A	N/A

Defaults
N/A

Command Mode

Privileged EXEC mode

Usage Guide
N/A

Configuration Examples

The following example displays whether the service is enabled or disabled.

```
QTECH# show service web-server    : disabled
web-server(https): disabled snmp-agent : enabled
ssh-server     : enabled
telnet-server : disabled
```

Related Commands

Command	Description
N/A	N/A

Platform Description

 N/A

2.47. show sessions

Use this command to display the Telnet Client session information.

show sessions

Parameter Description

Parameter	Description
N/A	N/A

Defaults

N/A

Command Mode

User EXEC mode

Usage Guide

Telnet Client session information includes the VTY number and the server IP address.

Configuration Examples

The following example displays the Telnet Client session information.

```
QTECH#show sessions Conn  Address
*1   127.0.0.1
*2   192.168.21.122
```

Related Commands

Command	Description
N/A	N/A

Platform Description

 N/A

2.48. show startup-config

Use this command to display the device configuration stored in the Non Volatile
Random Access Memory (NVRAM).

show startup-config

Parameter Description

Parameter	Description
N/A	N/A

Defaults
N/A

Command Mode

Privileged EXEC mode

Usage Guide

The device configuration stored in the NVRAM is executed while the device is starting.

On a device that does not support **startup-config** is contained in the default configuration file

/config.text in the built-in flash memory.

Configuration Examples

Related Commands

Platform Description

N/A

Command	Description
boot config	Sets the name of the boot configuration file.

N/A

2.49. show this

Use this command to display effective configuration in the current mode.

show this

Parameter Description

Parameter	Description
N/A	N/A

Defaults
N/A

Command Mode

All modes.

Usage Guide

The configuration in the following range modes cannot be displayed. If the

show this command is run, the outcome is NULL.

- Use the **line** *first-line last-line* command to configure lines in a continuous group and enter LINE configuration mode.
- Use the **vlan range** command to configure VLANs and enter vlan range configuration mode. Use the **interface range** command to configure interfaces and enter interface range configuration mode.

Configuration Examples

The following example displays configuration on interface fastEthernet 0/1.

```
QTECH (config)#interface fastEthernet 0/1
QTECH    (config-if-FastEthernet    0/1)#show    this    Building
configuration...
!
spanning-tree  link-type  point-to-point  spanning-tree  mst  0  port-
priority 0
!
end
QTECH (config-if-FastEthernet 0/1)#
```

```
QTECH(config-if-range)#show this


Building configuration...
!
interface VLAN 1 ip address dhcp interface VLAN 2
ip address 1.1.1.1 255.255.255.0
interface VLAN 3
ip address 3.3.3.3 255.255.255.0
!
End
QTECH(config-if-range)#
```

The following example displays configuration on interface range vlan 1-3.

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

2.50. speed

Parameter Description

Use this command to set the speed at which the terminal transmits packets.

Use the **no** form of this command to restore the default setting.

speed *speed*

no speed

Parameter	Description
speed	Transmission rate (bps) on the terminal. For serial ports, optional rates include 9600, 19200,

	38400, 57600, and 115200 bps. The default rate is 9600 bps.

Defaults

The default is 9600.

Command Mode

Line configuration mode

Usage Guide

This command is used to set the speed at which the terminal transmits packets.

Configuration Examples

The following example sets the rate of the serial port to 57600 bps.

```
QTECH(config)# line console 0
QTECH(config-line)# speed 57600
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

2.51. telnet

Parameter Description

Use this command to log in a server that supports telnet connection.

telnet [**oob**] *host* [*port*] [**/source** { **ip** *A.B.C.D* | **ipv6** *X:X:X:X::X* | **interface** *interface-name* }]

Parameter	Description
host	The IP address of the host or host name you want to log in.

www.qtech.ru

Port	Selects the TCP port number for login, 23 by default.
/source	Specifies the source IP address or source interface used by the Telnet client.
ip A.B.C.D	Specifies the source IPv4 address used by the Telnet client.
ipv6 X:X:X:X::X	Specifies the source IPv6 address used by the Telnet client.
interface *interface-name*	Specifies the source interface used by the Telnet client.
oob	Connects to Telnet server through oob channel. This parameter is available only when the device has a MGMT port.

Defaults

N/A

Command Mode

User EXEC mode

Usage Guide

Configuration Examples

The following example sets telnet to IPv4 address 192.168.1.11. The port number is the default, and the source interface is Gi 0/1. The queried VRF routing table is vpn1.

```
QTECH#  telnet  192.168.1.11  /source-interface  gigabitEthernet  0/1
/vrf
vpn1
```

Related Commands

Platform Description

The following example sets telnet to IPv6 address 2AAA:BBBB::CCCC.

QTECH# **telnet** 2AAA:BBBB::CCCC

Command	Description
ip telnet source-interface	Specifies the IP address of the interface as the source address for Telnet connection.
show sessions	Displays the currently established Telnet sessions.
exit	Exits current connection.

N/A

2.52. username

Use this command to set a local username and optional authorization information.. Use the **no** form of this command to restore the default setting.

username *name* [**login mode** { **aux** | **console** | **ssh** | **telnet** }] [**online amount** *number*]
[**permission** *oper-mode path*] [**privilege** *privilege-level*] [**reject remote-login**] [**web-auth**] [**pwd-modify**] [**nopassword** | **password** [**0** | **7**] *text-string*] | **secret** [**0** | **5**] *text-string*]
no username *name*

Parameter Description

Parameter	Description
name	Username
login mode	Sets the login mode.
aux	Sets the login mode to aux.

console	Sets the login mode to console.
ssh	Sets the login mode to ssh.
telnet	Sets the login mode to telnet.
online amount number	Sets the amount of users online simultaneously.
permission oper-mode path	Sets the permission on the specified file. op-mode refers to the operation mode and path to the file or the directory path.
privilege privilege-level	Sets the privilege level, in the range from 0 to 15.
reject remote-login	Confines the account to remote login.
web-auth	Confines the account to web authentication.
pwd-modify	Allows the web authentication user of this account to change the password. It works only when the web-auth command is configured.
nopassword	The account is not configured with a password.
password [**0** | **7**] *text-string*	If the password type is 0, the password is in plain text. If the type is 7, the password is encrypted. The password is in plain text by default.

secret [**0** | **5**] *text-string*	If the password type is 0, the password is in plain text. If the type is 5, the password is encrypted. The password is in plain text by default.

Defaults

N/A

Command Mode

Global configuration mode

Usage Guide

This command is used to establish a local user database for authentication.
If encryption type is 7, the cipher text you enter should contain seven characters to be valid.
In general, do not set the entryption type 7.

Instead, specify the type of encryption as 7 only when the encrypted

password is copied and pasted.

Configuration Examples

The following example configures a username and password and binds the user to level 15.

```
QTECH(config)# username test privilege 15 password 0 pw15
```

The following example configures the username and password exclusive to web authentication.

```
QTECH(config)# username user1 web-auth password 0 pw
```

The following example configures user test with read and write permissions on

all files and directories

```
QTECH(config)# username test permission rw /
```

.The following example configures user test with read, write and execute

permissions on all files and directories except the confix.text file.

```
QTECH(config)# username test permission n /config.text
QTECH(config)# username test permission rwx /
```

Related Commands

Command	Description
login local	Enables local authentication

Platform Description

N/A

2.53. username export

Use this command to export user information to the file.

username export *filename*

Parameter Description

Parameter	Description
filename	The file name.

Defaults

N/A

Command Mode

Privileged EXEC mode

Usage Guide

This command is used to export user information to the file.

Configuration Examples

Related Commands

Platform Description

The following example exports user information to the file.

QTECH# username export user.csv

Command	Description
N/A	N/A

N/A

2.54. username import

Use this command to import user information from the file.

username import *filename*

Parameter Description

Parameter	Description
filename	The file name.

Defaults
N/A

Command Mode

Privileged EXEC mode

Usage Guide

This command is used to import user information from the file.

Configuration Examples

Command	Description
N/A	N/A

Related Commands

The following example imports user information from the file.

QTECH# username import user.csv

Platform Description

N/A

2.55. write

Parameter Description

Use this command to save **running-config** at a specified location.

write [**memory | terminal**]

Parameter	Description
memory	Writes the system configuration (running-config) into NVRAM, which is equivalent to **copy running-config startup-config**.
terminal	Displays the system configuration, which is equivalent to **show** **running-config**.

Defaults

N/A

Command Mode

Privileged EXEC mode

Usage Guide

Despite the presence of alternative commands, these commands are widely used and accepted.

Therefore, they are reserved to facilitate user operations.

The system automatically creates the specified file and writes it into system

configuration if the device that stores the file exists;

The system will ask you whether to save the current configuration in default boot configuration file

/config.text and perform an action as required if the device that stores the file

does not exist possibly because the boot configuration file is stored on a

removable storage device such as USB or SD disk, and the device has not been

loaded when you run the **write** [**memory**] command.

Configuration Examples

The following example saves **running-config** at a specified location.

```
QTECH# write
Building configuration...
[OK]
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

3.1. access-class

Use this command to control login into the terminal through IPv4 ACL. Use the
no form of this command to restore the default setting.

access-class { *access-list-number* | *access-list-name* } { **in | out** }
no access-class { *access-list-number* | *access-list-name* } { **in | out** }

Parameter Description

Parameter	Description
access-list-number	Specifies the ACL number. Standard IP ACL number is from 1 to 99 and from 1300 to 1999. Extended IP ACL number is from 100 to 199 and from 2000 to 2699.
access-list-name	Specifies the ACL name.
in	Filters the incoming connections.
out	Filters the outgoing connections.

Defaults

N/A

Command Mode

Line configuration mode

Usage Guide

N/A

Configuration Examples

The following example uses ACL 20 to filter the incoming connections in line VTY 0 5.

```
QTECH(config)# line vty 0 5
QTECH(config-line)access-list 20 in
```

```
QTECH(config)# line vty 6 7
QTECH(config-line)access-list test out
```

QTECH
МИР ДОСТУПНЕЕ   www.qtech.ru

The following example uses the ACL named "test" to filter the outgoing connections in line VTY 6 7.

Related Commands

Command	Description
show running	Displays status information

Platform Description

N/A

3.2. accounting commands

Use this command to enable command accounting in the line. Use the **no** form of this command to restore the default setting.

accounting commands *level* { **default** | *list-name* }
no accounting commands *level*

Parameter Description

Parameter	Description
level	Command level ranging from 0 to 15. The command of this level is accounted when it is executed.
default	Default authorization list name.
list-name	Optional list name.

Defaults
This function is disabled by default.

Command Mode

Line configuration mode

Usage Guide

This function is used together with AAA authorization. Configure AAA command accounting first, and then apply it on the line.

Configuration Examples

The following example enables command accounting in line VTY 1 and sets the command level to 15.

```
QTECH(config)# aaa new-model
QTECH(config)# aaa accounting commands 15 default start-stop group
tacacs+
QTECH(config)# line vty 1
QTECH(config-line)# accounting commands 15 default
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

3.3. accounting exec

Use this command to enable user access accounting in the line. Use the **no** form of this command to restore the default setting.

accounting commands *level* { **default** | *list-name* }

no accounting commands *level*

Parameter Description

Parameter	Description
level	Command level ranging from 0 to 15. The command of this level is accounted when it is executed.
default	Default authorization list name.
list-name	Optional list name.

Defaults
This function is disabled by default.

Command Mode

Line configuration mode

Usage Guide

This function is used together with AAA authorization. Configure AAA EXEC accounting first, and then apply it on the line.

Configuration Examples

The following example enables user access accounting in line VTY 1.

```
QTECH(config)# aaa new-model
QTECH(config)# aaa accounting exec default start-stop group radius
QTECH(config)# line vty 1
QTECH(config-line)# accounting exec default
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

3.4. authorization commands

Use this command to enable authorization on commands, Use the **no** form of this command to restore the default setting.

authorization commands *level* { **default** | *list-name* }
no authorization commands *level*

Parameter Description

Parameter	Description
level	Command level ranging from 0 to 15. The command of this level is executed after authorization is performed.

default	Default authorization list name,
list-name	Optional list name.

Defaults

This function is disabled by default.

Command Mode

Line configuration mode

Usage Guide

This function is used together with AAA authorization. Configure AAA

authorization first, and then apply it on the line.

Configuration Examples

The following example enables authorization on commands of level 15 in line VTY 1.

```
QTECH(config)# aaa new-model
QTECH(config)# aaa authorization commands 15 default group tacacs+
QTECH(config)# line vty 1
QTECH(config-line)# authorization commands
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

3.5. authorization exec

Use this command to enable EXEC authorization for the line. Use the **no** form

of this command to restore the default setting.

authorization { **default** | *list-name* }

no authorization exec

Parameter Description

Parameter	Description
default	Default authorization list name,
list-name	Optional list name.

Defaults

This function is disabled by default,

Command Mode

Line configuration mode

Usage Guide

This function is used together with AAA authorization. Configure AAA EXEC

authorization first, and then apply it on the line.

Configuration Examples

The following example performs EXEC authorization to line VTY 1.

QTECH(config)# aaa new-model

```
QTECH(config)#  aaa  authorization  exec  default  group  radius
QTECH(config)# line vty 1
QTECH(config-line)# authorization exec default
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

3.6. clear line

Use this command to clear connection status of the line.

clear line { **console** *line-num* | **vty** *line-num* **|** *line-num* }

Parameter Description

Parameter	Description
console	Clears connection status of the console line.
vty	Clears connection status of the virtual terminal line.
line-num	Specifies the line to be cleared.

Defaults

N/A

Command Mode

Privileged EXEC mode

Usage Guide

This command is used to clear connection status of the line and restore the line to the unoccupied status to create new connections.

Configuration Examples

Related Commands

Platform Description

The following example clears connection status of line VTY 13. The connected session on the client (such as Telnet and SSH) in the line is disconnected immediately.

QTECH# clear line vty 13

Command	Description
N/A	N/A

N/A

QTECH | www.qtech.ru
МИР ДОСТУПНЕЕ

3.7. disconnect-character

Use this command to set the hot key that disconnects the terminal service connection. Use the **no** form of this command to restore the default setting.

disconnect-character *ascii-value*

no disconnect-character

Parameter Description

Parameter	Description
ascii-value	ASCII decimal value of the hot key that disconnects the terminal service connection, in the range from 0 to 255.

Defaults

The default hot key is **Ctrl+D** and the ASCII decimal value is 0x04.

Command Mode

Line configuration mode

Usage Guide

This command is used to set the hot key that disconnects the terminal service connection. The hot key cannot be the commonly used ASCII node such as characters ranging from a to z, from A to Z or numbers ranging from 0 to 9. Otherwise, the terminal service cannot operate properly.

Configuration Examples

The following example sets the hot key that disconnects the terminal service connection on line VTY 0 5 to **Ctrl+E** (0x05).

```
QTECH(config)# line vty 0 5
QTECH(config-line)# disconnect-character 5
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

3.8. escape-character

Use this command to set the escape character for the line. Use the **no** form

of this command to restore the default setting.

escape-character *escape-value*

no escape-character

Parameter Description

Parameter	Description
escape-value	Sets the ASCII value corresponding to the escape character for the line, in the range from 0 to 255.

Defaults

The default escape character is **Ctrl+^** (**Ctrl+Shift+6**) and the ASCII decimal value is 30.

Command Mode

Line configuration mode

Usage Guide

After configuring this command, press the key combination of the escape character and then press

x, the current session is disconnected to return to the original session.

Configuration Examples

The following example sets the escape character for the line to 23 (**Ctrl+w**).

```
QTECH(config)# line vty 0
QTECH(config-line)# escape-character 23
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

3.9. exec

Parameter Description

Use this command to enable the line to enter the command line interface.

Use the **no** form of this command to disable the function.

exec no

exec

Defaults

This function is enabled by default.

Parameter	Description
N/A	N/A

Command Mode

Line configuration mode

Usage Guide

The **no exec** command is used to ban the line from entering the command line interface. You have to enter the command line interface through other lines,

Configuration Examples

The following example bans line VTY 1 from entering the command line interface.

QTECH(config)# line vty 1

```
QTECH(config-line)# no exec QTECH# show users
Line  User  Host(s)    Idle  Location



 ---------
*            ---      idle         00:00:00    ---
  0 con 0

  1 vty 0   ---      idle         00:01:03
                                   20.1.1.2

  3 vty 2   ---          idle    00:00:13             20.1.1.
                                                        2
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

3.10. history

Use this command to enable command history for the line or set the number of commands in the command history. Use the **no history** command to disable command history. Use the **no history size** command to restore the number of commands in the command history to the default setting. **history** [**size** *size*]

no history
no history size

Parameter Description

Parameter	Description
size *size*	The number of commands, in the range from 0 to 256.

Defaults

This function is enabled by default, The default *size* is 10.

Command Mode

Line configuration mode

Usage Guide

N/A

Configuration Examples

The following example sets the number of commands in the command history to 20 for line VTY 0 5.

```
QTECH(config)# line vty 0 5
QTECH(config-line)# history size 20
```

The following example disables the command history for line VTY 0 5.
```
QTECH(config)# line vty 0 5
QTECH(config-line)# no history
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

3.11. ipv6 access-class

Use this command to configure access to the terminal through IPv6 ACL. Use the

no form of this command to restore the default setting.

ipv6 access-class *access-list-name* { **in** | **out** }
no ipv6 access-class *access-list-name* { **in** | **out** }

Parameter Description

Parameter	Description

access-list-name	Specifies the ACL name.
in	Filters the incoming connections.
out	Filters the outgoing connections.

Defaults

N/A

Command Mode

Line configuration mode

Usage Guide   N/A

Configuration Examples

The following example uses the ACL named "test" to filter the outgoing IPv6 connections in line VTY 0 4.

```
QTECH(config)# line vty 0 4
QTECH(config-line)ipv6 access-list test out
```

Related Commands

Command	Description
show running	Displays status information

Platform Description

N/A

3.12. length

Use this command to set the screen length for the line. Use the **no** form of this command to restore the default setting.

Parameter Description

length *screen-length*
no length

Parameter	Description
screen-length	Sets the screen length, in the range from 0 to 512.

Defaults

The default is 24.

Command Mode

Line configuration mode

Usage Guide

N/A

Configuration Examples

Related Commands

Platform Description

The following example sets the screen length to 10.

QTECH(config-line)# length 10

Command	Description
N/A	N/A

N/A

3.13. line

Parameter Description

Use this command to enter the specified LINE mode.

line [**console** | **vty**] *first-line* [*last-line*]

Parameter	Description
console	Console port

vty	Virtual terminal line, applicable for telnet/ssh connection.
first-line	Number of first-line to enter
last-line	Number of last-line to enter

Defaults

N/A

Command Mode

Global configuration mode

Usage Guide

Configuration Examples

Related Commands

Platform Description

The following example enters the LINE mode from LINE VTY 1 to 3:

QTECH(config)# line vty 1 3

Command	Description
N/A	N/A

N/A

3.14. line vty

Use this command to increase the number of VTY connections currently available. Use the **no** form of this command to restore the default setting.

line vty *line-number*
no line vty *line-number*

Parameter Description

Parameter	Description

line-number	Number of VTY connections, in the range from 0 to 35.

Defaults

Command Mode

Global configuration mode.

Usage Guide

Configuration Examples

Related Commands

Platform Description

The following example increases the number of available VTY connections to 20. The available VTY connections are numbered 0 to 19.

QTECH(config)# line vty 19

The following example decreases the number of available VTY connections to 10. The available VTY connections are numbered 0-9.

QTECH(config)# line vty 10

Command	Description
N/A	N/A

N/A

3.15. location

Use this command to configure the line location description. Use the **no** form of this command to restore the default setting.

location *location*
no location

Parameter Description

Parameter	Description
location	Line location description

Defaults
N/A

Command Mode

Line configuration mode

Usage Guide
N/A

Configuration Examples

The following example describes the line location as Swtich's Line VTY 0.

```
QTECH(config)# line vty 0
QTECH(config-line)# location Swtich's Line Vty 0
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

3.16. monitor

Use this command to enable log display on the terminal. Use the **no** form of this command to restore the default setting,

monitor no monitor

Parameter Description

Parameter	Description
N/A	N/A

Defaults
N/A

Command Mode

Line configuration mode

Usage Guide   N/A

Configuration Examples

The following example enables log display on the terminal in VTY line 0 5.

```
QTECH(config)# line vty 0 5
QTECH(config-line)# monitor
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

3.17. privilege level

Use this command to set the privilege level for the line. Use the **no** form of this command to restore the default setting.

privilege level *level*
no privilege level

Parameter Description

Parameter	Description
level	Privilege level, in the range from 0 to 15.

Defaults
The default is 1.

Command Mode

Line configuration mode

Usage Guide

N/A

Configuration Examples

The following example sets the privilege level for the line VTY 0 4 to 14.

```
QTECH(config)# line vty 0 4
QTECH(config-line)privilege level 14
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

3.18. refuse-message

Use this command to set the login refusal message for the line. Use the **no** form of this command to restore the default setting.

refuse-message [*c message c*]

no refuse-message

Parameter Description

Parameter	Description
c	Delimiter of the login refusal message, which is not allowed within the message.
message	Login refusal message.

Defaults

N/A

Command Mode

Line configuration mode

Usage Guide

This command is used to set the login refusal message for the line. The characters entered after the ending delimiter are discarded directly, The login refusal message is displayed when the user has been refused to login.

Configuration Examples

The following example sets the login refusal message for the line to "Unauthorized user cannot login to the QTECH device".

```
QTECH(config-line)#vacant-message @ Unauthorized user cannot login to the
QTECH device @
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

3.19. show history

Use this command to display the command history of the line.

show history

Parameter Description

Parameter	Description
N/A	N/A

Defaults

N/A

Command Mode

Privileged EXEC mode

QTECH
МИР ДОСТУПНЕЕ
www.qtech.ru

Usage Guide

N/A

Configuration Examples

The following example displays the command history of the line.

```
QTECH# show history exec:
sh privilege sh run
show user sh user all
show history
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

3.20. show line

Use this command to display line configuration.

show line { **console** *line-num* | **vty** *line-num* **|** *line-num* }

Parameter Description

Parameter	Description
console	Displays configuration for the console line.
vty	Displays configuration for the virtual terminal line.
line-num	Displays the line.

Defaults

N/A

Command Mode

Privileged EXEC mode

Usage Guide   N/A

Configuration Examples

Related Commands

Platform Description

The following example displays configuration for the console port.

```
QTECH# show line console 0 CON      Type  speed Overruns
* 0   CON   9600  45927
Line 0, Location: "", Type: "vt100" Length: 24 lines, Width: 79 columns
Special Chars: Escape Disconnect Activation
^^x   none       ^M Timeouts:       Idle EXEC   Idle Session
never never
History is enabled, history size is 10. Total input: 53564 bytes
Total output:  395756 bytes
Data overflow: 27697 bytes stop rx interrupt:  0 times
```

Field	Description
CON	Terminal type. CON indicates console; 0 indicates terminal line number and * ahead of the number means that the terminal is in use.
Type	Terminal type, including CON, AUX, TTY, and VTY.
speed	Asynchronous speed.
Overruns	The number of overrun errors received by the flash.
Line 0	Terminal line number.
Location: ""	Line location configuration.
Type: "vt100"	Compatibility standard.
Special Chars	Special characters, including Escape, Disconnect, and Activation characters.
Timeouts	Timeout value; "never" indicates no timeout.
History	Whether to enable command history; the number of commands in the

	command history.
Total input	Data volume received from the drive.
Total output	Date volume sent to the drive.
Data overflow	Overflowing data volume.
stop rx interrupt	Data reception interruption times.

Command	Description
N/A	N/A

N/A

3.21. show privilege

Use this command to display the privilege level of the line.

show privilege

Parameter Description

Parameter	Description
N/A	N/A

Defaults
N/A

Command Mode

Privileged EXEC mode

Usage Guide   N/A

Configuration Examples

The following example displays the privilege level of the line.

```
QTECH# show privilege
Current privilege level is 10
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

3.22. show users

Use this command to display the login user information.

show users [**all**]

Parameter Description

Parameter	Description
all	Displays line user information, including users logging into the line and users not logging into the line.

Defaults
N/A

Command Mode

Privileged EXEC mode

Usage Guide
N/A

Configuration Examples

Related Commands

Platform Description

The following example displays the information about users logging into the line,

```
QTECH# show users
Line   User   Host(s)      Idle   Location
```

```
 0 con 0   ---       idle idle idle 00:00:46       ---
 1 vty 0   ---                00:00:29      20.1.1.2
   vty
 2   1     ---                00:00:00      20.1.1.2
*
```

The following example displays all line user information,

```
QTECH(config)# show users all
Line   User   Host(s)       Idle   Location


  0  con      ---       idle       00:00:49   ---
     0

  1  vty      ---       idle       00:00:32   20.1.1.2
     0

* 2  vty      ---       idle       00:00:00   20.1.1.2
     1

  3  vty      ---                  00:00:00   ---
     2

  4  vty      ---                  00:00:00   ---
     3

  5  vty      ---                  00:00:00   ---
     4

  6  vty  5   ---                  00:00:00              ---
```

Command	Description
N/A	N/A

N/A

3.23. speed

Parameter Description

Use this command to configure the baud rate for the specified line. Use the **no** form of this command to restore the default setting,

speed *baudrate*

no speed

Parameter	Description
baudrate	Sets the baud rate, in the range from 9600 to 115200.

Defaults

The default is 9600.

Command Mode

LINE configuration mode

Usage Guide

N/A

Configuration Examples

Related Commands

Platform Description

The following example sets the baud rate to 115200,

QTECH(config-line)# speed 115200

Command	Description
N/A	N/A

N/A

3.24. terminal escape-character

Use this command to set the escape character for the current terminal. Use the **no** form of this command to restore the default setting.

terminal escape-character *escape-value*

terminal no escape-character

Parameter Description

Parameter	Description

escape-value	Sets the ASCII value corresponding to the escape character for the current terminal, in the range from 0 to 255.

Defaults

The default escape character is **Ctrl+^** (**Ctrl+Shift+6**) and the ASCII decimal value is 30.

Command Mode

Privileged EXEC mode

Usage Guide

After configuring this command, press the key combination of the escape character and then press

x, the current session is disconnected to return to the original session.

Configuration Examples

Related Commands

The following example sets the escape character for the current terminal to 23 (**Ctrl+w**).

QTECH# terminal escape-character 23

Command	Description
N/A	N/A

Platform Description

N/A

3.25. terminal history

Use this command to enable command history for the current terminal or set the

number of commands in the command history. Use the **no history** command to

disable command history. Use the **no history size** command to restore the

number of commands in the command history to the default setting.

terminal history [**size**

size] **terminal no history**

terminal no history size

Parameter Description

Parameter	Description
size *size*	Sets the number of commands, in the range from 0 to 256.

Defaults

This function is enabled by default, The default *size* is 10.

Command Mode

Privileged EXEC mode

Usage Guide

N/A

Configuration Examples

Related Commands

Platform Description

The following example sets the number of commands in the command history to 20 for the current terminal.

QTECH# terminal history size 20

The following example disables the command history for the current terminal.

QTECH# terminal no history

Command	Description
N/A	N/A

N/A

3.26. terminal length

Use this command to set the screen length for the current terminal. Use

the **no** form of this command to restore the default setting.

terminal length *screen-length*

terminal no length

Parameter Description

Parameter	Description
screen-length	Sets the screen length, in the range from 0 to 512.

Defaults

The default is 24.

Command Mode

Privileged EXEC mode

Usage Guide

N/A

Configuration Examples

Related Commands

Platform Description

The following example sets the screen length for the current terminal to 10.

QTECH# terminal length 10

Command	Description
N/A	N/A

N/A

3.27. terminal location

Use this command to configure location description for the current device.

Use the **no** form of this command to restore the default setting.

terminal location *location*

terminal no location

Parameter Description

Parameter	Description
location	Configures location description of the current device.

Defaults

N/A

Command Mode

Privileged EXEC mode

Usage Guide

N/A

Configuration Examples

The following example configures location description of the current device as "Swtich's Line Vty 0".

QTECH# terminal location Swtich's Line Vty 0

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

3.28. terminal speed

Use this command to configure the baud rate for the current terminal. Use

the **no** form of this command to restore the default setting,

terminal speed *baudrate*

terminal no speed

Parameter Description

Parameter	Description

| *baudrate* | Sets the baud rate, in the range from 9600 to 115200. |

Defaults

The default is 9600.

Command Mode

Privileged EXEC mode

Usage Guide

N/A

Configuration Examples

Related Commands

Platform Description

The following example sets the baud rate for the current terminal to 115200,

QTECH# terminal speed 115200

Command	Description
N/A	N/A

N/A

3.29. terminal width

Use this command to set the screen width for the terminal.

terminal width *screen-width*

terminal no width

Parameter Description

Parameter	**Description**
screen-width	Sets the screen width for the terminal, in the range from 0 to 256.

Defaults

The default is 79.

Command Mode

Privileged EXEC mode

Usage Guide

N/A

Configuration Examples

Related Commands

Platform Description

The following example sets the screen width for the terminal to 10.

QTECH# terminal width 10

Command	Description
N/A	N/A

N/A

3.30. timeout login

Use this command to set the login authentication timeout for the line. Use the **no** form of this command to restore the default setting.

timeout login response *seconds*
no timeout login response

Parameter Description

Parameter	Description
response	The time period during which the line waits for the user to enter any message.
seconds	Timeout value, in the range from 1 to 300 in the

	unit of seconds.

Defaults

The default is 30.

Command Mode

Line configuration mode

Usage Guide

N/A

Configuration Examples

The following example sets the login authentication timeout to 300 seconds for line VTY 0 5.

```
QTECH(config)# line vty 0 5
QTECH(config-line)login timeout response 300
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

3.31. transport input

Use this command to set the specified protocol under Line that can be used for

communication. Use the **no** form of this command to restore the default setting.

transport input { **all** | **ssh** | **telnet | none** }

no transport input { **all** | **ssh** | **telnet** | **none** }

Parameter Description

Parameter	Description
all	Allows all the protocols under Line to be used for communication

ssh	Allows only the SSH protocol under Line to be used for communication
telnet	Allows only the Telnet protocol under Line to be used for communication
none	Allows none of protocols under Line to be used for communication

Defaults

all, **ssh** and **telnet** protocols are allowed.

Command Mode

Line configuration mode

Usage Guide

N/A

Configuration Examples

Related Commands

Platform Description

The following example specifies that only the Telnet protocol is allowed to login in line vty 0 4.

QTECH(config)# line vty 0 5

QTECH(config-line)transport input ssh

Command	Description
show running	Displays status information

N/A

3.32. vacant-message

Use this command to set the logout message. Use the **no** form of this command to restore the default setting.

vacant-message [*c message c*]

no vacant-message

Parameter Description

Parameter	Description
c	Delimiter of the logout message, which is not allowed within the message.
message	Logout message.

Defaults

N/A

Command Mode

Line configuration mode

Usage Guide

This command is used to set the logout message for the line. The characters entered after the ending delimiter are discarded directly, The logout message is displayed when the user logs out.

Configuration Examples

Related Commands

Platform Description

The following example sets the logout message to "Logout from the QTECH device".

QTECH(config-line)#vacant-message @ Logout from the QTECH device @

Command	Description

N/A	N/A

N/A

3.33. width

Parameter Description

Use this command to set the screen width for the line. Use the **no** form of this command to restore the default setting,

width *screen-width*

no width

Parameter	Description
screen-width	Sets the screen width for the line, in the range from 0 to 256,

Defaults

The default is 79.

Command Mode

Line configuration mode

Usage Guide

N/A

Configuration Examples

Related Commands

Platform Description

The following example sets the screen width for the line to 10.

QTECH(config-line)# width 10

Command	Description
N/A	N/A

N/A

4.1. cd

Parameter Description

Use this command to set the present directory for the file system.

cd [*filesystem:] [directory*]

Parameter	Description
filesystem:	The URL of filesystem, followed by a colon (:). The filesystem includes **flash:**, **sata:**, **usb:**, and **tmp:**.
directory	The path name. A file name starts with "/" is an absolute path. Otherwise, it is a relative path.

Defaults

The default directory is the flash root directory.

Command Mode
Usage Guide

Configuration Examples

Privileged EXEC mode.

The following example sets the SATA directory.
```
QTECH#pwd
  flash:/
QTECH#cd sata:
QTECH#pwd
```
data:/

Related Commands

Command	Description
pwd	Displays the present word directory.

Platform Description

N/A.

4.2. copy

Use this command to copy a file from the specified source directory to the

specified destination directory.

copy source-url destination-url

Parameter Description

Parameter	Description
source-url	**Source file URL, which can be local or remote.**
destination-url	**Destination file URL, which can be local or remote.**

Defaults
N/A.

Command Mode

Privileged EXEC mode.

Usage Guide

when the file to be copied exists on the target URL, the target file system determines the action, such as error report, overwrite, or offering you the choice.

The following table lists the URL:

Prefix	Description
running-config	Running configuration file.
startup-config	startup configuration file.
flash:	local FLASH file system.
tftp:	The URL of TFTP network server, in the format as follows: **tftp**:[[//location]/directory]**/filename**
oob_tftp : [via	The URL of TFTP network server connected with the

mgmt. { *number* }]	Out-of-Band port, If there are multiple MGMT ports, you can specify one.

Configuration Examples

The following example copies the netconfig file from device 192.168.64.2 to the

FLASH disk and the netconfile file exists locally.

```
Do you want to overwrite [/data/netconfig]? [Y/N]:y Press Ctrl+C
to quit
!
Copy success.
```

Related Commands

Command	Description
delete	Deletes the file.
rename	Renames the file.
dir	Displays the file list of the specified directory.

Platform Description

N/A

4.3. delete

Use this command to delete the files in the present directory.

delete [*filesystem*:] *file-url* | **startup-config** }

Parameter	Description
filesystem:	**The URL of file system, followed by a colon (:). The file system includes flash:, sata:, usb: and tmp:.**
file-url	**The file name containing the path. A file name starts with "/" is an absolute path. Otherwise, it is a relative path.**
startup-config	**The startup file.**

Parameter Description

Defaults

The default *filesystem*: is **flash:**.

Command Mode

Privileged EXEC mode.

Usage Guide

Configuration Examples

The following example deletes the fstab file on the FLASH disk.

```
QTECH#pwd flash:/ QTECH#dir
Directory of flash:/
1   -rw-       336  Jan 03 2012 18:53:42  fstab
2   -rw-      4096  Jan 03 2012 12:32:09  rc.d
3   -rw-  10485760  Jan 03 2012 18:13:37  rpmdb
3 files, 0 directories
10,490,192 bytes total (13,192,656 bytes free) QTECH#delete flash:/fstab
Do you want to delete [flash:/fstab]? [Y/N]:y Delete success.
QTECH#dir
```

Related Commands

Command	Description
copy	Copies the file.
dir	Displays the file list of the specified directory.

Platform Description

N/A

4.4. dir

Use this command to display the files in the present directory.
dir [*filesystem*:] [*directory*]

Parameter Description

Parameter	Description
filesystem	The URL of file system, followed by a colon (:). The file system includes **flash:**, **usb:** and **tmp:**.

directory	The path name. A file name starts with "/" is an absolute path. Otherwise, it is a relative path.

Defaults

By default, only the information under the present working path is displayed.

Command Mode

Privileged EXEC mode.

Usage Guide

Configuration Examples

The following example displays the file information of the root directory in the FLASH disk.

```
QTECH#dir flash:/ Directory of
flash:/
1  -rw-       336  Jan 03 2012 18:53:42  fstab
2  -rw-      4096  Jan 03 2012 12:32:09  rc.d
3  -rw-  10485760  Jan 03 2012 18:13:37  rpmdb
3 files, 0 directories
10,490,192 bytes total (13,192,656 bytes free)
```

Field	Description
1, 2, 3…	Index number
-rw-	Permissions on a file include: ● d: directory ● r: read ● w: write ● x: executable
10485760	File size
rpmdb	File name
files	File number
directories	Directory number
total	Total size
free	Available space

Related Commands

Command	Description
Pwd	Displays the present directory.
Cd	Sets the present directory of the file system.

Platform Description

N/A.

4.5. eject

Parameter Description

Parameter	Description
N/A	N/A

Use this command to remove the USB.

eject [**usb0**]

Defaults

N/A

Command Mode

Privileged EXEC mode

Usage Guide

N/A

Configuration Examples

The following example removes the USB disk.

```
QTECH#eject ?
  usb0 Eject usb disk 0

QTECH#eject usb0 QTECH#
```

Related Commands

Command	Description

N/A	N/A

Platform Description

N/A

4.6. erase

Parameter Description

Use this command to erase the device or file that does't have a file system.

erase *filesystem*

Parameter	Description
filesystem:	Name of the file system, followed by a colon (:). For example, usb0:.

Defaults

N/A

Command Mode

Privileged EXEC mode

Usage Guide

N/A

Configuration Examples

The following example erases the USB filesystem.

```
QTECH#erase usb0:
Sure to erase usb0:? [Y/N] y Erasing disk
usb0 …
Erase disk usb0 done!
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

4.7. file

Parameter Description

Use this command to display the information about a file.

file [*filesystem*:] *file-url*

Parameter	Description
filesystem:	The URL of file system, followed by a colon (:). The file system includes **flash:**, **usb:** and **tmp:**.
file-url	The file name containing the path. A file name starts with "/" is an absolute path. Otherwise, it is a relative path.

Defaults

The default *filesystem*: is **flash:**.

Command Mode

Privileged EXEC mode

Usage Guide

N/A

Configuration Examples

The following example displays the information about gcc executable file.

```
QTECH#file flash:/gcc
/usr/bin/gcc-4.6: ELF 32-bit LSB executable, Intel 80386, version 1 (SYSV),
dynamically linked (uses shared libs), for GNU/Linux 2.6.15, stripped
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

4.8. file prompt

Use this command to set the prompt mode.

QTECH
МИР ДОСТУПНЕЕ

www.qtech.ru

file prompt [**noisy** | **quiet**]

Parameter Description

Parameter	Description
noisy	Displays prompt for all operation.
quiet	Displays prompt rarely.

Defaults

The default mode is noisy.

Command Mode

Privileged EXEC mode

Usage Guide

N/A

Configuration Examples

Related Commands

Platform Description

The following example sets the prompt mode to noisy.

QTECH#file prompt noisy

Command	Description
N/A	N/A

N/A

4.9. mkdir

Parameter Description

Use this command to create a directory.

mkdir [*filesystem*:] *directory*

Parameter	Description
filesystem:	The URL of file system, followed by a colon (:). The file system

	includes **flash:**, **usb:** and **tmp:**.
directory	The path name. A file name starts with "/" is an absolute path. Otherwise, it is a relative path.

Defaults

The default *filesystem*: is **flash**:.

The default *directory* is the root directory.

Command Mode

Privileged EXEC mode.

Usage Guide

Configuration Examples

The following example creates a directory named newdir:

```
QTECH#dir  Directory of flash:/

1  -rw-        336  Jan 03 2012 18:53:42  fstab

2  -rw-       4096  Jan 03 2012 12:32:09  rc.d

3  -rw-   10485760  Jan 03 2012 18:13:37  rpmdb

3 files, 0 directories

10,490,132 bytes total (13,192,656 bytes free) QTECH#mkdir newdir

Created dir flash:/newdir QTECH#dir

Directory of flash:/
1-rw-      336   Jan 03 2012 18:53:42  fstab
2 rw-  4095  Jan 03 2012 12:32:09  rc.d

3-rw- 10485760  Jan 03 2012 18:13:37 rpmdb

4 drw- 4096   Jan 03 2012 18:13:37  newdir
3 files, 1 directories
10, 228 494, bytes total (13,188,560 bytes
```

Related Commands

Command	Description
rmdir	Deletes the directory.
pwd	Displays the present directory.

Platform Description

N/A

4.10. more

Parameter Description

Use this command to display the content of a file.

more [**/ascii** | **/binary**] [*filesystem*:] *file-url*

Parameter	Description
/ascii	Displays the file content in the ASCII format.
/binary	Displays the file content in the
filesystem:	The URL of file system, followed by a colon (:). The file system includes **flash:**, **usb:** and **tmp:**.
file-url	The file name containing the path. A file name starts with "/" is an absolute path. Otherwise, it is a relative path.

Defaults

The file is displayed in its own format by default.

Command Mode

Privileged EXEC mode

Usage Guide

N/A

Configuration Examples

The following example displays the content of the netconfig file under root directory of FLASH disk.

```
QTECH#more flash:/netconfig #
# The network configuration file.
This file is currently only used in # conjunction with the TI-RPC code in the libtirpc
library.
#
# Entries consist of:
#
#      <network_id> <semantics> <flags> <protofamily> <protoname> \ #          <device>
<nametoaddr_libs>
#
# The <device> and <nametoaddr_libs> fields are always empty in this # implementation.
```

```
#
udp    tpi_clts       v  inet  udp   -    -

 tcp    tpi_cots_ord  v  inet  tcp   -    -
udp6   tpi_clts       v  inet  udp   -    -

 tcp6   tpi_cots_ord  v  inet  tcp   -    -

rawip  tpi_raw       - inet  -     -    -
local  tpi_cots_ord -   loopback   -    -
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

4.11. pwd

Parameter Description

Use this command to display the working path.

wd

Parameter	Description
N/A.	N/A.

Defaults

N/A

Usage Guide

Configuration Examples

The following example switches from FLASH: to SATA:.

```
QTECH#pwd flash:/  QTECH#cd sata:/ QTECH#pwd
sata:/
```

Related Commands

Command	Description
cd	Changes the file system in the present directory.

Platform Description

N/A.

4.12. rename

Use this command to move or rename the specified file.

rename *src-url dst-url*

Parameter Description

Parameter	Description
src-url	The source file URL to move.
dst-url	The URL of the destination file or directory.

Defaults

N/A.

Command Mode

Privileged EXEC mode.

Usage Guide

N/A

Configuration Examples

The following example renames the fstab file in the root directory on the FLASH disk as new-fstab.

```
QTECH#dir  Directory of flash:/
1      -rw-   336    Jan 03 2012 18:53:42  fstab
2      -rw-   4096   Jan 03 2012 12:32:09  rc.d
3      -rw-   10485760    Jan 03 2012 18:13:37  rpmdb
3 files, 0 directories
10,490,192 bytes total (13,192,656 bytes free)
QTECH#rename flash:/fstab flash:/new-fstab
```

```
2  -rw-    4096    Jan 03 2012 12:32:09  rc.d
3  -rw-  10485760  Jan 03 2012 18:13:37  rpmdb
3 files, 0 directories
10,490,192 bytes total (13,192,656 bytes free)
```

Related Commands

Command	Description

delete	Deletes the file.
copy	Copies the file.

Platform Description

N/A

4.13. rmdir

Parameter Description

Use this command to delete an empty directory.

rmdir [*filesystem*:] *directory*

Parameter	Description
filesystem:	The URL of file system, followed by a colon (:). The file system includes **flash:**, **sata:**, **usb:** and **tmp:**.
directory	The path name. A file name starts with "/" is an absolute path. Otherwise, it is a relative path.

Defaults

The default *filesystem*: is **flash:**.

Command Mode

Privileged EXEC mode.

Usage Guide

Configuration Examples

The following example deletes the null test directories.

```
QTECH#mkdir newdir
QTECH#dir
Directory of flash:/
1      -rw-   336    Jan 03 2012 18:53:42  fstab
2      -rw-   4096   Jan 03 2012 12:32:09  rc.d
3      -rw-   10485760    Jan 03 2012 18:13:37  rpmdb
4-rw      -10485760 Jan 03 2012 18:13:37  newdir
3 files, 1 directories
```

```
10,494,228 bytes total (13,188,560 bytes free)
QTECH#rmdir newdir removed dir flash:/newdir QTECH#dir
```

```
Directory of flash:/
1     -rw-  336   Jan 03 2012 18:53:42  fstab
2     -rw-  4096  Jan 03 2012 12:32:09  rc.d
3     -rw-  10485760    Jan 03 2012 18:13:37  rpmdb
3 files, 0 directories
10,490,132 bytes total (13,192,656 bytes free)
```

Related Commands

Command	Description
N/A.	N/A.

Platform Description

N/A.

4.14. show file systems

Use this command to display the file system information.

show file systems

Parameter Description

Parameter	Description
N/A.	N/A.

Defaults
N/A.

Command Mode

User EXEC mode/Privileged EXEC mode/Global configuration mode/Interface configuration mode

Usage Guide

Configuration Examples

The following example displays the file system information:

```
QTECH#show file systems
 Size(KB)       Free(KB)    Type   Flags Prefixes
     NA          NA      ram     rw  tmp:
     NA          NA    network    rw  tftp:
     NA          NA    network    rw  oob_tftp:
     NA          NA    xmodem     rw  xmodem:
    8192        2416     disk     rw  flash:
167772160     147772160    disk     rw  sata0
  1048576      548576     disk     rw  usb0:
```

Field	Description
Size(KB)	File system space, in the unit of KB.
Free(KB)	Available file system space, in the unit of KB.
Type	File system type
Flags	Permissions on the file system include:
	● ro: read-only ● wo: write-only ● rw: read and write
Prefixes	File system prefix

Related Commands

Command	Description
N/A.	N/A.

Platform Description

N/A.

4.15. show mount

Use this command to display the mounted information.

show mount

Parameter Description

Parameter	Description

N/A	N/A

Defaults

N/A

Command Mode

User EXEC mode/Privileged EXEC mode/Global configuration mode/Interface configuration mode

Usage Guide

N/A

Configuration Examples

The following example displays the mounted information.

```
QTECH#show mount

/dev/sda1 on / type ext4 (rw,errors=remount-ro,commit=0) proc on /proc type proc
(rw,noexec,nosuid,nodev)

sysfs on /sys type sysfs (rw,noexec,nosuid,nodev) fusectl on /sys/fs/fuse/connections
type fusectl (rw) none on /sys/kernel/debug type debugfs (rw)

none on /sys/kernel/security type securityfs (rw) udev on /dev type devtmpfs
(rw,mode=0755)

devpts on /dev/pts type devpts (rw,noexec,nosuid,gid=5,mode=0620) tmpfs on /run type
tmpfs    (rw,noexec,nosuid,size=10%,mode=0755)    none    on    /run/lock    type    tmpfs
(rw,noexec,nosuid,nodev,size=5242880) none on /run/shm type tmpfs (rw,nosuid,nodev)

/dev/sda3 on /hao-share type ext3 (rw,commit=0)

binfmt_misc on /proc/sys/fs/binfmt_misc type binfmt_misc (rw,noexec,nosuid,nodev)
```

eld	Description
proc	Source address of mount.
on	-
/proc	Destination address of mount.
type	-
proc	Mount type.
(rw,noexec,nosuid,nodev)	Mount property.

Related Commands

Command	Description

N/A	N/A

Platform Description

N/A

4.16. tftp-client source

Use this command to bind a source IP address or source interface with a TFTP client. Use the **no** or

default form of this command to restore the default setting.

tftp-client source { **ip** *ip-address* | **ipv6** *ipv6-address* | *interface* }

no tftp-client source { **ip** *ip-address* | **ipv6** *ipv6-address* | *interface*}

default tftp-client source { **ip** *ip-address* | **ipv6** *ipv6-address* | *interface* }

Parameter Description

Parameter	Description
ip-address	Specifies the IPv4 source address.
Ipv6-address	Specifies the IPv6 source address.
interface	Specifies the source interface

Defaults

No source interface or IP address is bound with the TFTP client by default.

Command Mode

Global configuration mode

Usage Guide

N/A

Configuration Examples

The following example binds source IP address 192.168.23.236 with the TFTP client.
```
QTECH(config)# tftp-client source ip 192.168.23.236
```
The following example binds source IPv6 address 2003:0:0:0::2 with the TFTP client.
```
QTECH(config)# tftp-client source ipv6 2003:0:0:0::2
```
The following example binds source interface gigabitEthernet 0/0 with the TFTP client.
```
QTECH(config)# tftp-client source gigabitEthernet 0/0
```
The following example removes the configuration.
```
QTECH(config)# no tftp-client source ip 192.168.23.236
```

QTECH
МИР ДОСТУПНЕЕ   www.qtech.ru

The following example restores the default setting.

```
QTECH(config)# default tftp-client source ip 192.168.23.236
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

4.17. tree

Parameter Description

Use this command to display the file tree of the current directory.

tree [*filesystem*:] [*directory*]

Parameter	Description
filesystem:	The URL of file system, followed by a colon (:). The file system includes **flash:**, **usb:** and **tmp:**.
directory	The path name. A file name starts with "/" is an absolute path. Otherwise, it is a relative path.

Defaults

The default *filesystem*: is **flash:**.

Command Mode

User EXEC mode/Privileged EXEC mode

Usage Guide

N/A

Configuration Examples

The following example displays the file tree of flash:/echo

```
QTECH#tree flash:/echo
+-- client_module
```

```
+-- client_userspace

+-- echo_cli.c

+-- echo_client.c

+-- echo_client.h

+-- echo_client.o

+-- echo_cli.o

+-- echo_flag.h

+-- echo.h

+-- echo.ko

+-- echo_server.h

+-- exec_set_echo.h

+-- exec_show_echo.h

+-- Makefile

+-- module

¦       +-- echo.ko
```

```
¦  +-    echo.mod.c echo.mod.o echo_module.c
¦   -     echo_module.o
¦  +-
¦   -
¦
¦  +-
    -

    +-
    -

¦  +-    echo.o
    -

¦  +-    echo_server.c
    -

¦  +-    echo_server.o
    -

¦  +-    echo_sysfs.c
    -

¦  +-    echo_sysfs.h
    -

¦  +-    echo_sysfs.o
    -

¦  +-    Makefile
    -

¦  +-    modules.order
    -

¦  +-    Module.symvers
    -

¦  +-    msg_fd.c
    -

¦  +-    msg_fd.o
    -
```

```
+-- readme
+-- server_module
+-- server_userspace
+-- sys_rgos.ko
+-- user_space
+-- echo_server.c
+-- echo_server.o
+-- Makefile
+-- msg_fd.c
+-- msg_fd.o 10,490,132 bytes total (13,192,656 bytes free)
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

4.18. verify

Parameter Description

Use this command to compute, display and verify Message Digest 5 (MD5).
verify [**/md5** *md5-value*] *filesystem***:** [*file-url*]

Parameter	Description
/md5	Computes and displays MD5.
md5-value	The file MD5, which is compared with the computed MD5.
filesystem:	The URL of file system, followed by a colon (:). The file system includes flash:, usb: and tmp:.
file-url	The file name containing the path. A file name starts with "/" is an absolute path. Otherwise, it is a relative path.

Defaults

QTECH
МИР ДОСТУПНЕЕ   www.qtech.ru

The default *filesystem:* is **flash:**.

Command Mode

Privileged EXEC mode.

Usage Guide

N/A

Configuration Examples

The following example computes MD5 of flash:/gcc.

```
QTECH#verify flash:/gcc
8b072de7db7affd8b2ef824e7e4d716c
```

The following example computes MD5 and makes a comparison.

```
QTECH#verify /md5 8b072de7db7affd8b2ef824e7e4d716c flash:/gcc

%SUCCESS verifying /mnt/flash/gcc = 8b072de7db7affd8b2ef824e7e4d716c QTECH#verify /md5
8b072de7db7affd8b2ef824e7e4d71 flash:/gcc

%Error verifying flash:/gcc

Computed   signature   =   8b072de7db7affd8b2ef824e7e4d716c   Submitted   signature   =
8b072de7db7affd8b2ef824e7e4d71
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

4.19. show disk

Use this command to display USB/Flash information.

show disk [**usb** | **flash**]

Parameter Description

Parameter	Description
sata	Displays hardware information.
usb	Displays USB information.

Defaults
N/A

QTECH
МИР ДОСТУПНЕЕ   www.qtech.ru

Command Mode

Privileged EXEC mode

Usage Guide

N/A

Configuration Examples

```
QTECH#show disk usb
Disk /dev/sdb: 8159 MB, 8159477760 bytes
252 heads, 62 sectors/track, 1020 cylinders
Units = cylinders of 15624 * 512 = 7999488 bytes
```

The following example displays USB information.

```
QTECH#show disk flash Nand flash size: 512MB
Nor flash size: 1MB
```

The following example displays FLASH information.

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

5.1. calendar set

Use this command to set the hardware calendar.

calendar set { *hour* [:*minute* [:*second*]] } [*month* [*day* [*year*]]]

Parameter Description

Parameter	Description
hour [:minute [:second]]	Sets hardware time in the format of hour: minute: second. Only the specified parameters (hour, minute, or second) can be reset. The unspecified parameters keep the current system values.
month	Sets month. The range is from 1 to 12.
day	Sets date. The range is from 1 to 31.
year	Sets year. The range is from 1970 to 2069.

Defaults   -

 Command Mode

 Privileged EXEC mode

Default Level   -

Usage Guide

The time parameter is mandatory. After setting time, set month, day, and year, which can be neglected according to your needs. The parameter that is neglected keeps the current system value. For example, if the current hardware time is "2012-02-29 09:33:44" and you want to change month and hour and keep values of other parameters, use the **calendar set** *12 5* command to change the current time into "2012-05-29 12:33:44".

The hardware time of the system is used as the UTC time, while the software time of the system refers to the local time of the device.

 ▪ This command is supported by only VSD0.

 Configuration Examples

```
QTECH# calendar set 6
06:41:39 UTC Fri, Jul 6, 2012
```

The following example changes the current hardware time of the system (for

example, 2012-02-01 18:23:06) into 6 o'clock and keeps the values of other

parameters.

```
QTECH# calendar set 6:42
```

The following example changes the current hardware time of the system (for

example, 2012-02-01 18:23:06) into 06:42 and keeps the values of other

parameters.

```
06:42:27 UTC Fri, Jul 6, 2012
```

The following example changes the current hardware time of the system (for example, 2012-02-01 18:23:06) into March 2 and keeps the values of other parameters.

```
QTECH# calendar set 18 3 2
18:43:05 UTC Fri, Mar 2, 2012
```

Because the *hour* parameter is mandatory, set it to the current time if you do not

need to change its value. As shown in the last example, enter **18** (hour), and then

enter **3** (month) and **2** (day).

Check Method   -

Platform Description

5.2. clock read-calendar

Use this command to enable the system to synchronize the software time with the hardware time.

clock read-calendar

Parameter Description

arameter	Description
-	-

Defaults   -

Command Mode

Privileged EXEC mode

Default Level   -

Usage Guide

This command is supported by only VSD0.

After you configure this command, the system will synchronize the software

time with the current hardware time according to the time zone and summer

time settings of the device.

Configuration Examples

The following example enables the system to synchronize the software time with the hardware time.

```
QTECH# clock read-calendar
Set the system clock from the hardware time.
```

Check Method   -

Platform Description

5.3. clock set

Use this command to set the system software clock.

clock set { *hour* [:*minute* [:*second*]] } [*month* [*day* [*year*]]]

Parameter Description

Parameter	Description
hour [:minute [:second]]	Sets software time in the format of hour: minute: second. Only the specified parameters (hour, minute, or second) can reset. The unspecified parameters keep the current system values.
month	Sets month. The range is from 1 to 12.
day	Sets date. The range is from 1 to 31.
year	Sets year. The range is from 1970 to 2069.

Defaults   -

Command Mode

Privileged EXEC mode

Default Level   -

Usage Guide   1.

The time parameter is mandatory. After setting time, set month, day, and year, which can be neglected according to your needs. The parameter that is neglected keeps the current system value.

For example, if the current hardware time is "2012-02-29 09:33:44" and you want to change month and hour and keep values of other parameters, use the **clock set** *12 5* command to change the

current time into "2012-05-29 12:33:44".

This command is supported by only VSD0.

Configuration Examples

The following example changes the current software time of the system (for

example, 2012-02-01 18:23:06) into 6 o'clock and keeps the values of other

parameters.

```
QTECH# clock set 6
06:48:13 CST Fri, Mar 2, 2012
```

The following example changes the current software time of the system (for

example, 2012-02-01 18:23:06) into 06:42 and keeps the values of other

parameters.

```
QTECH# clock set 6:42
06:42:31 CST Fri, Mar 2, 2012
```

The following example changes the current software time of the system (for

example, 2012-02-01 18:23:06) into March 2 and keeps the values of other

parameters.

```
QTECH# clock set 18:2
```

18:42:48 CST Fri, Mar 2, 2012

Because the *hour* parameter in this command is mandatory, set it to the current

time if you do not need to change its value. As shown in the last example, enter **18**
(hour), and then enter **3** (month) and **2** (day).

Check Method   -

Platform Description

5.4. clock summer-time

Use this command to set the summer time.

clock summer-time *zone* **start** *start-month* [*week*|**last**] *start-date hh:mm* **end** *end-month*
[*week*| **last**]

end-date hh:mm [**ahead** *hours-offset* [*minutes-offset*]

Use this command to disable the summer time.

no clock summer-time

Parameter Description

Parameter	Description
zone	Summer time name. It can only be a letter between A and Z or between a and z, which is not case sensitive. The summer time name contains 3 to 31 characters.
start	Indicates the start time of the summer time.
start-month	Start month. Value range: January, February, March, April, May, June, July, August, September, October, November, and December. The value is not case sensitive and you are allowed to enter an incomplete word, for example, Febr and FebRu.
week	Start week in the start month. The range is from 1 to 5.
last	The last week of the specified month.
start-date	Day in the start week of the start month. Value range: Sunday, Monday, Tuesday, Wednesday,

	Thursday, Friday, and Saturday. The value is not case sensitive and you are allowed to enter an incomplete word, for example, Web and WeDne.
hh:mm	Time, in the format of hour : minute.
end	Indicates the end time of the summer time.
end-month	End month. Value range: January, February, March, April, May, June, July, August, September, October, November, and December. The value is not case sensitive and you may enter an incomplete word, for example, Febr and FebRu.
ahead	Indicates how much time for the summer time ahead of the standard time during the effective period of the summer time. By default, the summer time is one hour ahead of the standard time.
hours-offset	Hours ahead of the standard time. The range is from 0 to 12. You are not allowed to set it to 00:00.
minutes-offset	Minutes ahead of the standard time. The range is from 0 to 59. If *hours-* *offset* has been set to 0, you are not allowed to set *minutes-offset* to 0.

Defaults   -

Command Mode

 Global configuration mode

Default Level   -

Usage Guide
This command is supported by only VSD0.

 Configuration Examples

 Assume that the time zone name of your living place is ABC and the standard time is

8:15 ahead of UTC, namely, GMT+08:15. The summer time period starts from the first Saturday in February to the third Monday in May and the summer time is 01:20 ahead of the standard time. In this case, the summer time is 09:35 ahead of the UTC time, but non-summer time is still 08:15 ahead of the UTC time.

```
QTECH(config)#  clock  timezone  ABC  8  15  Set  time  zone  name:  ABC  (GMT+08:15)
QTECH(config)#show clock
16:39:16 ABC Wed, Feb 29, 2012 QTECH(config)#show calendar 08:24:35 GMT Wed, Feb 29, 2012

QTECH(config)# clock summer-time TZA start Feb 1 sat 2:00 end May 3 Monday 18:30 ahead 1
20
*May 10 03:45:58: %SYS-5-CLOCKUPDATE: Set summer-time: TZA from February the 1st Saturday
at 2:00 TO May the 3rd Monday at 18:30, ahead 1 hour 20 minute
Set summer-time: TZA from February the 1st Saturday at 2:00 TO May the 3rd Monday at
18:30, ahead 1 hour 20 minute

QTECH# show clock
18:00:08 TZA Wed, Feb 29, 2012

# If the time is set to non-summer time, the time zone name is restored to ABC. QTECH#clo set 18 1 1
*Jan 1 18:00:09: %SYS-5-CLOCKUPDATE: Set system clock: 18:00:09 ABC Sun, Jan 1, 2012
Set system clock: 18:00:09 ABC Sun, Jan 1, 2012 QTECH#show clock
18:00:12 ABC Sun, Jan 1, 2012
```

If the system uses the default summer time that is one hour ahead of the standard time, ahead and the parameters behind ahead can be neglected. For example, set the summer time to start from 2:00 a.m. of the first Sunday in April to 2:00 a.m. of the last Sunday in October and set the summer time to one hour ahead of the standard time.

```
QTECH(config)#clo summer-time PDT start April 1 sunday 2:00 end October last Sunday 2:00
*May 10 03:15:05: %SYS-5-CLOCKUPDATE: Set summer-time: PDT from April the 1st Sunday at
2:00 TO October the last Sunday at 2:00, ahead 1 hour
Set summer-time: PDT from April the 1st Sunday at 2:00 TO October the last Sunday at
2:00,
ahead 1 hour
```

The following example disables summer time.
```
QTECH(config)#no clock summer-time
*Jan 1 18:01:09: %SYS-5-CLOCKUPDATE: Set no summer time. Set no summer time.
```

Check Method -

Platform Description

QTECH
МИР ДОСТУПНЕЕ   www.qtech.ru

5.5. clock timezone

Use this command to set the time zone.
clock timezone [*name hours-offset* [*minutes-offset*]]

Use this command to remove the time zone settings.
no clock timezone

Parameter Description

Parameter	Description
name	Time zone name. It can only be a letter between A and Z or between a and z, which is not case sensitive. The name contains 3 to 31 characters.
hours-offset	Hours of time difference. It indicates whether the time is faster or smaller than the hardware UTC time. The range is from -12 to 12. The negative digit indicates that the time is slower than the hardware time, while the positive digit indicates that the time is faster than the hardware time. If the time is slower than the UTC time, add "-" before *hours-offset*.
minutes-offset	Minutes of time difference. The range is from 0 to 59.

Defaults

Command Mode

Global configuration mode

Default Level   -

Usage Guide
This command is supported by only VSD0.

Configuration Examples

The following example sets the time zone name to CST. The software time is 8 hours faster than the hardware time.

The following example sets the time zone name TZA. The software time is 06:13 slower than the hardware time.

```
QTECH(config)# clock timezone TZA -6 13
Set time zone name: TZA (GMT-06:13
```

```
QTECH(config)# clock timezone CST 8 Set time zone name: CST (GMT+08:00)

QTECH# show clock
18:00:17 CST Wed, Dec 5, 2012
```

The following example removes the time zone settings.

QTECH(config)# no clock timezone

```
Set no clock timezone.
```

Check Method -

Platform Description

5.6. clock update-calendar

Use this command to enable the system to synchronize the hardware time with the software time.

clock update-calendar

Parameter Description

Parameter	Description
-	-

Defaults -

Command Mode

Privileged EXEC mode

Default Level   -

Usage Guide

This command is supported by only VSD0.

After you configure this command, the system will synchronize the hardware

time with the current software time according to the time zone and summer

time settings of the device.

Configuration Examples

The following example enables the system to synchronize the hardware time with the
software time.

```
QTECH# clock update-calendar
Set the hardware time from the system clock.
```

The following example sets the time zone of the hardware time to GMT+5:10,

which indicates that the hardware time is 5:10 slower than the software time. The

summer time is not set.

```
QTECH# show clock
09:30:02 TSZ Wed, Feb 29, 2012

QTECH# clock update-calendar
Set the hardware time from the system clock.

QTECH#show    calendar 03:05:08 UTC Wed, Feb 29, 2012
```

```
QTECH# show clock
09:30:21 TSZ Wed, Feb 29, 2012

QTECH# clock update-calendar
Set the hardware time from the system clock.

QTECH#show    calendar 04:20:25 UTC Wed, Feb 29, 2012
```

The following example sets the hardware time. If it is set to GMT+5:10 and the

summer time is set to be 1:15 faster from the first Monday in February 1 to the

second Sunday in June 1, it indicates that the hardware time is 6:25 slower than the

software time during the effective period of the summer time.

Check Method　-

Platform Description

5.7. cpu high-watermark set

Use this command to set the watermark range of the CPU usage of the control

core and enable CPU usage monitoring.

cpu high-watermark set [[**up** *up-value*] [**down** *down-value*]]

Use this command to disable CPU usage monitoring.

no cpu high-watermark set

Use this command to restore the default settings.

default cpu high-watermark set

Parameter Description

Parameter	Description
up *up-value*	Sets the high watermark of the CPU usage. The range is from 1 to 99.
down *down-value*	Sets the low watermark of the CPU usage. The range is from 1 to 99.

Defaults
By default, the range of the CPU usage watermark is from 75% and 85%.

Command Mode

Global configuration mode

Default Level　-

Usage Guide
This command is supported by only VSD0.

You can use this command to set the high watermark of the CPU usage and enable

CPU usage monitoring. When detecting that the CPU usage exceeds the fluctuation

range of the highest watermark, the system prints prompts.

Configuration Examples

The following example sets the CPU usage watermark to the default value and

enables CPU usage monitoring (if it is disabled).

```
 QTECH(config)# default cpu high-watermark set Reset default cpu watermark monitor
Set system cpu high-watermark up 85%, down 75%
```

The following example disables CPU usage monitoring.

```
QTECH(config)# no cpu high-watermark set
Close cpu watermark monitor
```

The following example enables CPU usage monitoring. Keep the defined watermark value.

```
QTECH(config)# cpu high-watermark set Open cpu watermark monitor
Set system cpu high-watermark up 85%, down 75%
```

The following example enables CPU usage monitoring and sets the watermark range to 70%-90%.

```
QTECH(config)# cpu high-watermark set up 90 down 70 Open cpu watermark monitor
Set system cpu high-watermark up 90%, down 70%
```

Check Method   -

 Prompt Message

 If the high watermark of the CPU usage is allowed to fluctuate from 85% to 91%,

the system will print the following warning message when the CPU usage exceeds

the upper limit of the high watermark:


```
*Jan 19 16:23:01: %RG_SYSMON-4-CPU_WATERMARK_HIGH: warning! system cpu usage above high
watermark(91%),current cpu usage 100%
```

When the CPU usage is less than the lower limit of the high watermark, the system

will print the following message about warning release:

```
*Jan 20 07:02:52: %RG_SYSMON-5- CPU_WATERMARK:withdraw warning! system cpu usage below
high
watermark(85%), current cpu usage 36%
```

Platform Description

5.8. memory history clear

Use this command to clear the history of the memory usage.

memory history clear [**one-forth | half | all**]

Parameter Description

Parameter	Description
one-forth	Clears one fourth entries.
Half	Clears a half of entries.
All	Clears all the entries.

Defaults   -

Command Mode

 Global configuration mode

Default Level   -

Usage Guide   -

Configuration Examples

 The following example clears a half of the history of the memory usage.

```
QTECH# show memory history

Time Thu Jan 1 00:24:45 1970 Used(k) 148516
Maxinum memory users for this period Process Name  Holding
tcpip.elf 270028 cli-memory 60600 rg_syslogd  36640

Time Thu Jan 1 00:24:41 1970 Used(k) 148492
Maxinum memory users for this period Process Name  Holding
tcpip.elf 270028 cli-memory  52408
rg_syslogd      36640
Time Thu Jan 1 00:24:41 1970 Used(k) 148444
Maxinum memory users for this period Process Name  Holding
tcpip.elf 270028 cli-memory 44088 rg_syslogd  36640

QTECH(config)#memory history clear half
2 out of 5 records in the history table to be cleared... Clear done !
```

Check Method   -

Prompt Message

Platform Description

5.9. memory low-watermark set

Use this command to set the low watermark threshold of the memory and

enable the memory low watermark detection.

memory low-watermark set *mem-rate*

Use this command to disable the detection of memory low watermark.

no memory low-watermark set

Parameter Description

Parameter	Description
mem-rate	Memory watermark threshold. The range is from 1% to 100%.

Defaults

By default, the memory watermark threshold is 90%.

Command Mode

Global configuration mode

Default Level   -

Usage Guide

You can use this command to enable the detection of the memory low watermark

and set the memory watermark threshold. When the system memory is less than

this threshold, the system will print prompts.

Configuration Examples

The following example sets the low watermark threshold of the memory to 80% and
enables detection.

QTECH(config)#memory low-watermark set 80

Check Method   -

Prompt Message

When the system memory is less than the defined watermark value (such as

500000 KB), the system prints the following message:

QTECH(config)#<187> Jan 1 00:18:59 syslog: Free Memory has dropped below 500000k

Platform Description

5.10. reload

Parameter Description

Use this command to reload the device.

reload [**at** { *hour* [:*minute* [:*second*]] } [*month* [*day* [*year*]]]

Parameter	Description
hour [:*minute* [:*second*]]	Sets the restart time in the format of hour : minute : second. Other neglected parameters keep the current system values.
month	Sets the month, in the range from 1 to 12.
day	Sets the day, in the range from 1 to 31.
year	Sets the year, in the range from 1970 to 2069.

Defaults   -

Command Mode

Privileged EXEC mode

Default Level   -

Usage Guide   -

Configuration Examples

The following example reloads the device.
```
QTECH#   reload Reload system?(Y/N) Y
Sending all processes the TERM signal...
                    [  OK  ] Sending all
processes the KILL signal... [ OK ]
Restarting system...
```

Check Method   -

Prompt Message

Platform Description

5.11. show calendar

Use this command to display the hardware calendar.

show calendar

Parameter Description

Parameter	Description
-	-

Command Mode

Privileged EXEC mode/ global configuration mode

Default Level   -

Usage Guide   -

Configuration Examples

The following example displays the hardware calendar.

```
QTECH# show calendar
21:57:48 GMT Sun, Feb 28, 2012
```

Prompt Message

Platform Description

5.12. show clock

Use this command to display the system software clock.

show clock

Parameter Description

Parameter	Description

-	-

Command Mode

Privileged EXEC mode / global configuration mode

Default Level   -

Usage Guide   -

Configuration Examples

The following example displays the software clock when the time zone is disabled.
```
QTECH# show clock
18:22:20 UTC Tue, Dec 11, 2012
```

```
QTECH# show clock
03:07:49 TSZ Wed, Feb 29, 2012
```

The following example displays the software clock when the time zone is enabled.

Prompt Message

Platform Description

5.13. show memory

Use this command to display the system memory.

show memory [**sorted total | history | low-watermark |** *process-id* **|** *process-name*]

Parameter Description

Parameter	Description
sorted total	Ranked according to the memory usage.
history	Displays the history of memory usage.
low-watermark	Displays the memory low watermark threshold of the system.
process-id	Displays the memory usage of the task specified by *process-id*.

process-name	Displays the memory usage of the task specified by process-name.

Command Mode

Privileged EXEC mode/ global configuration mode

Default Level   -

Usage Guide

Every time when the **show memory history** command is used, the number of displayed entries increases by one. Up to 10 entries can be displayed. You can use the **memory history clear** command to clear history entries.

Configuration Examples

The following example displays the memory usage of each task and the ranking (based on the total memory usage).

```
QTECH# show memory sorted
System Memory: 508324K total, 481560K used, 26764K free, 348200K available, 50.5% used
rate
Swap: 128000K total, 128000K free
Used detail: 149112K active, 247776K inactive, 30460K mapped, 50460K slab, 3752K others

PID     Text(K) Rss(K)  Data(K)         Stack(K) Total(K)        Process 807 1568 4584
264728 84 270028  tcpip.elf
854 40 1436 246076 84 248840  cli-filesystem
1237 52 1492 123260 84 126036  cli-memory
803 56 1104 74064 84 76920  ping.elf
727     84      1276    33812           84      36640           rg_syslogd
733     84      796     33536           84      36364           rg_syslogd
776 224 1416 16896 84 19800  lsmdemo
858 40 1324 16844 84 19612  rg-tty-admin
769 40 3600 11052 84 13812  skbdemo
--More--
```

Description of some keywords in the command:

Keyword	Description
total	Total system memory
used	Used memory

free	Remaining memory
used rate	Memory usage (percentage)
Active	Active page
inactive	Inactive page
mapped	Mapped memory
slab	Memory consumed by Slab
others	Memory capacity of the used memory except the memory used by active and inactive pages, mapped memory, and slab memory.

Description of the displayed information on each task:

Field	Description
PID	Process ID
Text	Code segment size
Rss	Resident memory size
Data	Data segment size
Stack	Stack size
Total	Total used memory
Process	Task name

Prompt Message

Platform Description

5.14. show memory vsd

Use this command to display memory information.
show memory vsd *vsd_id*

Parameter Description

Parameter	Description
vsd_id	VSD ID is a digit. You can use the **show vsd** command to display the ID of each VSD. The ID range is from 0 to 16.

Command Mode

Privileged EXEC mode/ global configuration mode

Default Level -

Usage Guide

This command is supported only in VSD0 mode

Configuration Examples

The following example displays the memory usage of each task in VSD 1 mode.

```
QTECH#show memory vsd 1
PID Text Rss Data Stack Total Process
1408 244 1192 25400 84 32164 tty_secu_enable
1385 104 16288 648 84 18648 gvpd
1384 304 3872 17084 84 24728 wbamain
1382 376 17708 33656 84 53308 snooping.elf
1381 84 2156 16736 84 22956 password_policy
1380 72 1096 404 84 3848 dns_client.elf
1379    168    2580    472    84    5352   rg-rmond
1378    652    3504   9768    84    15964  rg-snmpd
1376 208 1452 10672 84 14872 rg-fsui
1375    116   2020    33464   84    37288  rg-telnetc
1373    24    844     220     84    2824   rg-telnetd
1372 724 2364 17016 84 24380 rg-sshd
1371 244 2996 35780 84 42544 rg-tty-admin
1365 132 2168 9004 84 13796 vrrp_plus.elf
1364    312    16944   764    84    20368  vrrp.elf
1363    124    16988   500    84    19744  lacp.elf
1358 24 1380 320 84 3536 ftpc_cli.elf
1357 124 1944 8552 84 14976 ftp_server.elf
1352 340 3032 74704 84 80768 dhcp6.elf
1351    312   1960    988     84    6116   dhcp.elf
1350    388    17808   920    84    21600  mstp.elf
1349 240 3876 976 84 9536 rpi.elf
1348 1316 4656 1004 84 10764 isis.elf
1347 212 4220 872 84 9368 ripng.elf
```

```
1345     460    4284    876    84      9656   rip.elf
1344    1800    5568   1572    84     12156   bgp.elf
1340    1084    4700   1024    84     10928   ldp.elf
1339     288   17684    556    84     21472   msf.elf
1338 208 3604 42712 84 47708 rg-syslogd
--More--
```

Prompt Message

Platform Description

5.15. show pci-bus

Use this command to display the information on the device mounted to the PCI bus.

show pci-bus

Parameter Description

Parameter	Description
-	-

Command Mode

Privileged EXEC mode/ global configuration mode

Default Level -

Usage Guide -

Configuration Examples

The following example displays the information on the device mounted to the PCI bus.

```
QTECH# show pci-bus NO:0
Vendor   ID              :  0x1131 Device ID : 0x1561 Domain:bus:dev.func : 0000:00:05.0
Status / Command     : 0x2100000 Class / Revision   : 0xc031030 Latency : 0x0
first 64 bytes of configuration address space:
00: 31 11 61 15 00 00 10 02 30 10 03 0c 20 00 80 00
10: 00 00 00 f0 00 00 00 00 00 00 00 00 00 00 00 00
20: 00 00 00 00 00 00 00 00 00 00 00 00 31 11 61 15
30: 00 00 00 00 dc 00 00 00 00 00 00 00 29 01 01 2a
  NO:1
Vendor   ID              :  0x1131 Device ID : 0x1562 Domain:bus:dev.func : 0000:00:05.1
Status / Command     : 0x2100156 Class / Revision : 0xc032030
```

```
Latency : 0x30
First 64 bytes of configuration address space:
00: 31 11 62 15 56 01 10 02 30 20 03 0c 20 30 80 00
10: 00 10 00 f0 00 00 00 00 00 00 00 00 00 00 00 00
20: 00 00 00 00 00 00 00 00 00 00 00 00 31 11 62 15
30: 00 00 00 00 dc 00 00 00 00 00 00 00 29 01 02 10
```

Prompt Message

Platform Description

5.16. show processes cpu

Use this command to display system task information.

show processes cpu [**history** [**table**] | [**5sec | 1min | 5min | 15min**] [**nonzero**]]

Parameter Description

Parameter	Description
5sec | 1min | 5min | 15min	Displays lists of tasks in descending order of CPU usage within the last five seconds, one minute, five minutes, and 15 minutes.
nonzero	Does not display the task with 0 CPU usage.
history	Displays the CPU usage of the control core within the last 60 seconds, 60 minutes, and 72 hours in histogram.
table	Displays the CPU usage of the control core within the last 60 seconds, 60 minutes, and 72 hours in table.

Command Mode

Privileged EXEC mode/ global configuration mode

Default Level-

Usage GuideThis command is only supported by VSD0.

Configuration Examples

The following example displays the tasks listed in ascending order of task IDs.

```
QTECH# show processes cpu System Uptime: 19:08.6
CPU utilization for five seconds:1.2%; one minute:0.8%; five minutes:0.8% set system cpu
watermark (open): high 80%(85%~75%)

Tasks Statistics: 375 total, 10 running, 365 sleeping, 0 stopped, 0 zombie
  Pid Vsd S PRI P 5Sec 1Min 5Min 15Min Process
    1   0 S   20  0   0.0(0.0)   0.0(0.0)   0.0(0.0)0.0(0.0) init
    2   0 S   20  1   0.0(0.0)   0.0(0.0)   0.0(0.0)0.0(0.0) kthreadd
    3   0 S -100  0   0.0(0.0)   0.0(0.0)   0.0(0.0)0.0(0.0) migration/0
    4   0 S   20  0   0.0(0.0)   0.0(0.0)   0.0(0.0)0.0(0.0) ksoftirqd/0
    5   0 S -100  1   0.0(0.0)   0.0(0.0)   0.0(0.0)0.0(0.0) migration/1


 --More--
```

The following example displays the tasks listed in ascending order of task IDs without displaying the tasks with 0 CPU usage within 15 minutes.

QTECH# show processes cpu nonzero

Description of the information displayed in this command:

Field	Description
System Uptime	Total running time of the device, precious to seconds.
CPU Utilization	Total CPU usage of the control core within the last five seconds, one minute, and five minutes.
Virtual CPU usage	Total CPU usage of the virtual control core within the last five seconds, one minute, and five minutes.
Tasks Statistics	Task statistics information, including the total number of statistics tasks

QTECH
МИР ДОСТУПНЕЕ

www.qtech.ru

	and the task status.
set system cpu watermark	CPU watermark value and status of the control core.

The task running statuses are listed below:

Task Running Status	Description
running	Running task
sleeping	Suspended task
stopped	Stopped task
zombie	Terminated task, but not reclaimed by the system

Description of each task:

Field	Description
Pid	Task ID
Vsd	VSD ID
S	Task status. Five statuses in total: R (running), T (stopped), S (sleeping), D (waiting), and Z (zombie).
PRI	Task running priority
P	The core of the CPU on which the task runs
5sec/1min/5min/15min	CPU usage of the task within the last five seconds, one minute, five minutes, and 15 minutes. The value in the round brackets is the CPU usage that is not divided by the total number of cores where the task runs.

Process	Task name.
	Only the first 15 characters are displayed. The remaining characters are truncated.

The following example displays the CPU usage in ascending order of task IDs and only the processes with non-zero CPU usage within 15 minutes are displayed.

QTECH #show processes cpu nonzero

The following example displays the CPU usage in descending order within five seconds and the tasks with zero CPU usage within one second are not displayed.

QTECH #show processes cpu 5sec nonzero

The following example displays the CPU usage of the control core in histograms within the last 60 seconds, 60 minutes, and 72 hours.

The first histogram displays the CPU usage of the control core within 300 seconds. Every segment in the

x-coordinate is five seconds, and every segment in the y-coordinate is 5%. The symbol "*" indicates the CPU usage at the last specified second. In other words, the first segment on the x-coordinate nearest to 0 is the CPU usage in the last five seconds, measured in %.

The second histogram displays the CPU usage of the control core within the last 60 minutes, measured in %. Every segment on the x-coordinate is 1 minute.

The third histogram displays the CPU usage of the control core within the last 72 hours, measured in %. Every segment on the x-coordinate is 1 hour.

Example:

```
QTECH#show processes cpu history

          system cpu percent usage(%) [last 300 second]

    _
  100|
   95|
   90|
   85|
   80|
   75|
   70|
   65|
   60|
   55|
   50|
```

```
45|
40|*********
35||||||||||||
30|||||||||||*
25||||||||||||
20||||||||||||
15||||||||||||
10||||||||||||
 5||||||||||||***************
 0|||||||||||||||||||||||||||
   #=========#=========#=====*==>
   0 50 100  second
       system cpu percent usage(%) per 5second (last 125 second)



           system cpu percent usage(%) [last 60 minute]
    _
100|
 95|
 90|
 85|
 80|
 75|
 70|
 65|
 60|
 55|
 50|
 45|
 40|
 35|
 30|*
 25||
 20||
 15||
 10||
  5||*
  0|||
   #==*==>
   0  minute
       system cpu percent usage(%) per 1minute (last 2 minute)
```

QTECH
МИР ДОСТУПНЕЕ   www.qtech.ru

The following example displays the CPU usage of the core 0 in tables within the last 60 seconds, 60 minutes, and 72 hours.

The first table lists the CPU usage within 300 seconds. The first cell indicates the CPU usage within the last five seconds.

The second table lists the CPU usage within the last 60 minutes, measured in %. The two adjacent cells show the CPU usage measured at an interval of one minute.

The third table lists the CPU usage within the last 72 hours, measured in %. The two adjacent cells show the CPU usage measured at an interval of one hour.

Example:

```
QTECH #show processes cpu history table
            system cpu percent usage(%) [last 300 second]
|         |    1|    2|    3|    4|    5|    6|    7|    8|    9|   10| #    #
#      #
|       0|   2.0|   2.4|   2.3|   2.3|   2.8|   3.0|   2.7|   3.2|   2.6|   2.4| #    #
|       1|   2.7|   2.5|   2.7|   2.2|   2.4|   2.6|   2.2|   2.7|   2.3|   2.5| #    #
|       2|   2.9|   2.0|   2.4|   2.5|   2.7|   2.4|   2.4|   2.6|   2.6|   2.5| #    #
|       3|   2.7|   2.8|   2.8|   3.2|   2.5|   3.2|   3.1|   4.0|   2.7|   2.7| #    #
|       4|   4.0|   2.3|   2.1|   2.2|   2.7|   2.4|   2.5|   2.6|   2.4|   2.6| #    #
|       5|   2.4|   3.2|   2.5|   2.3|   2.3|   3.6|   2.8|   2.5|   2.2|   2.4|


            system cpu percent usage(%) [last 60 minute]


| | 1| 2| 3| 4| 5| 6| 7| 8| 9| 10|

#
|       0|   2.6|   2.5|   3.0|   2.4|   2.6| #
```

Prompt Message

Platform
-
Description

5.17. show processes cpu detailed

Use this command to display the details of the specified task.

show processes cpu detailed { *process-id* | process-*name* }

Parameter Description

Parameter	Description
process-id	Displays the information on the task of the specified task ID.
process-name	Displays the information on the task of the specified task name.

Command Mode

Privileged EXEC mode/ global configuration mode

Default Level-

Usage Guide

This command is only supported by VSD0.

Configuration Examples

The following example displays the information on the task of the specified task name.

```
QTECH# show processes cpu detailed demo Process Id : 1820
Process Name : demo Vsdid      : 0 Process Ppid : 1

State       : R(running) On  CPU       :  0 Priority : 20
Age Time   : 24:06.5 Run Time    : 00:01.0 Cpu Usage  :
    Last  5 sec    0.3% (0.6%)
    Last  1 min    0.3% (0.6%)
    Last  5 min    0.3% (0.6%)
    Last 15 min    0.3% (0.6%)
Tty : ?
```

Code Usage: 209.6 KB. If the specified task name is not unique, the system displays the following message:

```
QTECH# show processes cpu detailed demo duplicate process, choose one by id not name.
name: demo, id: 1089, state: S(sleeping)  name: demo, id: 1091, state: R(running)
process name: monitor_procps, do NOT exist, or NOT only one.
```

Description of the displayed information:

Field	Description
Process Id	Task ID
Vsdid	VSD ID of the task
Process Name	Task name
Process Ppid	Parent process task ID
State	Task running status
On CPU	CPU where the task is running
Priority	Task priority
Age Time	Duration for the task from self-startup to now
Run Time	Duration for the task from self-startup to being executed
Cpu Usage	usage of the task within the last five seconds, one minute, five minutes, and 15 minutes. The value in the round brackets is the CPU usage that is not divided by the total number of cores where the task runs. For example, the demo task is running on No.0 core, which is the control core and the system has two control cores. In this case, the CPU usage is 0.3% (0.6%).
Tty	Tty ID, in the format of "Primary device ID, secondary device ID". If it is 0, the value is **?**.
Code Usage	Size occupied by the task code segment

The following example displays the information on the task of the specified task ID.

```
QTECH# show process cpu detailed 1715 Process Id : 130
Process Name : crypto Vsdid        : 0 Process Ppid : 2

State        : S(sleeping) On CPU : 0
Priority     : 0
Age Time    : 03:41:09.9 Run  Time     :  00:00.0 Cpu Usage  :
```

```
    Last  5 sec    0.0%(  0.0%)

    Last  1 min    0.0%(  0.0%)

    Last  5 min    0.0%(  0.0%)

    Last 15 min  0.0%(  0.0%) Tty : ?

Code Usage   0.0KB.
```

Prompt Message

Platform

-

Description

5.18. show usb-bus

Use this command to display the information on the device mounted to the USB bus.

show usb-bus

Parameter Description

Parameter	Description
-	-

Command Mode

Privileged EXEC mode/ global configuration mode

Default Level   -

Usage Guide   -

Configuration Examples

1: The following example displays the information on the device mounted to the USB bus.

```
QTECH# show usb-bus
Device: Linux Foundation 2.0 root hub
  Bus 001 Device 001: ID 1d6b:0002
```

Prompt Message

Platform

-

Description

5.19. show version

Parameter Description

Command Mode

Use this command to display the system version information.

show version

Parameter	Description
-	-

Privileged EXEC mode/ global configuration mode

Default Level -

Usage Guide   -

```
QTECH# show version

System description : QTECH Indoor AP320-I (802.11a/n and 802.11b/g/n) By QTECH Networks
System start time : 2012-12-06 00:00:00

System uptime      : 0:03:20:07 System hardware version : 1.0.0

System software version : AP_RGOS11.0(1B1)

System serial number : 1234942570018 System boot version : 1.0.0
```

Usage Guide
The following example displays the system version information.

Prompt Message

Platform Description

5.20. show cpu

Parameter Description

Command Mode

Use this command to display the information on the system task running on the

control core instead of the non-virtual core.

show cpu

Parameter	Description
-	-

Privileged EXEC mode/ global configuration mode

Default Level   -

Usage Guide

This command is supported only in VSD0 mode. Multiple VSDs are not supported.

If the system is equipped with a virtual core, you can use the **show processes cpu**

command to check the CPU usage of the virtual core.

Configuration Examples

The following example displays the information on the system task running on the

control core instead of the non-virtual core.

```
QTECH#show cpu
===========================================
CPU Using Rate Information
CPU utilization in five seconds: 4.80% CPU utilization in one minute:  4.10% CPU
utilization in five minutes:  4.00%

 NO 5Sec 1Min 5Min Process
    1   0.00%   0.00%      0.00% init
    2   0.00%   0.00%      0.00% kthreadd
    3   0.00%   0.00%      0.00% ksoftirqd/0
    4   0.00%   0.00%      0.00% events/0
--More--
```

Prompt Message

Platform Description

5.21. show reboot-reason

Parameter Description

Command Mode

Use this command to display the reboot reason.

show reboot-reason [*all*]

Parameter	Description
all	Displays the reboot reason of all devices/service modules

Privileged EXEC mode/ global configuration mode/ User EXEC mode

Default Level -

Usage Guide -

Configuration Examples

The following example displays the reboot reason of the device.

```
QTECH#show reboot-reason time: 1970-01-01 08:03:13
reason: reload cmd
info: /sbin/rg-sysmon/3844
  QTECH#
```

Prompt Message

Platform Description

6. TIME RANGE COMMANDS

6.1. absolute

Use this command to configure an absolute time range.

absolute { [**star**t *time date*] [**end** *time date*] }
Use the **no** form of this command to remove the absolute time range.

no absolute

Parameter Description

Parameter	Description
start *time date*	Indicates the start time of the range.
end *time date*	Indicates the end time of the range.

Defaults

The default absolute time range is the maximum range, which is from 00:00
January 1, 0 to 23:59 December 31, 9999.

Command Mode

Time range configuration mode

Default Level

14

Usage Guide

Use the **absolute** command to configure a time absolute time range between a
start time and an end time to allow a certain function to take effect within the
absolute time range.

The maximum absolute time range is from 00:00 January 1, 0 to 23:59 December 31, 9999.

Configuration Examples

The following example creates a time range and enters time range configuration mode.

```
QTECH(config)# time-range no-http
QTECH(config-time-range)#
```

The following example configures an absolute time range.
QTECH(config-time-range)# absolute start 1:1 1 JAN 2013 end 1:1 1 JAN 2014

Check Method

Use the **show time-range** [*time-range-name*] command to display the time range configuration.

Prompt Message

Platform Description

6.2. periodic

Use this command to configure periodic time.

periodic *day-of-the-week time* **to** [*day-of-the-week*] *time*

Use the **no** form of this command to remove the configured periodic time.

no periodic *day-of-the-week time* **to** [*day-of-the-week*] *time*

Parameter Description

Parameter	Description
day-of-the-week	Indicates the week day when the periodic time starts or ends.
time	Indicates the exact time when the periodic time starts or ends.

Defaults

No periodic time is configured by default.

Command Mode

Time range configuration mode

Default Level   14

Usage Guide

Use the **periodic** command to configure a periodic time interval to allow a certain function to take effect within the periodic time. If you want to modify the periodic time, it is recommended to disassociate the time range first and associate the time range after the periodic time is modified.

Configuration Examples

The following example creates a time range and enters time range configuration mode.

```
QTECH(config)# time-range no-http
QTECH(config-time-range)#
```

The following example configures a periodic time interval.

QTECH(config-time-range)# periodic Monday 1:1 to Tuesday2:2

Check Method

Use the **show time-range** [*time-range-name*] command to display the time range configuration.

Prompt Message

Platform Description

6.3. show time-range

Use this command to display the time range configuration.

Parameter Description

Command Mode

 show time-range [*time-range-name*]

Parameter	Description
time-range-name	Displays a specified time range.

Privileged EXEC mode

Default Level
14

Usage Guide
Use this command to check the time range configuration.

Configuration Examples

The following example displays the time range configuration.

```
QTECH# show time-range
time-range entry: test (inactive) absolute end 01:02 02 February 2012
```

Prompt Message

Platfom Description

6.4. time-range

Use this command to create a time range and enter time range configuration mode.

time-range *time-range-name*

Use the **no** form of this command to remove the configured time range.

no time-range *time-range-name*

Parameter Description

Parameter	Description
time-range-name	Time range name

Defaults

No time range is configured by default.

Command Mode

Global configuration mode

Default Level 2

Usage Guide

Some applications (such as ACL) may run based on time. For example, an ACL can be effective within certain time ranges of a week. To this end, first you must configure a time range. After the time range is created, you can configure relevant time control in time range mode.

Configuration Examples

The following example creates a time range.

```
QTECH(config)# time-range no-http
QTECH(config-time-range)#
```

Check Method

Use the **show time-range** [*time-range-name*] command to display the time range configuration.

Prompt Message

Platform Description

7. HTTP SERVICE COMMANDS

7.1. enable service web-server

Use this command to enable the HTTP service function.

Use the **no** form of this command to disable the HTTP service function.

enable service web-server [**http** | **https** | **all**]

{ no | **default } enable service web-server** [**http** | **https** | **all**]

Parameter Description

Parameter	Description
http	Enables the HTTP service.
https	Enables the HTTPS service.
all	Enables both the HTTP service and the HTTPS service.

Defaults

By default, the HTTP service function is disabled.

Command mode

Global configuration mode.

Usage Guide

If run a command ends with the keyword **all** or without keyword, it indicates enabling both the HTTP service and the HTTPS service; if run a command ends with keyword **http**, it indicates enabling the HTTP service; if run a command ends with keyword **https**, it indicates enabling the HTTPS service. Use the command **no enable service web-server** to disable the corresponding HTTP service.

Configuration Examples

The following example enables both the HTTP service and the HTTPS service:

```
QTECH#configure terminal
Enter configuration commands, one per line. End with CNTL/Z. QTECH(config)#enable service
```

QTECH МИР ДОСТУПНЕЕ | www.qtech.ru

```
web-server
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

7.2. http check version

Use this command to detect the available upgrade files on the HTTP server.

http check-version

Parameter Description

Parameter	Description
N/A	N/A

Defaults

N/A

Command mode

Privileged EXEC mode

Usage Guide

Use this command to detect the available upgrade files. The detected upgrade files version is later than that of local files.

Configuration Examples

Related Commands

Platform Description

QTECH
МИР ДОСТУПНЕЕ   www.qtech.ru

The following example demonstrates the version of the detected HTTP upgrade file.

```
QTECH# http check-version
Business modules need to be updated: character-db, route-
db app name:web
    app-name        version          filename
--------------------------
character-db    2014.02.09.14.02.09 app_sub_1.exe
character-db    2014.02.09.14.02.09 app_file_list.txt
character-db    2014.02.09.14.02.09 app_sub_3.exe
character-db    2014.02.09.14.02.09 app_sub_2.exe
route-db        2013.12.01.00      route-choose.db
```

Command	Description
N/A	N/A

N/A

7.3. http port

Use this command to configure the HTTP port number.

Use the **no** form of this command to restore the default HTTP port number.

http port *port-number*

no http port

Parameter Description

Parameter	Description
port-number	Configures the HTTP port number. The value includes 80, 1025 to 65,535.

Defaults

The default HTTP port number is 80.

Command mode

Global configuration mode.

QTECH
МИР ДОСТУПНЕЕ   www.qtech.ru

Usage Guide

Use this command to configure the HTTP port number.

Configuration Examples

The following example configures the HTTP port number as 8080:

```
QTECH#configure terminal
Enter configuration commands, one per line. End with CNTL/Z. QTECH(config)#http port 8080
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

7.4. http secure-port

Use this command to configure the HTTPS port number.

Use the **no** form of this command to restore the default HTTPS port number.

http secure-port *port-number*

no http secure-port

Parameter Description

Parameter	Description
port-number	Configures the HTTPS port number. The value includes 443, 1025 to 65,535.

Defaults

The default HTTP port number is 443.

Command mode

Global configuration mode.

Usage Guide

Use this command to configure the HTTPS port number.

Configuration Examples

The following example configures the HTTPS port number as 4443:

```
QTECH#configure terminal
Enter configuration commands, one per line. End with CNTL/Z. QTECH(config)#http secure-
port 4443
```

Related Commands

Command	Description
enable service web-server	Enables the HTTP service.
show web-server status	Displays the configuration and status of the Web service.

Platform Description

N/A

7.5. http update

Use this command to manually upgrade files.

http update { **all** | *string* }

Parameter Description

Parameter	Description
string	Name of the service to be upgraded. You can enter multiple services, and separate them with spaces.
all	Upgrade all services.

Defaults

N/A

Command mode

Privileged EXEC mode

Usage Guide

N/A

Configuration Examples

The following example upgrades the route-db and url-db files.

```
QTECH# http update route-db
Downloading updated files, please wait...
Press Ctrl+C to quit
route-db: download and notify successfully.
```

Related Commands

Command	Description
http check-vesion	Detects the available update package on the HTTP server.

Platform Description

N/A

7.6. http update mode

Use this command to configure the HTTP upgrade mode to manual mode.

Use the **no** form of this command to restore the default upgrade mode,

namely, auto mode.

http update mode

manual no http update

mode

Parameter Description

Parameter	Description
manual	Configures the manual upgrade mode.

Defaults
The default update mode is auto mode.

Command mode

Global configuration mode.

Usage Guide

Use this command to configure the HTTP upgrade mode to manual mode.

Configuration Examples

The following example enables manual HTTP upgrade mode:

```
QTECH#configure terminal
Enter configuration commands, one per line. End with CNTL/Z. QTECH(config)#http update
mode manual
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

7.7. http update server

Use this command to configure the IP address and the HTTP port number of the HTTP server.

http update server { *host-name* | *ip-address* } [**port** *port-number*]

no http update server

Parameter Description

Parameter	Description
host-name	Host name of the HTTP server.
ip-address	IP address of the HTTP server.
port-number	Port number of the HTTP server. The range is from 1 to 65,535.

Defaults

By default, the IP address of the HTTP remote upgrade server is 0.0.0.0 and the port number is 80.

Command mode

Global configuration mode.

Usage Guide

Use this command to configure the IP address and the HTTP port number of the
HTTP server. When processing upgrade, the user-configured server address is
preferentially used. If the connection fails, the server address in store in the local
upgrade record file will be used to establish the connection. When all the above
connection fails, upgrade will be suspended.
At least one IP address of upgrade server is stored in the local upgrade
record file, and this IP address cannot be modified.

The HTTP upgrade server address is not need to be configured because the
local upgrade record file records available upgrade server addresses.

If the server domain needs to be configured, enable the DNS function on
the device and configure the DNS server address.

The server IP address cannot be an IPv6 address.

Configuration Examples

The following example configures the IP address and the HTTP port number of the HTTP
server:

```
QTECH#configure terminal
Enter configuration commands, one per line. End with CNTL/Z. QTECH(config)#http update
server 10.83.132.1 port 90
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

7.8. http update set oob

Use this command to enable HTTP upgrade on the MGMT port. Use the **no** form

of this command to restore the default setting.

http update set oob

no http update set

oob

Parameter Description

Parameter	Description
N/A	N/A

Defaults
By default, HTTP upgrade is performed on the common port.

Command mode

Global configuration mode.

Usage Guide
This command is supported only on the device supporting the MGMT ports.

Configuration Examples

Related Commands

Platform Description

The following example enables HTTP upgrade on the MGMT port:

QTECH(config)# http update set oob

Command	Description
N/A	N/A

N/A

7.9. http update time

Use this command to configure the HTTP auto-detection time. Use the **no** form

of this command to restore the default auto-detection time.

http update time daily *hh*:*mm*

no http update time

Parameter Description

Parameter	Description
hh:*mm*	Specified auto-detection time; (24-hour system); accurate to minute.

Defaults

The default HTTP auto-detection time is random.

Command mode

Global configuration mode.

Usage Guide

Use this command to configure the HTTP auto-detection time. The device

detects the files available for upgrade on the server at the specified detection

time. Use can read these detected file information through Web interface.

Use the **no** form of this command to reset the auto-detection time as random.

Configuration Examples

The following example configures the HTTP auto-detection time.

```
QTECH#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
QTECH(config)#http update time daily 23:40
```

Related Commands

Command	Description
http update mode	Configures the HTTP update mode

Platform Description

N/A

7.10. show web-server status

Use this command to display the configuration and status of the Web service.

show web-server status

Parameter Description

Parameter	Description
N/A	N/A

Defaults

N/A

Command mode

Privileged EXEC mode

Usage Guide

N/A

Configuration Examples

The following example displays the configuration and status of the Web service:

```
QTECH#show web-server status http server status : enabled http server port : 80
https server status: enabled
https server port: 443
```

Related Commands

Command	Description
enable service web-server	Enables the HTTP service.
http port	Configures the HTTP port number.
http secure-port	Configures the HTTPS port number.

Platform Description

N/A

7.11. webmaster level

Use this command to configure the username and password for Web login authentication. Use the

no form of this command to restore the default setting.

QTECH МИР ДОСТУПНЕЕ
www.qtech.ru

webmaster level *privilege-level* **username** *name* **password** { *password* |

[**0** | **7**] *encrypted- password* }

 no webmaster level *privilege-level* [**username** name]

Parameter Description

Parameter	Description
privilege-level	Configures the user privilege-level.
name	Username.
password	Password.
0	**7**	Password type; 0 indicates plaintext, 7 indicates ciphertext.
encrypted-password	Password text.

Defaults

By default, two users are configured.
- User1 is configured with privilege level 1, username of admin and plaintext password of admin.
- User2 is configured with privilege level 2, username of guest and plaintext password of guest.

Command mode

 Global configuration mode.

Usage Guide

When HTTP is enabled, users can log in to the Web interface only after being

authenticated. Use this command to configure the username and password

for Web login authentication.

Use the **no webmaster level** *privilege-level* command to delete all the

usernames and passwords with a specified *privilege-level.*

Use the **no webmaster level** *privilege-level* **username** *name* command to

delete the specified username and password.

Usernames and passwords come with three permission levels, each of which

includes at most 10 usernames and passwords.

 By default, the system creates the **admin** account. The account cannot be

deleted and only the password of the account can be changed. The administrator account is the **admin** account, which corresponds to the level 0 permission. The administrator account owns all permissions on the Web page and can edit other management accounts and authorize the accounts to access pages.

Configuration Examples

The following example configures the username and password for Web login authentication,

```
QTECH#configure terminal
Enter  configuration  commands,  one  per  line.  End  with  CNTL/Z.  QTECH(config)#webmaster
level 0 username QTECH password admin
```

Related Commands

Command	Description
enable service web-server	Enables the HTTP service.

Platform Description

N/A

8.1. clear logging

Use this command to clear the logs from the buffer in privileged EXEC mode.
clear logging

Parameter Description

Parameter	Description
N/A	N/A

Defaults

N/A

Command Mode

Privileged EXEC mode

Usage Guide

This command clears the log packets from the memory buffer. You cannot clear the statistics of the log packets.

Configuration Examples

The following example clears the log packets from the memory buffer.

QTECH# **clear logging**

Related Commands

Command	Function
logging on	Turns on the log switch.
show logging	Displays the logs in the buffer.
logging buffered	Records the logs in the memory buffer.

Platform Description

N/A

8.2. logging

Use this command to send the log message to the specified syslog server. **logging** { *ip-address* | **ipv6** *ipv6-address* } [**udp-port** *port*] [**vrf** *vrf-name*] Use this command to delete the specified syslog server.

no logging { *ip-address* [**vrf** *vrf-name*] | **ipv6** *ipv6-address* } Use this command to restore the default port 514.

no logging { *ip-address* [**vrf** *vrf-name*] | **ipv6** *ipv6-address* } **udp-port**

Parameter Description

Parameter	Description
ip-address	Sets the IP address of the host receiving log messages.
vrf-name	Sets the VRF instance connecting with the host.
ipv6-address	Sets the IPv6 address of the host receiving log messages.
udp-port *port*	Sets the port number of the host receiving log messages. The default is 514.

Defaults

No log message is sent to syslog server by default.

Command Mode

Global configuration mode

Usage Guide

This command is used to configure a syslog server to receive log messages from the device. You can configure up to five syslog servers, log messages are sent to all configured syslog servers simultaneously,

 Configuration Examples

Related Commands

Platform Description

 The following example configures a syslog server with IP address 202.101.11.1.

QTECH(config)# logging 202.101.11.1

The following example configures a syslog server with IP address 10.1.1.100

and port number 8099. QTECH(config)# logging 202.101.11.1 udp-port 8099

The following example configures a syslog server with IPv6 address

AAAA:BBBB::FFFF. QTECH(config)# logging ipv6 AAAA:BBBB::FFFF

Command	Description
N/A	N/A

N/A

8.3. logging buffered

Use this command to set the memory buffer parameters (log severity, buffer size) for logs at global configuration layer. Use the no form of the command to disable recording logs in the memory buffer. Use the default form of this command to restore the default setting.

logging buffered [*buffer-size* | *level*]

no

logging buffered default logging buffered

Parameter Description

Parameter	Description
buffer-size	Size of the buffer is related to the specific device type: For the kernel / aggregation switches, 4 K to 10 M bytes. For the access switches, 4 K to 1 M Bytes. For other devices, 4 K to 128 K Bytes.

level	Severity of logs, from 0 to 7. The name of the severity or the numeral can be used.

Defaults

The buffer size is related to the specific device type.

- kernel switches: 1 M Bytes;
- aggregation switches: 256 K Bytes;
- access switches: 128 K Bytes;
- other devices: 4 K Bytes The log severity is 7.

Command

Mode

Global configuration mode

Usage Guide

The memory buffer for log is used in recycled manner. That is, when the memory buffer with the specified size is full, the oldest information will be overwritten. To show the log information in the memory buffer, run the **show logging** command in privileged user mode.

The logs in the memory buffer are temporary, and will be cleared in case of device restart or the execution of the **clear logging** command in privileged user mode. To trace a problem, it is required to record logs in flash or send them to Syslog Server.

The log information is classified into the following 8 levels (Table 1):

Keyword	Level	Description
Emergencie s	0	Emergency case, system cannot run normally
Alerts	1	Problems that need immediate remedy
Critical	2	Critical conditions
Errors	3	Error message
warnings	4	Alarm information

Notifications	5	Information that is normal but needs attention
informational	6	Descriptive information
Debugging	7	Debugging messages

Lower value indicates higher level. That is, level 0 indicates the information of the highest level. When the level of log information to be displayed on devices is specified, the log information at or below the set level will be allowed to be displayed.

After running the system for a long time, modifying the log buffer size especially in condition of large buffer may fails due to the insufficent availble continuous memory. The failure message will be shown. It is recommended to modify the log buffer size as soon as the system starts.

Configuration Examples

The following example allows logs at and below severity 6 to be recorded in the memory buffer sized 10,000 bytes.

QTECH(config)# **logging buffered** *10000 6*

Related Commands

Command	Description
logging on	Turns on the log switch.
show logging	Displays the logs in the buffer.
clear logging	Clears the logs in the log buffer.

Platform Description

N/A

8.4. logging console

Use this command to set the severity of logs that are allowed to be displayed on the console in global configuration mode. Use the **no** form of this command to

prohibit printing log messages on the console.

logging console [*level*]
no logging console

Parameter Description

Parameter	Description
level	Severity of log messages, 0 to 7. The name of the severity or the numeral can be used. For the details of log severity, see table 1.

Defaults
The default is debugging (7).

Command Mode

Global configuration mode

Usage Guide

When a log severity is set, the log messages at or below that severity will

be displayed on the console.

The **show logging** command displays the related setting parameters and statistics of the log.

Configuration Examples

The following example sets the severity of log that is allowed to be displayed on the console as 6:

QTECH(config)# **logging console informational**

Related Commands

Command	Description
logging on	Turns on the log switch.
show logging	Displays the logs and related log configuration parameters in the buffer.

Platform Description

N/A

8.5. logging count

Use this command to enable the log statistics function in global configuration mode. Use the **no** form of this command to restore the default setting.

logging count
no logging count

Parameter Description

Parameter	Description
N/A	N/A

Defaults

The log statistics function is disabled by default.

Command Mode
Global configuration mode

Usage Guide

This command enables the log statistics function. The statistics begins when the function is enabled. If you run the **no logging count** command, the statistics function is disabled and the statistics data is deleted.

Configuration Examples

The following example enables the log statistics function:

QTECH(config)# **logging count**

Related Commands

Command	Description
show logging count	Displays log information about modules of the system.
show logging	Displays basic configuration of log modules and log information in the buffer.

Platform Description

N/A

8.6. logging delay-send file

Use this command to set the name of the log file saved locally for delay

sending. Use the **no** form of this command to restore the default setting.

logging delay-send file

flash:*filename* **no logging delay-**

send file

Parameter Description

Parameter	Description
flash:_filename_	Sets the name of the log file saved locally for delay sending.

Defaults

The default name format is as follows: file size_device IP address_index.txt. If

you want to change the file name, the file sent to the remote server should be

named as follows: prefix_ file size_device IP address_index.txt; the file saved

locally should be named as follows: prefix_index.txt. The default prefix is

syslog_ftp_server.

Command Mode

Global configuration mode

Usage Guide

The file name cannot contain special symbols including . ∨ : * " < > and |.

For example, the file name is log_server, file index 5, file size 1000B and device

IP address 10.2.3.5. The log file sent to the remote server is named

log_server_1000_10.2.3.5_5.txt and the log file saved locally is named

log_server_5.txt.

If the device has an IPv6 address, the colon (:) in the IPv6 address is replaced by the hyphen (-).

For example, the is log_server, file index 6, file size 1000B and device IPv6

address 2001::1. The log file sent to the remote server is named

log_server_1000_2001-1_6.txt and the log file saved locally is named

log_server_6.txt.

Configuration Examples

The following example sets the name of the log file saved locally to log_server.

QTECH(config)# logging delay-send fileflash**:**log_server

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

8.7. logging delay-send interval

Use this command to set the interval at which log sending is delayed. Use

the **no** form of this command to restore the default setting.
logging delay-send interval *seconds*
no logging delay-send interval

Parameter Description

Parameter	Description
seconds	Sets the interval at which log sending is delayed, in the range from 600 to 65535 seconds.

Defaults

The default is 3600.

Command Mode

Global configuration mode

Usage Guide

N/A

Configuration Examples

The following example sets the the interval at which log sending is delayed to 600 seconds.

QTECH(config)# logging delay-send interval 600

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

8.8. logging delay-send server

Use this command to set the interval at which log sending is delayed. Use the **no**

form of this command to restore the default setting.

logging delay-send server { [**oob**] *ip-address* | **ipv6** *ipv6-address* } [**vrf** *vrf-name*] [**via**

mgmt-name] **mode** { **ftp user** *username* **password** [**0** | **7**] *password* | **tftp** }
no logging delay-send server [**oob**] *hostname* [**vrf** *vrf-name*] [**via** *mgmt-name*]

Parameter Description

Parameter	Description
oob	Indicates that logs are sent to the server through the MGMT port. It is required that the device have the MGMT port.
ip-address	Specifies the IP address of the server.
ipv6 *ipv6-address*	Specifies the IPv6 address of the server.
vrf *vrf-name*	Specifies the VRF instance connected to the server.

username	Sets the FTP server username.
password	Sets the FTP server password.
0	(Optional) The password is displayed in plaintext.
7	The password are encrypted.

Defaults

The default is 3600.

Command Mode

Global configuration mode

Usage Guide

N/A

Configurati on Examples

Related Commands

Platform Description

The following example sets the the interval at which log sending is delayed to 600 seconds.

QTECH(config)# logging delay-send interval 600

Command	Description
N/A	N/A

N/A

8.9. logging delay-send terminal

Use this command to enable delay in sending logs to console and remote

terminal. Use the **no** form of this command to restore the default setting.

logging delay-send

terminal no logging delay-

send terminal

Parameter Description

Parameter	Description
N/A	N/A

Defaults

This function is disabled by default.

Command Mode

Global configuration mode

Usage Guide

N/A

Configuration Examples

The following example enables delay in sending logs to console and remote terminal.

QTECH(config)# logging delay-send terminal

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

8.10. logging facility

Use this command to configure the device value of the log information in global configuration mode. Use the **no** form of the command to restore the default setting.

logging facility *facility-type*
no logging facility

Parameter Description

Parameter	Description
facility-type	Syslog device value. For specific settings, refer to the usage guide.

Defaults

The default is 23 if the RFC5424 format is enabled

(Local7, local use). The default is 16 if the RFC5424

format is disabled (Local0, local use).

Command Mode

Global configuration mode

Usage Guide

The following table (Table-2) is the possible device values of Syslog:

Numerical Code	Facility
0 (kern)	Kernel messages
1 (user)	User-level messages
2 (mail)	Mail system
3 (daemon)	System daemons
4 (auth1)	security/authorization messages
5 (syslog)	Messages generated internally by syslogd
6 (lpr)	Line printer subsystem
7 (news)	USENET news
8 (uucp)	Unix-to-Unix copy system
9 (clock1)	Clock daemon
10 (auth2)	security/authorization messages
11 (ftp)	FTP daemon

12 (ntp)	NTP subsystem
13 (logaudit)	log audit
14 (logalert)	log alert
15 (clock2)	clock daemon
16 (local0)	Local use

17 (local1)	**Local use**
18 (local2)	Local use
19 (local3)	Local use
20 (local4)	Local use
21 (local5)	Local use
22 (local6)	Local use
23 (local7)	Local use

The default device value of RGOS is 23 (local 7).

Configuration Examples

The following example sets the device value of **Syslog** as **kernel**:

QTECH(config)# logging facility kern

Related Commands

Command	Description
logging console	Sets the severity of logs that are allowed to be displayed on the console.

Platform Description

N/A

8.11. logging file

Use this command to save log messages in the log file, which can be saved in

hardware disk, expanded FLASH, USB or SD. Use the **no** form of this command to restore the default setting, **logging file** { **sata0:**_filename_ | **flash:**_filename_ | **flash2:**_filename_ | **usb0:**_filename_ | **usb1:**_filename_ | **sd0:**_filename_ } [_max-file-size_] [_level_]

no logging file

Parameter Description

Parameter	Description
sata0	Saves the log file in hardware disk.
flash	Saves the log file in expanded FLASH.
flash2	Saves the log file in expanded FLASH2.
usb0	Saves the log file in USB0. This parameter is supported by the device with one USB connector and the USB extension device.
usb1	Saves the log file in USB1, This parameter is supported by the device with two USB connectors and the USB extension device.
sd0	Saves the log file in the SD card. This parameter is supported by the device with the SD card interface and the SD card extension device.

filename	Sets the file name. The file type is omitted, which is fixed as txt.
max-file-size	Sets the maximum file size, in the range from 128K to 6M bytes, The default is 128K,
level	Sets the level of the log message saved in the log file, which can be either the level name or the level number. The default is 6. See Usage Guide for details.

Defaults

Log messages are not saved in expanded FLASH by default.

Command Mode

Global configuration mode

Usage Guide

You can save log messages in expanded FLASH if you don't want to transmit log messages on the network or there is no syslog server,
The log file cannot be configured with the suffix, which is fixed as txt.

If there is no expanded FLASH, the **logging file flash** command is hidden automatically and cannot be configured. If no FLASH2 is available, the **logging file flash** command is hidden automatically and cannot be configured. If FLASH2 is available, the log file is saved in FLASH2 after the **logging file flash** command is configured.

Keyword	Level	Description
Emergencies	0	Emergency case. The system fails to run.
Alerts	1	Problem that call for immediate

		solution.
Critical	2	Critical message.
Errors	3	Error message.
warnings	4	Alarm message.
Notifications	5	message that is normal but calls for attention.
informational	6	Descriptive message.
Debugging	7	Debugging message

Configuration Examples

Related Commands

Platform Description

The following example saves the log message in expanded FLASH and sets file name, file size and log level to syslog.txt, 128K and 6 respectively.

QTECH(config)# logging file flash:syslog

Command	Description
N/A	N/A

N/A

8.12. logging file numbers

Use this command to set the number of log files written into FLASH. Use the **no** form of this command to restore the default setting.

logging file numbers *numbers*
no logging file numbers

Parameter Description

Parameter	Description
numbers	Sets the number of log files written into FLASH, in the range from 2 to 16.

Defaults

The default is 16.

Command Mode

Global configuration mode

Usage Guide

The system does not delete previously generated log files even if you change

this configuration, Therefore, you need to delete the log files manually to save

FLASH size (you can send log files to the server through TFTP before that).

For example, 16 log files are generated by default before you want to change

the number to 2. New logs are overwritten constantly in log files indexed 0 to 1.

However, log files indexed from 2 to 16 remain. You can delete these log files manually as needed.

Configuration Examples

Related Commands

Platform Description

The following example sets the number of log files written into FLASH to 8.

QTECH(config)# logging file numbers 8

Command	Description
N/A	N/A

N/A

8.13. logging filter direction

Use this command to filter the log messages destined to a certain direction.

Use the **no** form of this command to restore the default setting.

logging filter direction { **all** | **buffer** | **file** | **server** | **terminal** }

no logging filter direction { **all** | **buffer** | **file** | **server** | **terminal** }

Parameter Description

Parameter	Description
all	Log messages destined to all directions are filtered, including console, VTY terminal, log buffer, log file and log server.
buffer	Log messages destined to the log buffer are filtered, including log messages displayed by running the **show logging** command.
file	Log messages destined to the log file are filtered.
server	Log messages destined to the log server are filtered.
terminal	Log messages destined to the console and the VTY terminal (including Telnet and SSH).

Defaults

Log messages destined to all directions are filtered by default.

Command Mode

Global configuration mode

Usage Guide

In general, log messages destined to all directions are filtered, including console, VTY terminal, log buffer, log file and log server. If you want to filter log messages destined to a certain direction, the terminal for instance, configure the **terminal** parameter.

Configuration Examples

Related Commands

Platform Description

The following example filters log messages destined to the terminal (including the console and the VTY terminal).

QTECH(config)# logging filter direction terminal

Command	Description
N/A	N/A

N/A

8.14. logging filter rule

Use this command to configure the filter rule of the log message,

logging filter rule { **exact-match module** *module-name* **mnemonic** *mnemonic-name* **level** *level* |

single-match [**level** *level* | **mnemonic** *mnemonic-name* | **module**

module-name] } Use this command to delete the "exact-match"

filter rule.

no logging filter rule exact-match [**module** *module-name* **mnemonic** *mnemonic-name* **level**

level]

Use this command to delete the "single-match" filter rule.

no logging filter rule single-match [**level** *level* | **mnemonic** *mnemonic-*

name | **module** *module- name*]

Parameter Description

Parameter	Description
exact-match	Exact-match filter rule. Fill in all the following three parameters.

single-match	Single-match filter rule. Fill in one of the following three parameters.
module *module-name*	Module name.
mnemonic *mnemonic-name*	Mnemonic name.
level *level*	Log level,

Defaults

No filter rule is configured by default,

```
QTECH(config)# logging filter rule exact-match module LOGIN mnemonic
LOGOUT level 5
```

Command Mode

Global configuration mode

Usage Guide

If you want to filter a specific log message, use the "exact-match" filter rule
and fill in all three parameters, namely, module name, mnemonic name
and log level.

If you want to filter a specific kind of log messages, use the "single-match" filter
rule and fill in one of three parameters, namely, module name, mnemonic name
and log level.

When configured with the same module name, mnemonic name or log level, the
"single-match" filter rule has a higher priority than the "exact-match" filter rule,

Configuration Examples

The following example configures the "exact-match" filter rule with
parameters of module name LOGIN, log level 5 and mnemonic name
LOGOUT.

Related Commands

Platform Description

QTECH | www.qtech.ru
МИР ДОСТУПНЕЕ

The following example configures the "single-match" filter rule with the

parameter of module name SYS.

QTECH(config)# logging filter rule single-match module SYS

Command	Description
N/A	N/A

N/A

8.15. logging filter type

Use this command to configure the filter type of log messages. Use the **no** form

of this command to restore the default setting.

logging filter type { **contains-only** | **filter-only** }
no logging filter type

Parameter Description

Parameter	Description
contains-only	The log message containing the key word of the filter rule is printed.
filter-only	The log message containing the key word of the filter rule is filtered.

Defaults

The default filter type is filter-only.

 Command Mode

 Global configuration mode

Usage Guide   1.

When too many log messages are printed, the terminal screen keeps being refreshed. If you
are not concerned with these log messages, use the "filter-only" filter type to filter the log
messages,

If you are concerned with certain log messages, use the "contains-only" filter type to print
log messages containing the key word of the filter rule, so as to monitor whether certain
events happen.

In real operation, the contains-only and the fitler-only filter types cannot be configured at the same time.

If you configure the filter direction and the filter type without configuring the filter rule, the log messages are not filtered.

Configuration Examples

Related Commands

Platform Description

The following example sets the filter type to contains-only.

QTECH(config)# logging filter type contains-only

Command	Description
N/A	N/A

N/A

8.16. logging flash flush

Use this command to write log messages in the system buffer into the flash file immediately.

logging flash flush

Parameter Description

Parameter	Description
N/A	N/A

Defaults
N/A

Command Mode

Global configuration mode

Usage Guide

In general, the log messages are cached in the log buffer. Only when the

buffer is full or the timer expires are log messages written into the flash file.

This command is used to write log messages in the system buffer into the flash

file immediately.

The **logging flash flush** command takes effect only once for each configuration.
The log messages cached in the buffer are written into the flash file immediately
after configuration.

Configuration Examples

Related Commands

Platform Description

The following example writes log messages in the system buffer into the flash file
immediately.
QTECH(config)# logging flash flush

Command	Description
N/A	N/A

N/A

8.17. logging flash interval

Use this command to set the interval to write log messages into the flash file,

Use the **no** form of this command to restore the default setting.

logging flash interval *seconds*
no logging flash interval

Parameter Description

Parameter	Description
interval *seconds*	The interval to write log messages into the flash file, in the range from 1 to 57840 in the unit of seconds.

Defaults

The default is 3600.

Command Mode

Global configuration mode

Usage Guide

This command is used to set the interval to write log messages into the flash file. The timer starts after configuration, If you want to restore the interval to 3600 seconds, use the **no logging flash interval** command.

To avoid writing log messages into the flash file too frequently, it is not recommended to set a short interval.

Configuration Examples

The following example sets the interval to write log messages into the flash file to 300 seconds.

QTECH(config)# logging flash interval300

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

8.18. logging life-time

Use this command to configure the preservation duration of logs in expanded FLASH. Use the **no**

form of this command to restore the default setting.

logging life-time level *level days*
no logging life-time level *level*

Parameter Description

Parameter	Description
level	Sets the log level, which can be either the level name or the level number.
days	Sets the preservation duration of logs.

Defaults

No preservation duration is set by default.

Command Mode

Global configuration mode

Usage Guide

Due to difference in expanded FLASH size and log level, logs with different levels can be configured with different preservation durations.

Once log preservation based on time is enabled, log preservation based on file size is disabled automatically. The log files are stored under the syslog/ directory of the expanded FLASH,

Configuration Examples

Related Commands

Platform Description

The following example sets the preservation duration of logs whose level is 6 to 10 days.
QTECH(config)# logging life-time level 6 10

Command	Description
N/A	N/A

N/A

8.19. logging monitor

Use this command to set the severity of logs that are allowed to be displayed on

the VTY window (telnet window, SSH window, etc.) in global configuration

mode. Use the **no** form of this command to disable this function.

logging monitor [*level*]
no logging monitor

Parameter Description

Parameter	Description
level	Severity of the log message. The name of the severity or the numeral can be used. For the details of log severity, see Table-1.

Defaults

The default is debugging (7).

Command Mode

Global configuration mode

Usage Guide

To print log information on the VTY window, run the **terminal monitor** command

in privileged EXEC mode. The level of logs to be displayed is defined by

logging monitor.
The log level defined with "Logging monitor" is for all VTY windows.

Configuration Examples

The following example sets the severity of log that is allowed to be printed on the VTY
window as 6:

QTECH(config)# **logging monitor informational**

Related Commands

Command	Description
logging on	Turns on the log switch.

www.qtech.ru

show logging	Displays the log messages and related log configuration parameters in the buffer.

Platform Description

N/A

8.20. logging on

Use this command globally to allow logs to be displayed on different devices.

Use the **no** form of this command to disable this fucntion.

logging on
no logging on

Parameter	Description
N/A	N/A

Parameter Description

Defaults

Logs are allowed to be displayed on different devices.

Command Mode

Global configuration mode

Usage Guide

Log information can not only be shown in the Console window and VTY window, but also be recorded in different equipments such as the memory buffer, the expanded FLASH and the Syslog Server. This command is the total log switch. If this switch is turned off, no log will be displayed or recorded unless the severity level is smaller than 1.

Configuration Examples

The following example disables the log switch on the device.

QTECH(config)# **no logging on**

Related Commands

Command	Description
logging buffered	Records the logs to a memory buffer.
logging server	Sends logs to the Syslog server.
logging file flash:	Records logs on the expanded FLASH.
logging console	Allows the log level to be displayed on the console.
logging monitor	Allows the log level to be displayed on the VTY window (such as telnet window) .
logging trap	Sets the log level to be sent to the Syslog server.

Platform Description

N/A

8.21. logging policy

Use this command to configure the severity ranking policy. Use the **no** form

of this command to remove one policy, Use the **no logging policy**

command to remove all policies.

logging policy module *module-name* [**not-lesser-than**] *level* **direction** { **all** | **server** | **file** |

console | **monitor** | **buffer** }

no logging policy module *module-name* [**not-lesser-than**] *level* **direction** { **all** | **server** | **file** |

console | **monitor** | **buffer** }

no logging policy

Parameter Description

Parameter	Description
module-name	The name of the module applying the ranking policy.
not-lesser-than	If this parameter is specified, only when the log's level is not lower than the configured level can the log be sent. Otherwise, the log is filtered. If this parameter is not specified, only when the log's level is not higher than the configured level can the log be sent. Otherwise, the log is filtered.
level	Severity level
all	Applies the ranking policy in all directions.
server	Applies the ranking policy to the direction toward the server.
file	Applies the ranking policy to the direction toward the log file.
console	Applies the ranking policy to the direction toward the console.
monitor	Applies the ranking policy to the direction toward the remote server.
buffer	Applies the ranking policy to the direction toward the buffer.

Defaults

This function is disabled by default.

Command Mode

Global configuration mode

Usage Guide

This command is used to send logs to different destinations based on module and severity.

Configuration Examples

The following example sends logs of the SYS module leveled above 5 to the console and sends logs of the SYS module leveled below 3 to the buffer.

QTECH(config)# logging policy module SYS not-lesser-than 5 direction console

QTECH(config)# logging policy module SYS 3 direction buffer

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

8.22. logging rate-limit

Use this command to enable log rate limit function to limit the output logs in a second in the global configuration mode. Use the **no** form of this command to disable this function.

logging rate-limit { *number* | **all** *number* | **console** { *number* | **all** *number* } } [**except** *severity*]
no logging rate-limit

Parameter Description

Parameter	Description
number	The number of logs that can be processed in a second in the

	range from 1 to 10000.
all	Sets rate limit to all the logs with severity level 0 to 7.
console	Sets the amount of logs that can be shown in the console in a second.
except	By default, the severity level is error (3). The rate of the log whose severity level is less than or equal to error (3) is not controlled.
severity	Log severity level in the range from 0 to 7. The lower the level is, the higher the severity is.

Defaults

The log rate limit function is disabled by default.

Command Mode

Global configuration mode
 Usage Guide

Use this command to control the syslog outpt to prevent the massive log output.

Configuration Examples

The following example sets the number of the logs (including debug) that can be processed in a second as 10. However, the logs with warning or higher severity level are not controlled: QTECH(config)#**logging rate-limit all** *10* **except warnings**

Related Commands

Command	Description
show logging count	Displays log information about modules of the system.

show logging	Displays basic configuration of log modules and log information in the buffer.

Platform Description

N/A

8.23. logging rd on

Use this command in global configuration mode on the host to enable the log re-direction function and allow re-directing logs on slave or backup devices to the host in the VSU environment. Use **no** form of this command to disable this function.

logging rd on
no logging rd on

Parameter Description

Parameter	Description
N/A	**N/A**

Defaults
The log re-direction function is enabled by default.

Command Mode

Global configuration mode

Usage Guide

The log information on slave or back devices not only can be shown on the Console window of slave or backup devices, but also can be re-directed to the host and exported to the Console and VTY windows of the host, and recorded in cache, expanded FLASH and Syslog Server of the host.

Configuration Examples

Related Commands

Platform Description

The following example enables the log re-direction function on a device:

QTECH(config)#logging rd on

Command	Description
show logging count	Displays log information about modules of the system.
show logging	Displays basic configuration of log modules and log information in the buffer.

N/A

8.24. logging rd rate-limit

Use this command in global configuration mode on the host to enable the log re-direction rate limiting function to limit the number of logs that can be re-directed from a slave or backup device to the host each second in the VSU environment. Use the **no** form of this command to disable this function.

logging rd rate-limit *number* [**except** [*severity*]]

no logging rd rate-limit

Parameter Description

Parameter	Description
number	Log information that can be re-directed each second, ranging from 1 to 10,000 logs
except	Log information on or lower than the severity level will not be limited; error (3) by default, log information on or lower than the error level is not limited.
severity	Log information severity level; lower the level is, higher the severity is, ranging from 0 to 7

Defaults

The maximum number of logs that can be re-directed each second is 200 by default.

Command Mode

Global configuration mode

Usage Guide

This command is used to control the output of log information by system re-direction. You can use this command to prevent a slave or backup device from re-directing a large number of logs to the host.

Configuration Examples

Related Commands

Platform Description

The following example sets the maximum number of logs (including debug) that can be re-directed from a slave device to the host each second at 10, excepting logs on and above the warning severity level:

QTECH(config)#logging rd rate-limit 10 exceptwarnings

Command	Description
show logging count	Displays log information about modules of the system.
show logging	Displays basic configuration of log modules and log information in the buffer.

N/A

8.25. logging server

Use this command to send the logs to the specified Syslog Sever in global configuration mode. Use the **no** form of this command to remove the setting. Use the **default** form of this command to restore the default setting.

logging server [**oob**] { *ip-address* | **ipv6** *ipv6-address* } [**udp-port** *port*] [**vrf** *vrf-name*]

QTECH
МИР ДОСТУПНЕЕ   www.qtech.ru

no logging server [**oob**] { *ip-address* [**vrf** *vrf-name*] | **ipv6** *ipv6-address* }
no logging server { *ip-address* [**vrf** *vrf-name*] | **ipv6** *ipv6-address* } **udp-port**

Parameter Description

Parameter	Description
oob	Specifies out-of-band communication for the logging server. (logs are sent through the MGMT port to the logging server.)
ip-address	IP address of the host that receives log information.
vrf-name	Specifies the VRF instance (VPN device forwarding table) connecting to the log host.
ipv6-address	Specifies IPV6 address for the host receiving the logs.
udp-port *port*	Specifies the port number for the specified host (The default port number is 514).

Defaults

No log is sent to any syslog server by default.

Command Mode

Global configuration mode

Usage Guide

This command specifies a Syslog server to receive the logs of the device.

Users are allowed to configure up to 5 Syslog Servers. The log information

will be sent to all the configured Syslog Servers at the same time.

The **via** parameter is available only after the **oob** parameter is used. The /**vrf**

parameter cannot be used at the same time.

The IPv6 server does not support VRF and oob.

Configuration Examples

The following example specifies a syslog server of the address 202.101.11.1:

QTECH(config)# **logging server** *202.101.11.1*

The following example specifies an ipv6 address as AAAA:BBBB:FFFF:

QTECH(config)# **logging server ipv6** *AAAA:BBBB:FFFF*

Related Commands

Command	Description
logging on	Turns on the log switch.
show logging	Displays log messages and related log configuration parameters in the buffer.
logging trap	Sets the level of logs allowed to be sent to Syslog server.

Platform Description

N/A

8.26. logging source interface

Use this command to configure the source interface of logs in global configuration mode. Use the **no**

form of this command to restore the default setting.
logging source [**interface**] *interface-type interface-number*
no logging source [**interface**]

Parameter Description

Parameter	Description
interface-type	Interface type.
interface-number	Interface number.

Defaults
No source interface is configured by default.

Command Mode

Global configuration mode

Usage Guide

By default, the source address of the log messages sent to the syslog server is the address of the sending interface. For easy tracing and management, this command can be used to fix the source address of all log messages as an interface address, so that the administrator can identify which device is sending the message through the unique addresses. If the source interface is not configured on the device, or no IP address is configured for the source interface, the source address of the log messages is the address of the sending interface.

Configuration Examples

The following example specifies loopback 0 as the source address of the syslog messages:

QTECH(config)# **logging source interface loopback** *0*

Related Commands

Command	Description
logging server	Sends logs to the Syslog server.

Platform Description

N/A

8.27. logging source ip | ipv6

Use this command to configure the source IP address of logs in global configuration mode. Use the **no**

form of this command to restore the default

setting. **logging source** {**ip** *ip-address* |

ipv6 *ipv6-address*} **no logging source** { **ip**

| **ipv6** }

Parameter Description

Parameter	Description
ip-address	Specifies the source IPV4 address sending the logs to IPV4

	log server.
ipv6-address	Specifies the source IPV6 address sending the logs to IPV6
	log server.

Defaults

No source address is configured by default.

Command Mode

Global configuration mode

Usage Guide

By default, the source address of the log messages sent to the syslog server is the address of the sending interface. For easy tracing and management, this command can be used to fix the source address of all log messages as an address, so that the administrator can identify which device is sending the message through the unique addresses. If this IP address is not configured on the device, the source address of the log messages is the address of the sending interface.

 Configuration Examples

 The following example specifies 192.168.1.1 as the source address of the syslog messages:

QTECH(config)# **logging source ip** *192.168.1.1*

Related Commands

Command	Description
logging server	Sends the logs to the Syslog server.

Platform Description

 N/A

8.28. logging statistic enable

Use this command to enable logging periodically. Use **no** form of this command to restore the default setting.

logging statistic enable

no logging statistic

enable

Parameter Description

Parameter	Description
N/A	N/A

Defaults

This function is disabled by default.

Command Mode

Global configuration mode

Usage Guide

This command is used to send performance statistics at a certain interval for the server to monitor the system performance.

Configuration Examples

The following example enables logging periodically.

QTECH(config)# logging statistic enable

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

8.29. logging statistic interval

Use this command to configure the interval at which logs are sent. Use the **no**form of this command to restore the default setting.

logging statistic mnemonic *mnemonic* **interval** *minutes*

no logging statistic mnemonic *mnemonic*

Parameter Description

Parameter	Description
mnemonic	Sets the mnemonics to identify the object.
minutes	Sets the interval at which logs are sent, in the unit of minutes.

Defaults

The default is 15.

Command Mode

Global configuration mode

Usage Guide

The available settings include 0, 15, 30, 60 and 120. 0 indicates this function is disabled.

Configuration Examples

The following example set the interval at which logs are sent to 30 minutes.

QTECH(config)# logging statistic mnemonic TUNNEL_STAT interval30

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

8.30. logging statistic terminal

Use this command to enable logs to be sent to the console and the remote

terminal periodically. Use the **no** form of this command to restore the default

setting.

logging statistic terminal

no logging statistic

terminal

Parameter Description

Parameter	Description
N/A	N/A

Defaults

This function is disabled by default.

Command Mode

Global configuration mode

Usage Guide

N/A

Configuration Examples

The following example enable logs to be sent to the console and the remote terminal.

QTECH(config)# logging statistic terminal

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

8.31. logging synchronous

Use this command to enable synchronization function between user input and log output in line configuration mode to prevent interruption when the user is keying in characters. Use the **no** form of this command to restore the default setting.

logging synchronous

no logging synchronous

Parameter Description

Parameter	Description
N/A	N/A

Defaults

The synchronization function between user input and log output is disabled by default.

 Command Mode

Line configuration mode

Usage Guide

```
QTECH# configure terminal
Oct 9 23:40:55 %LINK-5-CHANGED: Interface GigabitEthernet 0/1, changed state to down
Oct 9 23:40:55 %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet 0/1, changed state to DOWN
QTECH# configure terminal//----the input command by the user is
 output again rather than being intererupted.
```

This command enables synchronization function between user input and log

output, preventing the user from interrupting when keying in the characters.

Print UP-DOWN logs on the port when keying in the command, the input

command will be output again:

```
QTECH(config)#line console 0
QTECH(config-line)#logging synchronous
```

Configuration Examples

Related Commands

Command	Description
show running-config	Displays the configuration.

Platform Description

 N/A

8.32. logging trap

Use this command to set the severity of logs that are allowed to be sent to the syslog server in global configuration mode. Use the **no** form of this command to prohibit sending log messages to the Syslog server.

logging trap [*level*]
no logging trap

Parameter Description

Parameter	Description
level	Severity of the log message. The name of the severity or the numeral can be used. For the details of log severity, see Table 1.

Defaults
The default is informational(6)

Command Mode

Global configuration mode

Usage Guide

To send logs to the Syslog Server, run the **logging** command in global configuration mode to configure the **Syslog Server**. Then, run the **logging trap** command to specify the severity level of logs to be sent.

The **show logging** command displays the configured related parameters and statistics of the log.

Configuration Examples

The following example enables logs at severity 6 to be sent to the Syslog Server with the address of 202.101.11.22:

```
QTECH(config)# logging 202.101.11.22
QTECH(config)# logging trap informational
```

Related Commands

Command	Description

logging on	Turns on the log switch.
logging	Sends logs to the Syslog server.
show logging	Displays the log messages and related log configuration parameters in the buffer.

Platform Description

N/A

8.33. logging userinfo

Use this command to enable the logging function to record user log/exit. Use

the **no** form of this command to restore the default setting.

logging userinfo
no logging userinfo

Parameter Description

Parameter	Description
N/A	N/A

Defaults
No log message is printed recording user log/exit by default.

Command Mode

Global configuration mode

Usage Guide

This command is used to print the log message to remind the administrator of

user login. The log message is in the format as follows:

Mar 22 14:05:45 %LOGIN-5-LOGIN_SUCCESS: User login from vty0
(192.168.23.68) OK.

Configuration Examples

Related Commands

Platform Description

The following example enables the logging function to record user log/exit.

QTECH(config)# logging user-info

Command	Description
N/A	N/A

N/A

8.34. logging userinfo command-log

Use this command to enable the logging function to record user operation.

Use the **no** form of this command to restore the default setting.

logging userinfo command-log

no logging userinfo command-log

Parameter Description

Parameter	Description
N/A	N/A

Defaults

No log message is printed recording user operation by default.

Command Mode

Global configuration mode

Usage Guide

This command is used to print the log message to remind the administrator of configuration change.

Mar 22 14:10:40 %CLI-5-EXEC_CMD: Configured from vty0 (192.168.23.68)

command-log: logging server 192.168.23.68.

The log message is in the format as follows:

Configuration Examples

Related Commands

Platform Description

The following example enables the logging function to record user operation.

QTECH(config)# logging user-info command-log

Command	Description
N/A	N/A

N/A

8.35. service log-format rfc5424

Use this command to enable the RFC5424 format. Use the **no** form of this command to restore the default setting.

service log-format

rfc5424 no service log-

format rfc5424

Parameter Description

Parameter	Description
N/A	N/A

Defaults
The RFC3164 format is used by default.

 Command Mode

 Global configuration mode

Usage Guide

After the RFC5424 format is enabled, the service sequence-numbers, service

sysname, **service timestamps**, **service private-syslog** and **service standard-**

syslog commands become invalid and hidden.

After switching back to the RFC3164 format, the **logging delay-send**, **logging**

policy and **logging statistic** commands become invalid and hidden.

After switching the log format, the results of running the **show logging** and **show logging config**

commands change,

 Configuration Examples

Related Commands

Platform Description

 The following example enables the RFC5424 format.
QTECH(config)# service log-format rfc5424

Command	Description
N/A	N/A

N/A

8.36. service private-syslog

Use this command to set the syslog format to the private syslog format. Use

the **no** form of this command to restore the default setting.

service private-syslog

no service private-

syslog

Parameter Description

Parameter	Description
N/A	N/A

Defaults
The syslog is displayed in the default format.

 Command Mode

 Global configuration mode

Usage Guide

By default, the syslog is displayed in the format as follows:

*timestamp: %facility-severity-mnemonic:

description Here is an example:

*May 31 23:25:21: %SYS-5-CONFIG_I: Configured from console byconsole

With this function enabled, the syslog is displayed in the

format as follows: timestamp facility-severity-mnemonic:

description

Here is an example:

May 31 23:31:28 SYS-5-CONFIG_I: Configured from consoleby console   The differ

The private syslog does not have "*" before the timestamp, ":" after the

timestamp and "%" before the identifying string.

Configuration Examples

The following example sets the private syslog format.

QTECH(config)# service private-syslog

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

8.37. service sequence-numbers

Use this command to attach serial numbers into the logs in global configuration

mode. Use the **no** form of this command to restore the default setting.

service sequence-

numbers no service

sequence-numbers

Parameter

Parameter	Description
N/A	N/A

Description

Defaults

No serial number is contained in the logs by default.

 Command Mode

Global configuration mode

Usage Guide

In addition to the timestamp, you can add serial numbers to the logs,

numbering from 1. Then, it is clearly known whether the logs are lost or not

and their sequence.

 Configuration Examples

 The following example adds serial numbers to the logs.

QTECH(config)# **service sequence-numbers**

Related Commands

Command	Description
logging on	Turns on the log switch.
service timestamps	Attaches timestamps to the logs.

 Platform Description

N/A

8.38. service standard-syslog

Use this command to set the syslog format to the standard syslog format

defined in RFC3164. Use the **no** form of this command to restore the default

setting.

service standard-syslog

no service standard-syslog

Parameter Description

Parameter	Description

N/A	N/A

Defaults

The syslog is displayed in the default format.

Command Mode

Global configuration mode

Usage Guide

By default, the syslog is displayed in the format as follows:

*timestamp: %facility-severity-mnemonic:

description Here is an example:

*May 31 23:25:21: %SYS-5-CONFIG_I: Configured from console byconsole

With this function enabled, the syslog is displayed in the

format as follows: timestamp %facility-severity-mnemonic:

description

Here is an example:

May 31 23:31:28 %SYS-5-CONFIG_I: Configured from consoleby console   The differ

The standard syslog does not have "*" before the timestamp and ":" after the timestamp.

Configuration Examples

Related Commands

Platform Description

The following example sets the standard syslog format.

QTECH(config)# service standard-syslog

Command	Description
N/A	N/A

N/A

8.39. service sysname

Use this command to attach system name to logs in global configuration mode.

Use the **no** form of this command to restore the default setting.

service sysname

no service sysname

Parameter Description

Parameter	Description
N/A	N/A

Defaults

No system name is attached to logs by default.

Command Mode

Global configuration mode

Usage Guide

This command allows you to decide whether to add system name in the log information.

Configuration Examples

The following example adds a system name in the log information:

```
Mar 22 15:28:02 %SYS-5-CONFIG: Configured from console by console QTECH #config terminal
Enter configuration commands, one per line. End with CNTL/Z. QTECH (config)#service sysname
QTECH (config)#end QTECH #
Mar 22 15:35:57 S3250 %SYS-5-CONFIG: Configured from console by console
```

Related Commands

Command	Function
show logging	Displays basic configuration of log modules and log information in the buffer.

Platform Description

N/A

8.40. service timestamps

Use this command to attach timestamp into logs in global configuration mode.

Use the **no** form of this command to remove the timestamp from the logs. **Use the**

default form of this command to restore the default setting.

service timestamps [*message-type* [**uptime** | **datetime** [**msec** | **year**]]]

no service timestamps [*message-type*]
default service timestamps [*message-type*]

Parameter Description

Parameter	Description
message-type	The log type, including Log and Debug. The log type indicates the log information with severity levels of 0 to 6. The debug type indicates that with severity level 7.
uptime	Device start time in the format of *Day*Hour*Minute*Second, for example, 07:00:10:41.
datetime	Current time of the device in the format of Month*Date*Hour*Minute*Second, for example, Jul 27 16:53:07.
msec	Current time of the device in the format of Month*Date*Hour*Minute*Second*milisecond, for example, Jul 27 16:53:07.299
year	Current time of the device in the format of Year*Month*Date*Hour*Minute*Second, for example, 2007 Jul 27 16:53:07

Defaults

The time stamp in the log information is the current time of the device. If the device has no RTC, the time stamp is automatically set to the device start time.

Command Mode

Global configuration mode

Usage Guide

When the **uptime** option is used, the time format is the running period from the last start of the device to the present time, in seconds. When the **datetime** option is used, the time format is the date of the current device, in the format of YY-MM-DD, HH:MM:SS.

Configuration Examples

The following example enables the timestamp for **log** and **debug** information, in format of Datetime, supporting millisecond display.

```
QTECH(config)# service timestamps debug datetime msec QTECH(config)# service
timestamps log datetime msec QTECH(config)# end
QTECH(config)# Oct 8 23:04:58.301 %SYS-5-CONFIG I: configured from
console by console
```

Related Commands

Command	Description
logging on	Turns on the log switch.
service sequence-numbers	Enables serial numbers of logs.

Platform Description

N/A

8.41. show logging

Use this command to display configured parameters and statistics of logs and log messages in the memory buffer at privileged user layer. The log messages are sorted by the timestamp from before to now.

show logging

Parameter Description

Parameter	Description
N/A	N/A

Defaults

N/A

Command Mode

Privileged EXEC mode

Usage Guide

N/A

Configuration Examples

The following command displays the result of the **show logging** command with RFC5424 format disabled.

```
QTECH# show logging
Syslog logging: enabled
    Console logging: level debugging, 15495 messages logged Monitor logging:
    level debugging, 0 messages logged Buffer logging: level debugging, 15496
    messages logged Standard format: false
    Timestamp debug messages: datetime Timestamp
    log messages: datetime Sequence-number log
    messages: enable Sysname log messages: enable
    Count log messages: enable
    Trap logging: level informational, 15242 message lines logged,0 fail logging to   202.101.11.22
        logging to   192.168.200.112
Log Buffer (Total 131072 Bytes): have written 1336,
015487: *Sep 19 02:46:13: QTECH %LINK-3-UPDOWN: Interface FastEthernet 0/24, changed state
to up.
015488: *Sep 19 02:46:13: QTECH %LINEPROTO-5-UPDOWN: Line protocol on Interface
FastEthernet 0/24, changed state to up.
015489: *Sep 19 02:46:26: QTECH %LINK-3-UPDOWN: Interface FastEthernet 0/24, changed state
to down.
015490: *Sep 19 02:46:26: QTECH %LINEPROTON/A5N/AUPDOWN: Line protocol on Interface
```

FastEthernet 0/24, changed state to down.

015491: *Sep 19 02:46:28: QTECH %LINKN/A3N/AUPDOWN: Interface FastEthernet

0/24, changed state to up.

015492: *Sep 19 02:46:28: QTECH %LINEPROTO-5-UPDOWN: Line protocol on Interface

FastEthernet 0/24, changed state to up.

Log information description:

Field	Description
Syslog logging	Logging flag: enabled or disabled
Console logging	Level of the logs printed on the console, and statistics
Monitor logging	Level of the logs printed on the VTY window, and statistics
Buffer logging	Level of the logs recorded in the memory buffer, and statistics.
Standard format	Standard log format.
Timestamp debug messages	Timestamp format of the Debug messages
Timestamp log messages	Timestamp format of the Log messages
Sequence-number log messages	Serial number switch
Sequence log messages	Attaches system names to the logs.
Count log messages	Log statistics function
Trap logging	Level of the logs sent to the syslog server, and statistics

Log Buffer	Log files recorded in the memory buffer

The following example displays the result of the **show logging** command with RFC5424 format enabled.

```
QTECH# show logging Syslog logging: enabled

Console logging: level debugging, 4740 messages logged Monitor logging: level debugging, 0 messages logged Buffer logging: level debugging, 4745 messages logged Statistic log messages: disable

Statistic log messages to terminal: disable

Delay-send file name:syslog_ftp_server, Current write index:3, Current send index:3, Cycle:10 seconds

Count log messages: enable

Trap logging: level informational, 2641 message lines logged,4155 fail logging to   192.168.23.89

logging to   2000::1

Delay-send logging: 2641 message lines logged logging to 192.168.23.89 by tftp

Log Buffer (Total 4096 Bytes): have written 4096, Overwritten 3292

<135>1 2013-07-24T12:19:33.130290Z QTECH - 7 - - Please config the IP address for capwap.

<132>1 2013-07-24T12:20:02.80313Z QTECH CAPWAP 4 NO_IP_ADDR - No ip

address for capwap.

<135>1 2013-07-24T12:20:02.80343Z QTECH - 7 - - Please config the IP address for capwap.

<132>1 2013-07-24T12:20:32.250265Z QTECH CAPWAP 4 NO_IP_ADDR - No ip

address for capwap.
```

```
QTECH# show logging Syslog logging: enabled

Console logging: level debugging, 4740 messages logged Monitor logging: level
```

```
<134>1 2013-07-24T12:29:33.410123Z QTECH SYS 6 SHELL_LOGIN [USER@4881

name="" type="" from="console"] user login success.

<134>1 2013-07-24T12:29:34.343763Z QTECH SYS 6 SHELL_CMD
[USER@4881 name=""][CMD@4881 task="rl_con" cmd="enable"]
```

Field	Description
Syslog logging	Logging flag: enabled or disabled
Console logging	Level of the logs printed on the console, and statistics
Monitor logging	Level of the logs printed on the VTY window, and statistics

QTECH | www.qtech.ru
МИР ДОСТУПНЕЕ

Buffer logging	Level of the logs recorded in the memory buffer, and statistics.
Count log messages	Log statistics function
Statistic log messages	Enables/disables log sending periodically
Statistic log messages to terminal	Enables/ disables log sending to console and remote terminal
Delay-send file name	Local filename of log delay-sending cache, index of write file and delay interval
Trap logging	Level of the logs sent to the syslog server and statistics
Delay-send logging	The server address, log sending mode and statistics
Log Buffer	Log files recorded in the memory buffer

Related Commands

Command	Function
logging on	Turns on the log switch.
clear logging	Clears the log messages in the buffer.

Platform Description

N/A

8.42. show logging config

Use this command to display log configuration and statistics.

show logging config

Parameter Description

Parameter	Description
N/A	N/A

Defaults

N/A

Command Mode

Privileged EXEC mode

Usage Guide

N/A

Configuration Examples

The following example displays the outcome of running the **show logging config** command with RFC5424 disabled.

```
QTECH# show logging config Syslog logging: enabled

Console logging: level debugging, 15495 messages logged Monitor logging: level debugging,
0 messages logged Buffer logging: level debugging, 15496 messages logged Standard format:
false

Timestamp debug messages: datetime Timestamp log messages: datetime Sequence-number log
messages: enable Sysname log messages: enable

Count log messages: enable

Trap  logging:  level  informational,  15242  message  lines  logged,0  fail  logging  to
202.101.11.22

logging to   192.168.200.112
```

Field	Description
Syslog logging	Whether the logging function is enabled or disabled.
Console logging	The level and statistics of the log message printed on the console.
Monitor logging	The level and statistics of the log message printed on the VTY window.
Buffer logging	The level and statistics of the log message recorded in

	the memory buffer.
Standard format	Standard log format.
Timestamp debug messages	Timestamp format of debugging message.
Timestamp log messages	Timestamp format of log message.
Sequence-number log messages	Whether the sequence number function is enabled or disabled.
Sysname log messages	Adds the system name to the log message.
Count log messages	Log-counting function
Trap logging	The level and statistics of the log message sent to the syslog server.

The following example displays the outcome of running the **show logging config** command with RFC5424 enabled.

```
QTECH# show logging Syslog logging: enabled

Console logging: level debugging, 4740 messages logged Monitor logging: level debugging,
0 messages logged Buffer logging: level debugging, 4745 messages logged Statistic log
messages: disable

Statistic log messages to terminal: disable
```

```
Delay-send file name:syslog_ftp_server, Current write index:3, Current send index:3,
Cycle:10 seconds

Count log messages: enable

Trap logging: level informational, 2641 message lines logged,4155 fail logging to
192.168.23.89

logging to 2000::1

Delay-send logging: 2641 message lines logged

logging to   192.168.23.89by tftp
```

Field	Description
Syslog logging	Logging flag: enabled or disabled
Console logging	Level of the logs printed on the console, and statistics

Monitor logging	Level of the logs printed on the VTY window, and statistics
Buffer logging	Level of the logs recorded in the memory buffer, and statistics.
Count log messages	Log statistics function
Statistic log messages	Enables/disables log sending periodically
Statistic log messages to terminal	Enables/ disables log sending to output console and remove terminal
Delay-send file name	Local filename of log delay-sending cache, index of write file and delay interval
Trap logging	Level of the logs sent to the syslog server and statistics
Delay-send logging	The server address, log sending way and statistics

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

8.43. show logging count

Use this command to display the statistics about occurrence times, and the last occurrence time of each module log in the system in privileged mode.

show logging count

Parameter Description

Parameter	Description
N/A	N/A

Defaults

N/A

 Command Mode

Privileged EXEC mode

Usage Guide

To use the log packet statistics function, run the **logging count** command in

global configuration mode. The **show logging count** command can show the

information of a specific log, occurrence times, and the last occurrence time.

You can use the **show logging** command to check whether the log statistics function is
enabled.

Configuration Examples

The following example displays the result of the **show logging count** command:

```
QTECH# show logging count
 Module Name Message Name Sev Occur  Last Time
SYS       CONFIG  5  1        Jul 6 10:29:57
SYS TOTAL
```

Related Commands

Command	Function
logging count	Enables the log statistics function.
show logging	Displays basic configuration of log modules and log information in the buffer.
clear logging	Clears the logs in the buffer.

 Platform Description

N/A

8.44. show logging reverse

Use this command to display configured parameters and statistics of logs and log messages in the memory buffer at privileged user layer. The log messages are sorted by the timestamp from now to before.

show logging reverse

Parameter Description

Parameter	Description
N/A	N/A

Defaults

N/A

Command Mode

Privileged EXEC mode

Usage Guide

Configuration Examples

The following command displays the result of the **show logging reverse** command with RFC5424 format disabled.

```
QTECH# show logging reverse Syslog logging: enabled

Console logging: level debugging, 15495 messages logged Monitor logging: level debugging,
0 messages logged Buffer logging: level debugging, 15496 messages logged Standard format:
false

Timestamp debug messages: datetime Timestamp log messages: datetime Sequence-number log
messages: enable Sysname log messages: enable

Count log messages: enable

Trap  logging:  level  informational,  15242  message  lines  logged,0  fail  logging  to
202.101.11.22
```

```
QTECH# show logging reverse Syslog logging: enabled

Console logging: level debugging, 15495 messages logged Monitor logging: level debugging,
0 messages logged Buffer logging: level debugging, 15496 messages logged Standard format:
false

Timestamp debug messages: datetime Timestamp log messages: datetime Sequence-number log
messages: enable Sysname log messages: enable

Count log messages: enable

Trap  logging:  level  informational,  15242  message  lines  logged,0  fail  logging  to
```

```
202.101.11.22

logging to 192.168.200.112

Log Buffer (Total 131072 Bytes): have written 1336,

015492: *Sep 19 02:46:28: QTECH %LINEPROTO-5-UPDOWN: Line protocol on Interface
FastEthernet 0/24, changed state to up.

015491: *Sep 19 02:46:28: QTECH %LINK-3-UPDOWN: Interface FastEthernet 0/24, changed
state to up.

015490: *Sep 19 02:46:26: QTECH %LINEPROTO-5-UPDOWN: Line protocol on Interface
FastEthernet 0/24, changed state to down.

015489: *Sep 19 02:46:26: QTECH %LINK-3-UPDOWN: Interface FastEthernet 0/24, changed
state to down.

015488: *Sep 19 02:46:13: QTECH %LINEPROTO-5-UPDOWN: Line protocol on Interface
FastEthernet 0/24, changed state to up.

015487: *Sep 19 02:46:13: QTECH %LINK-3-UPDOWN: Interface FastEthernet 0/24, changed
state to up.
```

Field	Description
Syslog logging	Logging flag: enabled or disabled
Console logging	Level of the logs printed on the console, and statistics
Monitor logging	Level of the logs printed on the VTY window, and statistics
Buffer logging	Level of the logs recorded in the memory buffer, and statistics.
Standard format	Standard log format.
Timestamp debug messages	Timestamp format of the Debug messages
Timestamp log messages	Timestamp format of the Log messages
Sequence-number log messages	Serial number switch

www.qtech.ru

Sequence log messages	Attaches system names to the logs.
Count log messages	Log statistics function
Trap logging	Level of the logs sent to the syslog server, and statistics
Log Buffer	Log files recorded in the memory buffer

The following example displays the result of the **show logging reverse**

command with RFC5424 format enabled.

```
QTECH# show logging reverse Syslog logging: enabled
Console logging: level debugging, 4740 messages logged Monitor logging: level debugging,
0 messages logged Buffer logging: level debugging, 4745 messages logged Statistic log
messages: disable
Statistic log messages to terminal: disable
Delay-send file name:syslog_ftp_server, Current write index:3, Current send index:3,
Cycle:10 seconds
Count log messages: enable
Trap logging: level informational, 2641 message lines logged,4155 fail logging to
192.168.23.89
logging to  2000::1
Delay-send logging: 2641 message lines logged logging to 192.168.23.89 by tftp
Log Buffer (Total 4096 Bytes): have written 4096, Overwritten 3292
<134>1 2013-07-24T12:29:34.343763Z QTECH SYS 6 SHELL_CMD [USER@4881
name=""][CMD@4881 task="rl_con" cmd="enable"]
<134>1 2013-07-24T12:29:33.410123Z QTECH SYS 6 SHELL_LOGIN [USER@4881
name="" type="" from="console"] user login success.
<132>1 2013-07-24T12:20:32.250265Z QTECH CAPWAP 4 NO_IP_ADDR - No ip
address for capwap.
<135>1 2013-07-24T12:20:02.80343Z QTECH - 7 - - Please config the IP address for capwap.
<132>1 2013-07-24T12:20:02.80313Z QTECH CAPWAP 4 NO_IP_ADDR - No ip
address for capwap.
<135>1 2013-07-24T12:19:33.130290Z QTECH - 7 - -
 Please config the IP address for capwap.
```

Field	Description
Syslog logging	Logging flag: enabled or disabled
Console logging	Level of the logs printed on the console, and statistics
Monitor logging	Level of the logs printed on the VTY window, and statistics
Buffer logging	Level of the logs recorded in the memory buffer, and statistics.
Count log messages	Log statistics function
Statistic log messages	Enables/disables log sending periodically
Statistic log messages to terminal	Enables/ disables log sending to console and remote terminal
Delay-send file name	Local filename of log delay-sending cache, index of write file and delay interval
Trap logging	Level of the logs sent to the syslog server and statistics
Delay-send logging	The server address, log sending mode and statistics
Log Buffer	Log files recorded in the memory buffer

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

8.45. terminal monitor

Use this command to show logs on the current VTY window. Use the **no** form of this command to restore the default setting.

terminal monitor
terminal no monitor

Parameter Description

Parameter	Description
N/A	N/A

Defaults

Log information is not allowed to be displayed on the VTY window by default.

Command Mode

Privileged EXEC mode

Usage Guide

This command only sets the temporary attributes of the current VTY. As the temporary attribute, it is not stored permanently. At the end of the VTY terminal session, the system will use the default setting, and the temporary setting is invalid. This command can be also executed on the console, but it does not take effect.

Configuration Examples

The following example allows log information to be printed on the current VTY window:

QTECH# **terminal monitor**

Command	Description
N/A	N/A

Related Commands

Platform Description

Command History

Version	Description
N/A	N/A

N/A

9.1. acs password

Use this command to configure the ACS password to be authenticated for the CPE to connect to the ACS. Use the **no** form of this command to cancel the configuration.

acs password { *password* | *encryption-type encrypted-password* }

no acs password

Parameter Description

Parameter	Description
password	Configures the ACS user password to be authenticated for the CPE to connect to the ACS.
encryption-type	Specifies the encryption type, which can be set to 0 (indicating that no encryption is used) or 7 (indicating that simple encryption is used).
encrypted-password	Specifies the password in encrypted form.

Defaults

encryption-type: 0 encrypted-password: N/A

Command Mode

CWMP configuration mode

Usage Guide

Use this command to configure the ACS user password to be authenticated for the CPE to connect to the ACS. In general, the encryption type does not need to be specified. The encryption type needs to be specified only when copying and pasting the encrypted password of this command. A valid password should meet the following format requirements:

The command contains English letters in upper or lower case and numeric characters.

QTECH
МИР ДОСТУПНЕЕ

www.qtech.ru

Blanks are allowed at the beginning of the password but will be ignored. Intermediate and ending blanks, however, are regarded as a part of the password.

Configuration Examples

The following example configures the ACS password to be authenticated for the CPE to connect to the ACS to 123.

```
QTECH#config terminal
Enter configuration commands, one per line. End with CNTL/Z. QTECH(config)#cwmp
QTECH(config-cwmp)#acs password 123
QTECH(config-cwmp)#
```

Related Commands

Command	Description
show cwmp configuration	Displays the current configuration of CWMP.
show cwmp status	Displays the running status of CWMP.
acs username	Configures the ACS username to be authenticated for the CPE to connect to the ACS.

Platform Description

N/A

9.2. acs url

Use this command to configure the URL of the ACS to which the CPE will connect. Use the **no** form of this command to restore the default setting.
acs url *url*
no acs url

Parameter Description

Parameter	Description
url	Specifies the URL of the ACS.

Defaults

N/A

Command Mode

CWMP configuration mode

Usage Guide

Use this command to configure the URL of the ACS to which the CPE will connect. If no ACS URL is manually specified but a dynamic ACS URL is obtained through DHCP, the CPE initiates a connection to the ACS using the dynamically obtained ACS URL. The URL of the ACS should meet the following format requirements:

- The URL of the ACS is formatted as http://ip [: port]/ path.
- The URL of the ACS consists of at most 255 characters.

Configuration Examples

The following example specifies the URL of the ACS to http://10.10.10.1: 7547/acs.

```
QTECH#configure terminal
Enter configuration commands, one per line. End with CNTL/Z. QTECH(config)#cwmp
QTECH(config-cwmp)#acs url http://10.10.10.1:7547/acs QTECH(config-cwmp)#
```

Related Commands

Command	Description
show cwmp configuration	Displays the current configuration of CWMP.
show cwmp status	Displays the running status of CWMP.

Platform Description

N/A

9.3. acs username

Use this command to configure the ACS username to be authenticated for the

CPE to connect to the ACS. Use the **no** form of this command to restore the

default setting.

acs username *username*

no acs username

Parameter Description

Parameter	Description
username	Configures the ACS username to be authenticated for the CPE to connect to the ACS.

Defaults
N/A

Command Mode

CWMP configuration mode

Usage Guide

Configures the ACS username to be authenticated for the CPE to connect to the ACS.

Configuration Examples

The following example configures the ACS username to be authenticated for

the CPE to connect to the ACS to admin.

```
QTECH#config terminal
Enter configuration commands, one per line. End with CNTL/Z. QTECH(config)#cwmp
QTECH(config-cwmp)#acs username admin
QTECH(config-cwmp)#
```

Related Commands

Command	Description

show cwmp configuration	Displays the current configuration of CWMP.
show cwmp status	Displays the running status of CWMP.
acs password	Configures the ACS password to be authenticated for the CPE to connect to the ACS.

Platform Description

N/A

9.4. cpe back-up

Use this command to enable the CPE backup function.

Use the **no** form of this command to restore the default setting.

cpe back-up [**delay-time** *seconds*]

no cpe back-up

Parameter Description

Parameter	Description
seconds	Sets the backup delay time.

Defaults
The default is 60 seconds.

Command Mode

CWMP configuration mode

Usage Guide

After updrading main programs or configurations, CPE cannot communicate with ACS for wrong configuration delivery. Use this command to recover the previous programs and configurations.

Configuration Examples

The following example disables the CPE backup function.

```
QTECH#config terminal
Enter configuration commands, one per line. End with CNTL/Z. QTECH(config)#cwmp
QTECH(config-cwmp)#no cpe back-up
QTECH(config-cwmp)#
```

Platform Description

 N/A

9.5. cpe inform

Use this command to configure the periodic notification function of the CPE.

Use the **no** form of this command to restore the default setting

cpe inform [**interval** *seconds*] [**start-time** *time*]

no cpe inform

Parameter Description

Parameter	Description
seconds	Specifies the periodical notification interval of the CPE in the range from 30 to 3,600 in the unit of seconds.
time	Specifies the date and time for starting periodical notification in yyyy- mm-ddThh:mm:ss format.

Defaults

The default is 600 seconds.

Command Mode

 CWMP configuration mode

Usage Guide

Use this command to configure the periodic notification function of the CPE.

- ▪ If the time for starting periodical notification is not specified, periodical notification starts after the periodical notification function is enabled. The notification is performed once within every notification interval.
- ▪ If the time for starting periodical notification is specified, periodical notification starts at the specified start time. For instance, if the periodical notification interval is set to 60 seconds and the start time is 12:00 am next day, periodical notification will start at 12:00 am next day and once every 60 seconds.
- ▪ The narrower periodical notification interval allows the ACS to track the latest CPE status more accurately. However, narrower periodical notification interval brings about more sessions
- ▪ between the CPE and the ACS, consuming more resources of them. So the user should specify the periodical notification interval of the CPE to a reasonable value according to the network performance and the ACS performance.

Configuration Examples

The following example specifies the periodical notification interval of the CPE to 60 seconds.

```
QTECH#config terminal
Enter configuration commands, one per line. End with CNTL/Z. QTECH(config)#cwmp
QTECH(config-cwmp)#cpe inform interval 60
QTECH(config-cwmp)#
```

Related Commands

Command	Description
show cwmp configuration	Displays the current configuration of CWMP.
show cwmp status	Displays the running status of CWMP.

Platform Description

N/A

9.6. cpe password

Use this command to configure the CPE password to be authenticated for the

ACS to connect to the CPE. Use the **no** form of this command to cancel the

configuration.

cpe password { *password* | *encryption-type encrypted-password* }

no cpe password

Parameter Description

Parameter	Description
password	Configures the CPE user password to be authenticated for the ACS to connect to the CPE.
encryption-type	Specifies the encryption type, which can be set to 0 (indicating that no encryption is used) or 7 (indicating that simple encryption is used).
encrypted-password	Specifies the password in encrypted form.

Defaults

encryption-type: 0 encrypted-password: N/A

Command Mode

CWMP configuration mode

Usage Guide

Use this command to configure the CPE user password to be authenticated for the ACS to connect to the CPE. In general, the encryption type does not need to be specified. The encryption type needs to be specified only when copying and pasting the encrypted password of this command. A valid password should meet the following format requirements:

- The command contains English letters and numeric characters.
- Blanks are allowed at the beginning of the password but will be ignored. Intermediate and ending blanks, however, are regarded as a part of the password.

Configuration Examples

The following example configures the CPE password to be authenticated for the ACS to connect to the CPE to 123.

```
QTECH#config terminal
Enter configuration commands, one per line. End with CNTL/Z. QTECH(config)#cwmp
QTECH(config-cwmp)#cpe password 123
QTECH(config-cwmp)#
```

Related Commands

Command	Description
show cwmp configuration	Displays the current configuration of CWMP.
show cwmp status	Displays the running status of CWMP.
acs username	Configures the CPE username to be authenticated for the ACS to connect to the CPE.

Platform Description

N/A

9.7. cpe url

Use this command to configure the URL of the CPE to which the ACS will connect. Use the **no** form of this command to restore default setting.

cpe url *url*
no cpe url

Parameter Description

Parameter	Description
url	Specifies the URL of the CPE.

Defaults
N/A

Command Mode

CWMP configuration mode

Usage Guide

Use this command to configure the URL of the CPE to which the ACS will connect. If no CPE URL is manually specified but a dynamic CPE URL is obtained through DHCP, the ACS initiates a connection to the CPE using the dynamically obtained CPE URL. The URL of the CPE should meet the following format requirements:

- The URL of the CPE is formatted as http://ip [: port]/ path.
- The URL of the CPE consists of at most 255 characters.

Configuration Examples

The following example specifies the URL of the CPE to http://10.10.10.1:7547/acs.

```
QTECH#configure terminal
Enter configuration commands, one per line. End with CNTL/Z. QTECH(config)#cwmp
QTECH(config-cwmp)#cpe url Hhttp://10.10.10.1:7547/ QTECH(config-cwmp)#
```

Related Commands

Command	Description
show cwmp configuration	Displays the current configuration of CWMP.
show cwmp status	Displays the running status of CWMP.

Platform Description

N/A

9.8. cpe username

Use this command to configure the ACS username to be authenticated for the CPE to connect to the ACS.

Use the **no** form of this command to restore the default setting.

cpe username *username*

no cpe username

Parameter Description

Parameter	Description
username	Configures the CPE username to be authenticated for the ACS to connect to the CPE.

Defaults

N/A

Command Mode

CWMP configuration mode

Usage Guide

Configures the CPE username to be authenticated for the ACS to connect to the CPE.

Configuration Examples

The following example configures the CPE username to be authenticated for the ACS to connect to the CPE to admin.

```
QTECH#config terminal
Enter configuration commands, one per line. End with CNTL/Z. QTECH(config)#cwmp
QTECH(config-cwmp)#cpe username admin
QTECH(config-cwmp)#
```

Related Commands

Command	Description
show cwmp configuration	Displays the current configuration of CWMP.
show cwmp status	Displays the running status of CWMP.
cpe password	Configures the CPE password to be authenticated for the ACS to connect to the CPE.

Platform Description

N/A

QTECH | www.qtech.ru
МИР ДОСТУПНЕЕ

9.9. cwmp

Parameter Description

Defaults

Command Mode

 Use this command to enable the CWMP function.

Use the **no** form of this command to disable this function.

cwmp no

cwmp

Parameter	Description
N/A	N/A

Global configuration mode

Usage Guide

Use this command to enable or disable the CWMP function.

 Configuration Examples

 The following example disables the CWMP function.

```
QTECH#config terminal
Enter configuration commands, one per line. End with CNTL/Z. QTECH(config)#no cwmp
QTECH(config)#
```

Related Commands

Command	Description
show cwmp configuration	Displays the current configuration of CWMP.
show cwmp status	Displays the running status of CWMP.

Platform Description

N/A

9.10. disable download

Use this command to disable the function of downloading main program and configuration files from the ACS. Use the **no** form of this command to restore the default setting.

disable download

no disable download

Parameter Description

Parameter	Description
N/A	N/A

Defaults

By default, the CPE can download main program and configuration files from the ACS.

Command Mode

CWMP configuration mode

Usage Guide

N/A

Configuration Examples

The following example disables the function of downloading main program and configuration files from the ACS.

```
QTECH#config terminal
Enter configuration commands, one per line. End with CNTL/Z. QTECH(config)#cwmp
QTECH(config-cwmp)#disable download
QTECH(config-cwmp)#
```

Related Commands

Command	Description
show cwmp configuration	Displays the current configuration of CWMP.
show cwmp status	Displays the running status of

	CWMP.

Platform Description

N/A

9.11. disable upload

Use this command to disable the function of uploading configuration and log files to the ACS. Use the **no** form of this command to restore the default setting.

disable upload

no disable upload

Parameter Description

Parameter	Description
N/A	N/A

Defaults

By default, the CPE can upload its configuration and log files to the ACS.

Command Mode

CWMP configuration mode

Usage Guide

Disables the function of uploading configuration and log files to the ACS.

Configuration Examples

The following example disables the function of uploading configuration and log file to the ACS.

QTECH#config terminal

```
Enter configuration commands, one per line. End with CNTL/Z. QTECH(config)#cwmp
QTECH(config-cwmp)#disable upload
QTECH(config-cwmp)#
```

Related Commands

Command	Description
show cwmp configuration	Displays the current configuration of CWMP.
show cwmp status	Displays the running status of CWMP.

Platform Description

N/A

9.12. show cwmp configuration

Use this command to display the current configuration of CWMP.

show cwmp configuration

Parameter Description

Parameter	Description
N/A	N/A

Defaults

N/A

Command Mode

Privilege EXEC mode

Usage Guide

Configuration Examples

The following example displays the current configuration of CWMP.

```
QTECH(config-cwmp)#show cwmp configuration CWMP Status    : enable
ACS URL      : http://www.QTECH.com.cn/acs
ACS username : admin
ACS password : ******
CPE URL      : http://10.10.10.2:7547/
CPE username : QTECH
CPE password : ******
CPE inform status   : disable
```

```
CPE inform interval : 60s

CPE inform start time     : 0:0:0 0 0 0

CPE wait timeout    : 50s

CPE download status : enable

CPE upload status         enable

CPE back up status        enable

CPE back up delay time        60s
```

Related Commands

Platform Description

 The descriptions to the fields shown after executing the command **show cwmp configuration**.

Field	Description
CWMP Status	Running status of CWMP.
ACS URL	URL of the ACS.
ACS username	ACS username to be authenticated for the CPE to connect to the ACS.
ACS password	ACS password to be authenticated for the CPE to connect to the ACS.
CPE URL	URL of the CPE.
CPE username	CPE username to be authenticated for the ACS to connect to the CPE.
CPE pass ord	CPE password to be authenticated for the ACS to connect to the CPE.
CPE inform status	Status of CPE periodical notification function.
CPE inform interval	CPE periodical notification interval.
CPE wait timeout	Timeout period of CPE sessions.

QTECH
МИР ДОСТУПНЕЕ
www.qtech.ru

CPE inform start time	The start time of periodical notification.
CPE download status	Indicates whether to download main program and configuration files from the ACS.
CPE upload status	Indicates whether to upload configuration files and log files to the ACS.
CPE back up status	Indicates whether backup and restoration of the main program and configuration file is enabled.
CPE back up delay time	Delay time of the backup and restoration of the main program and configuration files.

Command	Description
show cwmp status	Displays the running status of CWMP.

N/A

9.13. show cwmp status

Uses this command to display the running status of CWMP

show cwmp status

Parameter Description

Parameter	Description
N/A	N/A

Defaults

N/A

Command Mode

Privileged EXEC mode

Usage Guide

N/A

Configuration Examples

The following example displays the running status of CWMP.

```
QTECH#show cwmp status
CWMP Status  : enable
Session status     : Close
Last success session     : Unknown
Last success session time        : Thu Jan 1 00:00:00 1970 Last fail session   : Unknown
Last fail session time    : Thu Jan 1 00:00:00 1970
Session retry times : 0
```

Related Commands

Platform Description

 The descriptions to the fields shown after executing the command **show cwmp configuration**.

Field	Description
CWMP Status	The running status of CWMP
Session status	The current status of the session between the CPE and the ACS
Last success session	The last success session type
Last success session time	The last success session time
Last fail session	The last failed session type
Last fail session time	The last failed session time
Session retry times	The number of session retransmission attempts

Command	Description
show cwmp configuration	Displays the current configuration of CWMP.

N/A

9.14. timer cpe-timeout

Uses this command to configure the session timeout period of the CPE.

timer cpe- timeout *seconds*

no timer cpe-timeout

Parameter Description

Parameter	Description
seconds	Sets the session timeout, in the range from 10 to 600 in the unit of seconds.

Defaults

By default, the session timeout period is 30 seconds.

Command Mode

CWMP configuration mode

Usage Guide

Use this command to configure the session timeout period of the CPE.

The maximum waiting period that the CPE has when the CPE failed to receive the ACS reply.

Configuration Examples

The following example configures the session timeout period of the CPE to 50 seconds.

```
QTECH#config terminal
Enter configuration commands, one per line. End with CNTL/Z. QTECH(config)#cwmp
QTECH(config-cwmp)#timer cpe-timeout 50
QTECH(config-cwmp)#
```

Related Commands

QTECH
МИР ДОСТУПНЕЕ   www.qtech.ru

Command	Description
show cwmp configuration	Displays the current configuration of CWMP.
show cwmp status	Displays the running status of CWMP.

Platform Description

N/A

10. MODULE HOT-PLUGGING/ UNPLUGGING COMMANDS

10.1. remove configuration module slot-num

Use this command to remove the module configurations.

remove configuration module *slot-num*

Parameter Description

Parameter	Description
slot-num	Slot number.

Defaults
N/A

Command Mode

Global configuration mode.

Usage Guide

Use this command to remove the module configurations. This command is invalid for modue in on- line status. If there is a module inserted in the slot, this module will be reset.

Configuration Examples

Related Commands

Platform Description

The following example clears the configuration on slot 4.

QTECH(config)# remove configure module *4*

Command	Description
N/A	N/A

QTECH
МИР ДОСТУПНЕЕ   www.qtech.ru

N/A

10.2. remove configuration device device-id

Use this command to remove the configuration on a VSU device, which validates in VSU mode after restart.

remove configuration device *device-id*

Parameter Description

Parameter	Description
device-id	The chassis number.

Defaults

N/A

Command Mode

Global configuration mode

Usage Guide

This command is used to remove the configuration on a VSU device. It validates after the device is restarted.

Configuration Examples

Related Commands

Platform Description

The following example clears the configuration on device 1.

QTECH(config)# remove **configuration** device 1

Command	Description
N/A	N/A

N/A

10.3. show alarm

Use this command to display system alarm messages, concerning card startup failure, temperature, power, and fan alarms.

show alarm

Parameter Description

Parameter	Description
N/A	N/A

Defaults
N/A

Command Mode

Privileged EXEC mode

Usage Guide

N/A

Configuration Examples

The following example displays system alarm messages.

QTECH#show alarm Dev Module			
	Level	Info	
1 DEV	Warning	Some fans are absent.	

1 DEV Critical Some cards are in cannot-startup state.	
Field	**Description**
Dev	Device ID

Module	Service module
Level	Alarm level, including Critical and Warning
Info	Alarm cause, such as system power shortage fan absence and card startup failure

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

10.4. show manuinfo

Use this command to display asset information about all independent components in the system for asset management, including the chassis, fan, power, management board, and line card. The information covers the ID, slot number, name, serial number (SN), software and hardware version, and MAC address. Not all devices support display of the same information and only supported information is printed.

show manuinfo

Parameter Description

Parameter	Description
N/A	N/A

N/A

Command Mode

Privileged EXEC mode

Usage Guide

This command is used to display asset information about all independent components in the system

Configuration Examples

The following example displays asset information of the single physical device.

```
QTECH#show manuinfo Device 1
    Location:               Chassis
    Device name:            RG S12006
    Device Serial Number:   62150129A8B0DAF0F032
  Hardware Version:         V1.0
```

Mac Address:	00.D0.F8.00.11.22

Device 2
  Location:
  Device name:
  Device Serial Number: Hardware Version:
  Software Version:
  Mac Address:
	Slot-M1 M12000 CM
	  32150129A8B0DAF0F0321 V1.0
	 RGOS 10.4(3b17) Release 129646
	 00.D0.F8.00.11.34

Device 3
  Location:
  Device name:
  Device Serial Number: Hardware Version:
  Software Version:
	Slot-1
	 M12000-04XFP-EA 32150129A8B0DAF0F0322
	 V1.0
	 RGOS 10.4(3b17) Release 129646

Device 4
  Location:
  Device name:
  Device Serial Number: Hardware Version:
  Software Version:
	Slot-2
	 M12000-04XFP-EA 32150129A8B0DAF0F0323
	 V1.0
	 RGOS 10.4(3b17) Release 129646

Device 5
  Location:
  Device name:
  Device Serial Number: Hardware Version:
	Power 1
	 RG PD1200I 42150129A8B0DAF0F0321 V1.0

Device 6
  Location:
  Device name:
  Device Serial Number: Hardware Version:
	Power 2
	 RG PD1200I 42150129A8B0DAF0F0322 V1.0

Device 7
  Location:
  Device name:
  Device Serial Number:
   Hardware Version:
	FAN
	 M12000 FAN 52150129A8B0DAF0F0321
	      V1.0

The following example displays asset information in VSU mode.

```
QTECH#show manuinfo
Device 1
Location:    Chassis 1
Device name: RG S12006
Device Serial Number:          62150129A8B0DAF0F0321 Hardware Version: V1.0
Mac Address: 00.D0.F8.00.11.22


Device 2
Location:    Slot-1/M1
Device name: M12000 CM
Device Serial Number:          32150129A8B0DAF0F0321 Hardware Version: V1.0
Software Version:      RGOS 10.4(3b17) Release 129646 Mac Address:    00.D0.F8.00.11.56


Device 3
Location:    Slot-1/1
Device name: M12000-04XFP-EA
Device Serial Number:          32150129A8B0DAF0F0322
Hardware Version:   V1.0
Software Version:   RGOS 10.4(3b17) Release 129646
Hardware Version:   V1.0
Software Version:   RGOS 10.4(3b17) Release 129646


Device 4
Location:    Slot-1/2
Device name: M12000-04XFP-EA
Device Serial Number:          32150129A8B0DAF0F0323 Hardware Version: V1.0
Software Version:   RGOS 10.4(3b17) Release 129646


Device 5
Location:    Power 1/1
Device name: RG PD1200I
Device Serial Number:          42150129A8B0DAF0F0321 Hardware Version: V1.0


Device 6
Location:    Power 1/2
Device name: RG PD1200I
Device Serial Number:          42150129A8B0DAF0F0322 Hardware Version: V1.0


Device 7
Location:    FAN 1
Device name: M12000 FAN
Device Serial Number:      52150129A8B0DAF0F0322
```

```
 Hardware Version:  V1.0


Device 8
Location:    Chassis 2
Device name: RG S12006
Device Serial Number:         62150129A8B0DAF0F0322 Hardware Version: V1.0
Software Version:       RGOS 10.4(3b17) Release 129646 Mac Address:   00.D0.F8.00.11.33


Device 9
Location:    Slot-2/M1
Device name: M12000 CM
Device Serial Number:         32150129A8B0DAF0F0324 Hardware Version: V1.0
Software Version:       RGOS 10.4(3b17) Release 129646 Mac Address:   00.D0.F8.00.11.22


Device 10
Location:    Slot-2/1
Device name: M12000-04XFP-EA
Device Serial Number:         32150129A8B0DAF0F0325 Hardware Version: V1.0
Software Version:   RGOS 10.4(3b17) Release 129646


Device 11
Location:    Slot-2/2
Device name: M12000-04XFP-EA
Device Serial Number:         32150129A8B0DAF0F0326 Hardware Version: V1.0
Software Version:   RGOS 10.4(3b17) Release 129646


Device 12
Location:    Power 2/1
Device name: RG PD1200I
Device Serial Number:         42150129A8B0DAF0F0323 Hardware Version: V1.0


Device 13
Location:    Power 2/2
Device name: RG PD1200I
Device Serial Number:         42150129A8B0DAF0F0324 Hardware Version: V1.0


Device 14
Location:                 FAN 2
Device name:             M12000 FAN
Device Serial Number:    52150129A8B0DAF0F0322
Hardware Version:     V1.0
```

Related Commands

QTECH
МИР ДОСТУПНЕЕ | www.qtech.ru

Command	Description
N/A	N/A

Platform Description

N/A

10.5. show sysmac

Use this command to display the MAC address of the current system.
show sysmac

Parameter Description

Parameter	Description
N/A	N/A

Defaults
N/A

Command Mode

Privileged EXEC mode.

Usage Guide

N/A

Configuration Examples

The following example displays the MAC address of the current system.

```
QTECH#show sysmac
00d0.f822.33e2
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

10.6. show version module detail

Use this command to display the details of the module.

show version module detail [*slot-num*]

show version module detail [*device-id / slot-num*]

Parameter Description

Parameter	Description
device-id	(Optional) Device ID.
slot-num	(Optional) Slot ID.

Defaults
N/A

Command Mode

Privileged EXEC mode.

Usage Guide

Use this command to display details of the module

Configuration Examples

```
QTECH# show version module detail 2 Device : 1
Slot   : 2
User Status : none Software Status: none Online Module :
Type  :
Ports  : 0 Version :
Configured Module : Type  :
Ports  : Version :
QTECH#
```

Related Commands

Command	Description

show version slots	Displays slot details.

Platform Description

N/A

10.7. show version slots

Use this command to display the details of the slot.

show version slots [*slot-num*]

show version slots [*device-id* / *slot-num*]

Parameter Description

Parameter	Description
slot-num	(Optional) Slot number.
device-id	(Optional) Device ID.

Defaults
N/A

Command Mode

Privileged EXEC mode.

Usage Guide
N/A

Configuration Examples

```
QTECH# show version slots
Dev Slot Port Configured Module Online Module Software Status

1    0    32    S5750C-28GT4XS-H    S5750C-28GT4XS-H    master
```

Related Commands

Command	Description

show version moduel detail	Displays the details of the module.

Platform Description

N/A

11.

11.1. auto-sync time-period

Use this command to configure the auto-sync time-period of runing-config and startup-config when the dual supervisor module is redundant. Use the **no** form of this command to disable automatic synchronization for the dual supervisor modules. Use the **default** form of this command to restore the default automatic synchronization time period for the dual supervisor modules.

auto-sync time-period

value **no auto-sync time-**

period default auto-sync

time-period

Parameter Description

Parameter	Description
value	Automatic synchronization time interval measured in seconds, in the range from one second to one month (2,678,400 seconds).

Defaults
The default is one hour (3600 seconds) by default.

Command Mode

Redundancy configuration mode

Usage Guide
N/A

Configuration Examples

The following example sets the automatic synchronization interval to 60 seconds.

```
QTECH(config)# redundancy
QTECH(config-red)# auto-sync time-period 60  Redundancy auto-sync time-period: enabled
(60 seconds). QTECH(config-red)# exit
```

The following example disables automatic synchronization.

```
QTECH(config)# redundancy

QTECH(config-red)# no auto-sync time-period Redundancy auto-sync time-period: disabled.
QTECH(config-red)# exit
```

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

11.2. redundancy

Use this command to enter redundancy configuration mode.

redundancy

Parameter Description

Parameter	Description
N/A	N/A

Defaults
N/A

Command Mode

Global configuration mode

Usage Guide

N/A

Configuration Examples

The following example enters redundancy configuration mode.

```
QTECH# config terminal

QTECH(config)# redundancy QTECH(config-red)# exit
```

Related Commands

Command	Description

N/A	N/A

Platform Description

N/A

11.3. redundancy forceswitch

Use this command to perform active/standby supervisor module switchover.

redundancy forceswitch

Parameter Description

Parameter	Description
N/A	N/A

Defaults
N/A

Command Mode

11.4. Privileged EXEC mode

Usage Guide

If this command is executed on the active supervisor module, the module

will be reset and the standby supervisor module will act as an active

supervisor module.

The following conditions are required to perform hot backup switchover:
- This command is executed on the active supervisor module. There is a standby supervisor module.
- Hot backups on all virtual switch devices (VSDs) are in real-time status.
- Hot backup switchovers on VSDs are not prevented temporarily by any service entity.

When there are multiple VSDs, the system judges whether the hot backup on

each VSD allows active/standby switchover; If any VSD does not allow the

switchover, the command fails. Otherwise, active/standby switchovers are

enforced on all VSDs.

Configuration Examples

The following example performs active/standby supervisor module switchover.

```
QTECH# redundancy forceswitch
This operation will reload the master unit and force switchover to the slave unit. Are
you sure to continue? [N/y] y
```

Related Commands

Command	Description
reload	Resets the active supervisor module.

Platform Description

N/A

11.5. redundancy reload

Use this command to reset the supervisor module.

redundancy reload { **peer** | **shelf** [*switchid*] }

Parameter Description

Parameter	Description
peer	Resets the standby supervisor module.
shelf	Resets both the active and standby supervisor modules on the device which works as a single physical device. The device ID should be specified on the device which works as a Virtual Switching Unit (VSU) device.
switchid	VSU device ID, supported on a VSU device. This parameter is not supported in stand-alone mode. It must be contained in the

	redundancy reload shelf command in VSU mode.

Defaults

N/A

Command Mode

Privileged EXEC mode

Usage Guide

Resetting the supervisor module does not affect data forwarding. Data forwarding will not be interrupted and the user session information will not be missing.

The **redundancy reload shelf** command is used to reset the device which works as a single physical device. The **redundancy reload shelf** *switchid* command is used to reset the specified device which works as a VSU device.

Configuration Examples

The following example resets the standby supervisor module.

```
QTECH# redundancy reload peer
This operation will reload the current slave unit. Are you sure to continue? [N/y] y
Preparing to reload peer!
```

The following example resets device 2 which works as a VSU device.

```
QTECH# redundancy reload shelf 2
This operation will reload the device 2. Are you sure to continue? [N/y] y
Preparing to reload device 2!
```

Related Commands

Command	Description

N/A	N/A

Platform Description

N/A

11.6. show redundancy states

Use this command to display the current redundancy state.

show redundancy states

Parameter Description

Parameter	Description
-	-

Defaults
N/A

Command Mode

User EXEC mode / Privileged EXEC mode

Usage Guide

Currently, only 1:1 hot backup (for the global active module and standby

module) is supported in the VSU mode. Therefore, only the hot backup state of

the local and peer device is displayed.

If the system is configured with multiple VSDs, the hot backup state of all VSDs

is displayed in VSD 0 in global configuration mode.

Configuration Examples

The following example displays the redundancy states of active supervisor module.

```
QTECH> enable
QTECH# show redundancy states Redundancy role: master Redundancy state: realtime Auto-
sync time-period: 3600 s


Redundancy management role: master Redundancy control role: active Redundancy control state: realtime
```

The following example displays the redundancy state of the standby supervisor module.

```
QTECH> enable
QTECH# show redundancy states Redundancy role: slave Redundancy state: realtime



Redundancy management role: slave Redundancy control role: standby
Redundancy control state: realtime
```

The following example displays the redundancy state of the candidate supervisor module.

```
QTECH> enable
QTECH# show redundancy states Redundancy role: candidate Redundancy state: none


Redundancy management role: candidate Redundancy control role: standby
Redundancy control state: realtime
```

The following example displays the redundancy state of the active supervisor

module with VSD1and VSD2 configured.

```
QTECH> enable
QTECH# show redundancy states Redundancy role: master Redundancy state: realtime Auto-
sync time-period: 3600 s
Redundancy management role: master Redundancy control role: active Redundancy control state: realtime Auto-
sync time-period: 3600 s


VSD vsd1 redundancy state: realtime VSD vsd2 redundancy state: realtime
```

Field	Description
role	The role of the supervisor module.
state	The state of the supervisor module.
Auto-sync time-period	Displayed on the active supervisor module. The configuration file synchronizes the time interval automatically. "disabled" indicates no automatic synchronization.
VSD <vsd name> redundancy state	Displays hot backup state of the specified VSD in VSD 0.

Related Commands

Command	Description
N/A	N/A

Platform Description

N/A

12.1. switch-mode

Use this command to switch the UFT operating mode for a line card in stand-alone mode.

switch-mode *mode_type* [**overlay**] **slot** *slot_num*
Use this command to restore the default UFT operating mode for the specified

line card in stand-alone mode.

no switch-mode *mode_type* [**overlay**] **slot** *slot_num*

Parameter Description

Parameter	Description
mode_type	Indicates the UFT operating mode. In stand-alone mode, the line card can operate in the following modes: **default:** Default mode, which is applied to most of application scenarios. **bridge:** Bridge mode, which is applied to the application scenarios where pure Layer 2 services dominate. **gateway:** Gateway mode, which is applied to the application scenario in which Layer 3 services dominate.
overlay	Enables overlay mode (Optional).
slot_num	Indicates the corresponding line card installed in the chassis.

Defaults
The default UFT operating mode is **Default**.

Command Mode

Global configuration mode

Default   **Level**

14

Usage Guide

N/A

Configuratio n Examples

 The following example switches the UFT operating mode of the line card in slot 3 of the switch to bridge mode in stand-alone mode.

```
QTECH(config)#switch-mode bridge slot 3
Please save current config and restart your device! QTECH(config)#show running-config |
include switch-mode switch-mode bridge slot 3
```

Verification

Use the **show switch-mode status** command to display the current operating mode.

QTECH#show switch-mode status

```
Slot No Switch-Mode-Next  Switch-Mode-Current
                    3           bridge              bridge
```

Prompt Messages

N/A

Common Errors
 N/A

Platforms

The S6120-20XS4VS2QXS switch does not support UFT mode configuration.

12.2. show switch-mode status

Use this command to display the UFT mode of a switch.

show switch-mode status

Parameter Description

Parameter	Description
N/A	N/A

Command Mode

Privileged EXEC mode, global configuration mode, interface configuration mode

Default Level   14

Usage Guide

N/A

Configuration Examples

The following example displays the UFT mode of the switch in stand-alone mode.

```
QTECH#show switch-mode status
Slot No Switch-Mode  Status
                    1         default            ok
```

The following example displays the UFT mode of the switch in VSU mode.

```
QTECH#show switch-mode status
Device No Slot No Switch-Mode  Status
                        1        2         default            ok
1 3 default  none
```

Field Description:

Field	Description
Slot No	**Displays only slot number in stand-alone mode; displays both device number and slot number in VSU mode.**
Device No	Indicates the device number in VSU mode.

Switch Mode	Indicates the UFT operating mode.
Status	Indicates whether the node (device or line card) is online or not. ok: Online none: Offline

Prompt Messages

Platforms
N/A

13.1. show upgrade auto-sync

Use this command to display related auto-sync configuration on the device.
show upgrade auto-sync

Parameter Description

Parameter	Description
N/A	N/A

Command Mode

Privileged EXEC mode

Default Level
2

 Usage Guide

 This command is used to display the auto-sync upgrade configuration in the system including the policy, range and upgrade package's path.

 Prompt Messages

 The auto-sync information of the system is displayed after running.

```
QTECH#show upgrade auto-sync auto-sync policy: coordinate auto-sync range:  vsu
auto-sync package: flash:/eg1000m_main_1.0.0.0f328e91.bin
```

13.2. show upgrade file

Use this command to display the information of the installation package files in

the device file system.

show upgrade file *url*

Parameter Description

Parameter	Description
url	The local *url* path indicates where an installation package file is stored.

Command Mode

Privileged EXEC mode

Default Level   2

Usage Guide

This command is used to preview main messages of an installation package after it is downloaded into local file system.

Configuration Examples

The following example displays the information of an installation package file.

```
QTECH#$show flash:S6120_RGOS12.1(1)B0101-FULL_install.bin Name : main
Version      1.0.0.2f1c4dd8
Package type       : unknown Size : 166440370
Build time : Fri 23 Nov 2018 09:01:43 UTC Description        :  main  upgrade  package
Package files  :
       /fdt.img
       /initrd.img
       /kernel.img
       /rboot-s6120.bin
```

Prompt Messages

N/A

13.3. show upgrade history

Use this command to display the upgrade history.
 show upgrade history

Parameter Description

Parameter	Description

N/A	N/A

Command Mode

 Privileged EXEC mode
Default Level
2

Configuration Examples

The following example displays the upgrade history.

```
QTECH#show upgrade history Upgrade History Information:
        Time : 2018-11-05 06:13:17
        Method : OOBTFTP
        Package Name : s6120.bin
        Package Type : MAIN


        Time : 2018-11-06 03:11:16
        Method : OOBTFTP
        Package Name : S6120_RGOS12.1(1)B1_install.bin
Package Type : MAIN
```

Prompt Messages

 N/A

Platforms
N/A

13.4. show upgrade status

Use this command todisplay the upgrade status of all line cards on the chassis device.
show upgrade status

Parameter Description

Parameter	Description
N/A	N/A

Command Mode

Privileged EXEC mode

Default Level   2

Configuration Examples

The following example displays the upgrade status of all line cards on the chassis device.

```
QTECH#show upgrade status [slot: M1]
dev_type: s12k-ppc-cm status : ready
[slot: 8]
dev_type: s12k-s86-ppc-lc status : upgrading
```

Prompt Messages

The upgrade status of various line cards is displayed.

```
[slot: M1]
dev_type: s12k-ppc-cm status : ready
[slot: 8]
dev_type: s12k-s86-ppc-lc status : upgrading
```

Platforms
This command is supported only on the chassis device.

13.5. upgrade

Use this command to install and upgrade an installation package in the local file system.
Upgrade *url*[**force**]

Parameter Description

Parameter	Description
url	The local path indicates where an installation package is stored. This command is used to upgrade an installation package on the device.
force	Mandatory upgrade

Command Mode

Privileged EXEC mode

Default Level

Usage Guide

This command is applicable to installation packages of all subsystem components, chassis devices, and feature components. Before its use, run the **copy** command to copy feature packages into the file system in the device.

When there is no specified range of parameters, the command is used to upgrade the matched system components according to the auto-sync configuration.

Configuration Examples

The following example upgrades the main package on the device.

```
QTECH#upgrade usb0:/eg1000m_main_1.0.0.0f328e91.bin Upgrade processing is 10%
Upgrade processing is 60% Upgrade processing is 90% Upgrade info [OK]
Kernel    version[2.6.32.91f9d21->2.6.32.9f8b56f]    Rootfs    version[1.0.0.2ad02537-
>1.0.0.1bcc12e8] Upgrade processing is 100%
Reload system to take effect!
```

The following example upgrades the chassis package on the device.

```
QTECH# upgrade usb0:/ S8600E_RGOS11.0(4)B1_CM_install.bin [Slot M1]:Upgrade processing is
10%


[Slot 1]:Upgrade processing is 10%


[Slot M1]:Upgrade processing is 60%


[Slot 1]:Upgrade processing is 60%


[Slot M1]:Upgrade processing is 90%


[Slot M1]:
Upgrade info [OK]
Kernel version[2.6.32.abb2b41f170c81->2.6.32.abb2b415749f40]
```

```
Rootfs version[1.0.0.d5f0de03->1.0.0.660e0085]



[Slot M1]:Restart to take effect !



[Slot M1]:Upgrade processing is 100% [Slot 1]:Upgrade processing is 90%


[Slot 1]:
Upgrade info [OK]
Kernel        version[2.6.32.9f8b56f1d45ab2        ->2.6.32.0f48cb9f170c81]        Rootfs
version[1.0.0.2ad02537->1.0.0.1bcc12e8]


[Slot 1]:Restart to take effect !



[Slot 1]:Upgrade processing is 100% [slot: M1]
device_name: ca-octeon-cm status:        SUCCESS
[slot: 1]
device_name: ca-octeon-lc Status:        SUCCESS
```

Verification

Run the **show version detail** command to check whether the upgrade of a

subsystem component is successful.

Run the **show component** command to check whether the upgrade of a

feature component is successful. upgrading a feature component

Prompt Messages

The prompt message of successful running is displayed.

```
Upgrade info [OK]
```

The installation package is invalid or damaged and needs to be regained for
upgrade command.

```
Invalid package file
```

The installation package is not available on the device and needs to be

regained for upgrade command.

```
Device don't support
```

There is no need to upgrade the device.

```
The version in device is newer or the same
```

When there is insufficient space for upgrade, check USB flash disk attached on the device.

No enough space for decompress

Contact the service center to solve the system problem.

No enough space,rootfs been destroyed. Please upgrade inuboot

13.6. upgrade auto-sync package

Use this command to configure the path for the auto-sync upgrade.
upgrade auto-sync package *url*

Parameter Description

Parameter	Description
url	The path of installation package.

Defaults
The default is the last upgrade path.

Command Mode

Privileged EXEC mode

Default Level
2

Usage Guide
It is recommended to use default settings.

Configuration Examples

The following example sets the path to the upgrade package in the USB flash disk.

QTECH# upgrade auto-sync packageusb0:/eg1000m_main_1.0.0.0f328e91.bin

Verification
Run the **show upgrade auto-sync** command to display current auto-sync policy.
If *url* provides normal path, run the **stat** command to check whether it can be accessed.

Prompt Messages

The prompt message of successful running is displayed:

Upgrade auto-sync package is set as usb0:/eg1000m_main_1.0.0.0f328e91.bin

13.7. Upgrade auto-sync policy

Use this command to set an auto-sync policy for the system.
upgrade auto-sync policy [**none** | **compatible** | **coordinate**]

Parameter Description

Parameter	Description
none	No auto-sync upgrade
compatible	Performs auto-synchronization based on the sequential order of versions.
coordinate	Synchronizes with the version based on the system upgrade patch stored on the supervisor module.

Defaults   coordinate

Command Mode

Privileged EXEC mode

Default Level
2

Usage Guide
Check whether the upgrade package is ready before using the command.

Configuration Examples

The following example sets the auto-sync policy of the device based on the version of supervisor modules.

QTECH# upgrade auto-sync policy coordinate

Verification
Display the current policy for auto-sync upgrade by running the **show upgrade auto-sync**

QTECH
МИР ДОСТУПНЕЕ   www.qtech.ru

command.

Prompt Messages

The prompt message of successful running is displayed.

Upgrade auto-sync policy is set as coordinate.

13.8. upgrade auto-sync range

Use this command to set the range of auto-sync upgrade.
upgrade auto-sync range [**chassis** | **vsu**]

Parameter Description

Parameter	Description
chassis	Auto-sync version upgrade in the range of chassis
vsu	Auto-sync version upgrade in the range of the VSU system.

Defaults
vsu

Command Mode

Privileged EXEC mode

Default Level
2

Usage Guide

It is recommended to set the parameter to vsu to ensure system version

consistency to the most extent.

Configuration Examples

The following example installs the auto-sync upgrade in the VSU system.
QTECH# upgrade auto-sync range vsu

Verification

Run the **show upgrade auto-sync** command to display the range of current auto-sync upgrade.

Prompt Messages

The prompt message of successful running is displayed.

Upgrade auto-sync range is set as vsu.

13.1 upgrade download tftp

Use this command to download, install and upgrade installation packages from the tftp server.

upgrade download tftp://path [**vrf** vrf-name] [**force**]

upgrade download oob_tftp://path **[via mgmt** {number}**]** [**force**]

Parameter Description

Parameter	Description
path	The path of installation packages on the tftp server This command is downloaded and upgraded automatically from the server.
vrf vrf-name	Specifies a VRF for downloading the installation package.
via mgmt number	If the transfer mode is oob_tftp and there are multiple MGMT ports, you can select a specific port.
force	Enforces upgrade.

Command Mode

Privileged EXEC mode

Default Level

2

Usage Guide

This command is applicable to installation packages of all subsystem

components and chassis devices. This command is used to perform

automatic installation, copy and upgrade of files.

Configuration Examples

The following example upgrades the device.

```
QTECH#upgrade download tftp://172.30.31.176/S6120_RGOS12.1(1)B0101-FULL_install.bin
*Nov 23 13:21:38: %UPGRADE-6-INFO: Start upgrade
*Nov 23 13:21:39: %UPGRADE-6-INFO: Copy to /tmp/vsd/0/upgrade_rep/
*Nov 23 13:21:39: %UPGRADE-6-INFO: Please wait for a moment
Press Ctrl+C to quit


!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
QTECH#*Nov 16 19:09:00: %UPGRADE-6-INFO: Upgrade disable reload device
*Nov 16 19:09:00: %UPGRADE-6-INFO: Upgrade disable redundancy forceswitch
*Nov 16 19:09:00: %UPGRADE-6-INFO: (*2/0) Upgrade processing is 10%
*Nov 16 19:09:03: %UPGRADE-6-INFO: (*2/0) Upgrade processing is 30%
*Nov 16 19:09:05: %UPGRADE-6-INFO: (*2/0) Upgrade get package from master device, wait a
moment
*Nov 16 19:11:23: %UPGRADE-6-INFO: (*2/0) Upgrade check package md5 value, wait a moment
*Nov 16 19:11:34: %UPGRADE-6-INFO: (*2/0) Upgrade processing is 60%
*Nov 16 19:11:35: %UPGRADE-6-INFO: Upgrade processing is 10%
*Nov 16 19:11:37: %UPGRADE-6-INFO: Upgrade processing is 30%
*Nov 16 19:11:39: %UPGRADE-6-INFO: Upgrade check package md5 value, wait a moment
*Nov 16 19:11:41: %UPGRADE-6-INFO: (*2/0) Upgrade info [OK]
*Nov 16 19:11:41: %UPGRADE-6-INFO: (*2/0) Rootfs version[1.0.0.aca71d43->1.0.0.aca71d43]
*Nov 16 19:11:41: %UPGRADE-6-INFO: (*2/0) Reload system to take effect !
*Nov 16 19:11:50: %UPGRADE-6-INFO: Upgrade processing is 60%
*Nov 16 19:12:40: %UPGRADE-6-INFO: Upgrade info [OK]
*Nov 16 19:12:40: %UPGRADE-6-INFO: Rootfs version[1.0.0.aca71d43->1.0.0.aca71d43]
*Nov 16 19:12:40: %UPGRADE-6-INFO: Reload system to take effect !
*Nov 16 19:13:20: %UPGRADE-6-INFO: Upgrade enable redundancy forceswitch
*Nov 16 19:13:20: %UPGRADE-6-INFO: Upgrade enable reload device
*Nov 16 19:13:20: %UPGRADE-6-INFO: Upgrade processing is 100%
*Nov 16 19:13:20: %UPGRADE-6-INFO: Upgrade finish
```

Verification

Run the **show version** command to check whether the upgrade of a

feature component is successful.

Prompt Messages
 The prompt message of successful running is displayed.
Upgrade info [OK];

The installation package is invalid or damaged and needs to be regained for upgrade
command.

QTECH
МИР ДОСТУПНЕЕ   www.qtech.ru

Invalid package file

The installation package is not available on the device and needs to be

regained for upgrade command.

Device don't support

There is no need to upgrade the device.

The version in device is same

When there is insufficient space for upgrade, check USB flash disk attached on the device.
No enough space for decompress

13.2 upgrade download ftp

Use this command to download, install and upgrade installation packages from the ftp server.
upgrade download ftp://_path_ [**vrf** _vrf-name_] [**force**]
upgrade download oob_ftp://_path_ **[via mgmt** _{number}_**]** [**force**]

Parameter Description

Parameter	Description
path	The path of installation packages on the ftp server This command is downloaded and upgraded automatically from the server.
vrf _vrf-name_	Specifies a VRF for downloading the installation package.
via mgmt _number_	If the transfer mode is _oob_tftp_ and there are multiple MGMT ports, you can select a specific port.
force	Enforces upgrade.

Command Mode

Privileged EXEC mode

Default Level
2

Usage Guide

This command is applicable to installation packages of all subsystem

components and chassis devices. This command is used to perform

automatic installation, copy and upgrade of files.

Configuration Examples

 The following example upgrades the device.

```
QTECH#upgrade   download   ftp://user:123456@172.30.31.176/S6120_RGOS12.1(1)B1_install-11-
15.bin
*Nov 16 18:55:00: %UPGRADE-6-INFO: Start upgrade
*Nov 16 18:55:01: %UPGRADE-6-INFO: Copy to /data/upgrade_rep/
*Nov 16 18:55:01: %UPGRADE-6-INFO: Please wait for a moment
temp_patch_file  =  /data/upgrade_rep/_temp_S6120_RGOS12.1(1)B1_install-11-15.bin_  Press
Ctrl+C to quit


=================================================================================>100%
*Nov 16 18:59:37: %UPGRADE-6-INFO: Upgrade disable reload device
*Nov 16 18:59:37: %UPGRADE-6-INFO: Upgrade disable redundancy forceswitch
*Nov 16 18:59:37: %UPGRADE-6-INFO: (*2/0) Upgrade processing is 10% QTECH#*Nov 16
18:59:39: %UPGRADE-6-INFO: (*2/0) Upgrade processing is 30%
*Nov 16 18:59:43: %UPGRADE-6-INFO: (*2/0) Upgrade get package from master device, wait a
moment
*Nov 16 19:01:54: %UPGRADE-6-INFO: (*2/0) Upgrade check package md5 value, wait a moment
*Nov 16 19:02:04: %UPGRADE-6-INFO: (*2/0) Upgrade processing is 60%
*Nov 16 19:02:06: %UPGRADE-6-INFO: Upgrade processing is 10%
*Nov 16 19:02:08: %UPGRADE-6-INFO: Upgrade processing is 30%
*Nov 16 19:02:10: %UPGRADE-6-INFO: Upgrade check package md5 value, wait a moment
*Nov 16 19:02:12: %UPGRADE-6-INFO: (*2/0) Upgrade info [OK]
*Nov 16 19:02:12: %UPGRADE-6-INFO: (*2/0) Rootfs version[1.0.0.aca71d43->1.0.0.aca71d43]
*Nov 16 19:02:12: %UPGRADE-6-INFO: (*2/0) Reload system to take effect !
*Nov 16 19:02:21: %UPGRADE-6-INFO: Upgrade processing is 60%
*Nov 16 19:02:31: %UPGRADE-6-INFO: Upgrade info [OK]
*Nov 16 19:02:31: %UPGRADE-6-INFO: Rootfs version[1.0.0.aca71d43->1.0.0.aca71d43]
*Nov 16 19:02:31: %UPGRADE-6-INFO: Reload system to take effect !
*Nov 16 19:02:32: %UPGRADE-6-INFO: Upgrade enable redundancy forceswitch
*Nov 16 19:02:32: %UPGRADE-6-INFO: Upgrade enable reload device
*Nov 16 19:02:32: %UPGRADE-6-INFO: Upgrade processing is 100%
*Nov 16 19:02:32: %UPGRADE-6-INFO: Upgrade finish
```

Verification

Run the **show version detail** command to check whether the upgrade of a

subsystem component is successful.

Run the **show component** command to check whether the upgrade of a

feature component is successful.

Prompt Messages

 The prompt message of successful running is displayed.

Upgrade info [OK];

 The installation package is invalid or damaged and needs to be regained for upgrade command.

nvalid package file

The installation package is not available on the device and needs to be

regained for upgrade command.

Device don't support

There is no need to upgrade the device.

The version in device is same

When there is insufficient space for upgrade, check USB flash disk attached on the device.

```
No enough space for decompress
```

14.1. of controller-ip

Use this command to enable OpenFlow.

of controller-ip *ip-address* [**port** *port-id*] [**aux**] **interface**[

interface-id] Use the **no** form of this command to disable

OpenFlow.

no of controller-ip [*ip-address*]

Parameter Description

Parameter	Description
ip-address	Controller IP address. If you configure the **no** form of this command without any parameter, all controllers are disabled. (OpenFlow1.3 supports connection to multiple controllers and OpenFlow1.0 supports connection to one single controller).
port *port-id*	Controller access port ID. The default for OpenFlow1.0 is 6633 and for OpenFlow1.3 is 6653.
aux	Auxiliary switch (it takes effect for only OpenFlow1.3)
Interface *interface-id*	Interface ID, whether out-of-band MGMT interface or in-band physical port (some devices may not have MGMT interfaces).

Command Mode

Global configuration mode

Default

OpenFlow is disabled by default.

Usage Guide
N/A

Configuration Examples

The following example enables OpenFlow.

QTECH(config)#of controller-ip 192.168.21.57 interface gigabitEthernet 0/1

The following example disables OpenFlow.

QTECH#no of controller-ip

14.2. of mode

Parameter Description

Use this command to configure the controller mode.

of mode [**single** | **multiple**]

Use the **no** form of this command to restore the default setting.

no of mode

arameter	Description
N/A	N/A

Command Mode

Global configuration mode

Default

The default mode is multiple.

Usage Guide

Configure this command before enabling the controller.

Configuration Examples

The following example enables the single mode.

```
QTECH(config)#of mode single
```

The following example enables the multiple mode.

```
QTECH(config)#of mode multiple
```

The following example restores the default setting.

```
QTECH(config)#no of mode
```

14.3. of packet table-lookup

Use this command to enable table-lookup mode or disable table-lookup mode.

of packet table-lookup [**enable** | **disable**]

no of packet table-lookup

Parameter Description

Parameter	Description
N/A	N/A

Command Mode

Global configuration mode

Default

The table-lookup mode is enabled by default.

Usage Guide

N/A

Configuration Examples

The following example enables the table-lookup mode.

```
QTECH(config)#of packet table-lookup enable
```

The following example disables the table-lookup mode.

```
QTECH(config)#of packet table-lookup disable
```

The following example restores the default setting.

```
QTECH(config)#no of packet table-lookup
```

14.4. of packet vlantag

Use this command to determine whether to contain the VLAN tag in the packet

sent by the OpenFlow device.

[**no**] **of packet vlantag**

Parameter Description

Parameter	Description
N/A	N/A

Command Mode

Global configuration mode

Default

The VLAN tag is contained in the packet sent by the OpenFlow device by default.

Usage Guide

N/A

Configuration Examples

The following example contains the VLAN tag in the packet sent by the
OpenFlow device.

```
QTECH(config)#of packet vlantag
```

The following example does not contain the VLAN tag in the packet sent by the
OpenFlow device..

```
QTECH(config)#no of packet vlantag
```

14.5. show of

Parameter Description

Command Mode

Use this command to display the connection between the current device and the controller.

show of

Parameter	Description
N/A	N/A

Global configuration mode

Default

N/A

Usage Guide

Use this command to display the OpenFlow version on the device.

Configuration Examples

The following example displays the connection between the current device and the controller.

QTECH#show of

14.6. show of flowtable

Parameter Description

Command Mode

Use this command to display flow table entries of OpenFlow Device

show of flowtable

Parameter	Description
N/A	N/A

Global configuration mode

Default

N/A

Usage Guide

Running the **of controller-ip** command before configuring this command.

Otherwise, the flow table entries are not displayed.

Configuration Examples

The following example display flow table entries.

QTECH#show of flowtable

14.7. show of group

Parameter Description

Command Mode

Use this command to display group information of OpenFlow device.

show of group

Parameter	Description
N/A	N/A

Global configuration mode

Default

N/A

Usage Guide

This command takes effect only for OpenFlow1.3.

Configuration Examples

The following example displays group information of OpenFlow device.

QTECH(config)#show of group

14.8. show of mergedflow

Parameter Description

Command Mode

Use this command to display merged entries of OpenFlow device.

show of mergeflow

Parameter	Description
N/A	N/A

Global configuration mode

Default

N/A

Usage Guide

This command takes effect only for OpenFlow1.3. See the **show of flowtable** command for parameter description.

Configuration Examples

The following example displays merged entries of OpenFlow device.

QTECH(config)#show of mergedflow

14.9. show of meter

Parameter Description

Command Mode

Use this command to display meter information of OpenFlow device.

show of meter

Parameter	Description
N/A	N/A

Global configuration mode

Default

N/A

Usage Guide

This command takes effect only for OpenFlow1.3.

Configuration Examples

The following example displays meter information of OpenFlow device.

QTECH(config)#show of meter

14.10. show of port

Parameter Description

Use this command to display port information of OpenFlow device.

show of port

www.qtech.ru

Command Mode Global configuration mode

Parameter	Description
N/A	N/A

Default

N/A

Usage Guide

Running the **of controller-ip** command before configuring this command.

Otherwise, the port information is not displayed.

Configuration Examples

The following example displays port information of OpenFlow device.

QTECH#show of port

14.11. show of mergedflow

Parameter Description

Command Mode

Use this command to display merged flow information.

show of mergeflow

Parameter	Description
N/A	N/A

Global configuration mode

Default

N/A

Usage Guide

This command is active only for OpenFlow1.3.

Configuration Examples

The following example displays merged flow information.

QTECH(config)#show of mergedflow