HP 5500 EI & 5500 SI Switch Series

Fundamentals

Command Reference

Contents

CLI configuration commands

The device supports the FIPS mode that complies with NIST FIPS 140-2 requirements. Support for features, commands, and parameters might differ in FIPS mode and non-FIPS mode. For more information about FIPS mode, see *Security Configuration Guide*.

command-alias enable

Syntax

command-alias enable

undo command-alias enable

View

System view

Default level

2: System level

Description

Use **command-alias enable** to enable the command keyword alias function.

Use **undo command-alias enable** to disable the command keyword alias function.

By default, the command keyword alias function is disabled.

Disabling the command keyword alias function does not delete the configured aliases, but the aliases do not take effect anymore.

Related commands: **command-alias mapping**.

Examples

Enable the command keyword alias function.
```
<Sysname> system-view
[Sysname] command-alias enable
```
Disable the command keyword alias function.
```
<Sysname> system-view
[Sysname] undo command-alias enable
```

command-alias mapping

Syntax

command-alias mapping *cmdkey alias*

undo command-alias mapping *cmdkey*

View

System view

Default level

2: System level

Parameters

cmdkey: Complete form of the first keyword of a non-undo command, or the second keyword of an **undo** command.

alias: Alias for the keyword, which must be different from the first keyword of any non-undo command.

Description

Use **command-alias mapping** to configure a command keyword alias.

Use **undo command-alias mapping** to delete a command keyword alias.

By default, a command keyword has no alias.

Command keyword aliases take effect only after you enable the command keyword alias function.

Examples

\# Define **show** as the alias of the **display** keyword.

```
<Sysname> system-view
[Sysname] command-alias mapping display show
```

After you configure the alias, you can enter **show** to execute a **display** command. For example, you can enter **show clock** to execute the **display clock** command.

\# Delete the alias of the **display** keyword.

```
<Sysname> system-view
[Sysname] undo command-alias mapping display
```

command-privilege

Syntax

command-privilege level *level* **view** *view command*

undo command-privilege view *view command*

View

System view

Default level

3: Manage level

Parameters

level *level*: Command level, which ranges from 0 to 3.

view *view*: Specifies a view.

command: Command to be set in the specified view.

Description

Use **command-privilege** to assign a level for a specific command in a view.

Use **undo command-privilege** to restore the default.

By default, each command in a view has a specified level.

Command levels include four privileges: visit (0), monitor (1), system (2), and manage (3). You can assign a privilege level according to the user's need. When logging in to the device, the user can access the assigned level and all levels below it.

Level changes can cause maintenance, operation, and security problems. HP recommends using the default command level or modifying the command level under the guidance of professional staff.

The *command* specified for the **command-privilege** command must be complete, and have valid parameters. For example, the default level of the **tftp** *server-address* { **get** | **put** | **sget** } *source-filename* [*destination-filename*] [**source** { **interface** *interface-type interface-number* | **ip** *source-ip-address* }] command is 3. To enable users with the privilege level 0 to execute the **tftp** *server-address* **put** *source-filename* command (such as **tftp 192.168.1.26 put syslog.txt**) and disable them from specifying the **get**, **sget**, **source**, or *destination-filename* option, configure the **command-privilege level 0 view shell tftp 1.1.1.1 put a.cfg** command.

The *command* specified for the **undo command-privilege view** command can be incomplete. For example, configuring the **undo command-privilege view system ftp** command restores all commands starting with **ftp** (such as **ftp server acl**, **ftp server enable**, and **ftp timeout**) to their default level. If you have modified the level of commands **ftp server enable** and **ftp timeout**, and you want to restore only the **ftp server enable** command to its default level, use the **undo command-privilege view system ftp server** command.

If you change the command level of a command in a specified view from the default command level to a lower level, you must change the command levels of the **quit** command and the command used to enter this view. For example, the default command level of commands **interface** and **system-view** is 2 (system level). To make the **interface** command available to the level 1 users, execute the following commands: **command-privilege level 1 view shell system-view**, **command-privilege level 1 view system interface gigabitethernet1/0/1**, and **command-privilege level 1 view system quit**. Then, the level 1 users can enter system view, execute the **interface gigabitethernet** command, and return to user view.

Examples

Set the command level of the **interface** command to 0 in system view.

```
<Sysname> system-view
[Sysname] command-privilege level 0 view system interface
```

display clipboard

Syntax

display clipboard [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

1: Monitor level

Parameters

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display clipboard** to display data in the clipboard.

To copy some content to the clipboard:

1. Move the cursor to the starting position of the content, and then press the **Esc+Shift+,** combination.
2. Move the cursor to the ending position of the content, and then press the **Esc+Shift+.** combination.

Examples

\# Display data in the clipboard.

```
<Sysname> display clipboard
--------------- CLIPBOARD----------------
display current-configuration
```

display command-alias

Syntax

display command-alias [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

1: Monitor level

Parameters

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display command-alias** to display the command keyword alias configuration.

Examples

\# Display the command keyword alias configuration.

```
<Sysname> display command-alias
Command alias is enabled
index  alias                    command key
1      show                     display
```

display history-command

Syntax

display history-command [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

1: Monitor level

Parameters

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display history-command** to display commands saved in the command history buffer.

By default, the system can save up to 10 commands in the buffer. You can use the **history-command max-size** command to change the buffer size.

Examples

Display all commands saved in the command history buffer.

```
<Sysname> display history-command
  display history-command
  system-view
  vlan 2
  quit
```

display hotkey

Syntax

display hotkey [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

1: Monitor level

Parameters

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display hotkey** to display hotkey information.

Examples

Display hotkey information.

```
<Sysname> display hotkey
---------------- HOTKEY ----------------


          =Defined hotkeys=
Hotkeys Command
CTRL_G  display current-configuration
CTRL_L  display ip routing-table
CTRL_O  undo debug all


          =Undefined hotkeys=
Hotkeys Command
CTRL_T  NULL
CTRL_U  NULL


          =System hotkeys=
Hotkeys Function
CTRL_A  Move the cursor to the beginning of the current line.
CTRL_B  Move the cursor one character left.
CTRL_C  Stop current command function.
CTRL_D  Erase current character.
CTRL_E  Move the cursor to the end of the current line.
CTRL_F  Move the cursor one character right.
CTRL_H  Erase the character left of the cursor.
CTRL_K  Kill outgoing connection.
CTRL_N  Display the next command from the history buffer.
CTRL_P  Display the previous command from the history buffer.
CTRL_R  Redisplay the current line.
CTRL_V  Paste text from the clipboard.
CTRL_W  Delete the word left of the cursor.
CTRL_X  Delete all characters up to the cursor.
CTRL_Y  Delete all characters after the cursor.
CTRL_Z  Return to the User View.
CTRL_]  Kill incoming connection or redirect connection.
ESC_B   Move the cursor one word back.
ESC_D   Delete remainder of word.
ESC_F   Move the cursor forward one word.
ESC_N   Move the cursor down a line.
ESC_P   Move the cursor up a line.
ESC_<   Specify the beginning of clipboard.
ESC_>   Specify the end of clipboard.
```

hotkey

Syntax

hotkey { **CTRL_G** | **CTRL_L** | **CTRL_O** | **CTRL_T** | **CTRL_U** } *command*

undo hotkey { **CTRL_G** | **CTRL_L** | **CTRL_O** | **CTRL_T** | **CTRL_U** }

View

System view

Default level

2: System level

Parameters

CTRL_G: Assigns a command to **Ctrl+G**.

CTRL_L: Assigns a command to **Ctrl+L**.

CTRL_O: Assigns a command to **Ctrl+O**.

CTRL_T: Assigns a command to **Ctrl+T**.

CTRL_U: Assigns a command to **Ctrl+U**.

command: Command to be assigned to the hotkey.

Description

Use **hotkey** to assign a command to a configurable hotkey.

Use **undo hotkey** to restore the default.

By default:

- **Ctrl_G**: **display current-configuration** (display the running configuration).
- **Ctrl_L**: **display ip routing-table** (display the IPv4 routing table information).
- **Ctrl_O**: **undo debugging all** (disable all debugging functions).
- **Ctrl_T**: No command is assigned to this hotkey.
- **Ctrl_U**: No command is assigned to this hotkey.

Examples

Assign the **display tcp status** command to the hotkey **Ctrl+T**.

```
<Sysname> system-view
[Sysname] hotkey ctrl_t display tcp status
```

quit

Syntax

quit

View

Any view

Default level

0: Visit level (executed in user view)

2: System level (executed in other views)

Description

Use **quit** to return to the upper-level view.

In user view, this command disconnects you from the device.

Return from GigabitEthernet 1/0/1 interface view to system view and then to user view.

```
[Sysname-GigabitEthernet1/0/1] quit
[Sysname] quit
<Sysname>
```

return

Syntax

return

View

Any view except user view

Default level

2: System level

Description

Use **return** to return to user view from any other view. Pressing **Ctrl+Z** has the same effect.

Related commands: **quit**.

Examples

Return to user view from GigabitEthernet 1/0/1 interface view.

```
[Sysname-GigabitEthernet1/0/1] return
<Sysname>
```

screen-length disable

Syntax

screen-length disable

undo screen-length disable

View

User view

Default level

1: Monitor level

Description

Use **screen-length disable** to disable pausing between screens of output for the current session.

Use **undo screen-length disable** to enable pausing between screens of output for the current session.

By default, a login user uses the settings of the **screen-length** command. The default settings of the **screen-length** command are: pausing between screens of output and displaying up to 24 lines on a screen.

When the screen pause function is disabled, all output is displayed at one time and the screen is refreshes continuously.

This command only takes effect for the current session. When you log out, the setting by this command is restored to the default.

Related commands: **screen-length**.

Disable pausing between screens of output for the current session.

```
<Sysname> screen-length disable
```

super

Syntax

super [*level*]

View

User view

Default level

0: Visit level

Parameters

level: User level, which ranges from 0 to 3 and defaults to 3.

Description

Use **super** to switch from the current user privilege level to a specified user privilege level.

If a *level* is not specified, the command switches the user privilege level to 3.

There are four user privilege levels: visit (0), monitor (1), system (2), and manage (3). You can assign different privilege levels to different users. After login, a user can access the commands at or under the assigned level.

A user can switch to a lower privilege level without authentication. To switch to a higher privilege level, a user must enter the password configured for the higher privilege level. If no password is configured for the level, the switching operation fails unless the user is a console user. A console user can switch to a higher privilege level when no password is configured for the level.

With scheme authentication, a user who fails to provide the correct password during five consecutive attempts must wait 15 minutes before trying again. Trying again before the 15-minute period elapses restores the wait timer to 15 minutes and restarts the timer.

Related commands: **super password** and **super authentication-mode**.

Examples

Switch to user privilege level 2 from user privilege level 3.

```
<Sysname> super 2
User privilege level is 2, and only those commands can be used
whose level is equal or less than this.
Privilege note: 0-VISIT, 1-MONITOR, 2-SYSTEM, 3-MANAGE
```

Switch back to user privilege level 3. (Suppose the switching password is **123**. If no password is set, users cannot switch to user privilege level 3.)

```
<Sysname> super 3
Please input the password to change the privilege level, press CTRL_C to abort.
 Password:
User privilege level is 3, and only those commands can be used
whose level is equal or less than this.
Privilege note: 0-VISIT, 1-MONITOR, 2-SYSTEM, 3-MANAGE
```

super authentication-mode

Syntax

super authentication-mode { **local** | **scheme** } *

undo super authentication-mode

View

System view

Default level

2: System level

Parameters

local: Uses the local password set with the **super password** command for user privilege level switching authentication. If no password is set with the command, the system allows a console port user to switch the privilege level without authentication, but denies the switching requests of VTY users.

scheme: Uses AAA for user privilege level switching authentication. For more information about AAA, see *Security Configuration Guide*.

local scheme: Uses the local password, if configured, for user privilege level switching authentication. If the password is not configured, the system allows a console port user to switch the privilege level but uses AAA to authenticate VTY users.

scheme local: Uses AAA for user privilege level switching authentication. If the AAA configuration is incomplete or invalid or the server does not respond, the system uses the local password for the authentication.

Description

Use **super authentication-mode** to set the authentication mode for user privilege level switching.

Use **undo super authentication-mode** to restore the default.

By default, the authentication mode for the user privilege level switching is **local**.

Related commands: **super password**.

Examples

Set the authentication mode for the user privilege level switching to **local**.

```
<Sysname> system-view
[Sysname] super authentication-mode local
```

Set the authentication mode for the user privilege level switching to **scheme local**.

```
<Sysname> system-view
[Sysname] super authentication-mode scheme local
```

super password

Syntax

In non-FIPS mode:

super password [**level** *user-level*] [**hash**] { **cipher** | **simple** } *password*

undo super password [**level** *user-level*]

In FIPS mode:

super password [**level** *user-level*] { **cipher** | **simple** } *password*

undo super password [**level** *user-level*]

View

System view

Default level

2: System level

Parameters

hash: Enables hash-based encryption. This keyword is not available in FIPS mode.

level *user-level*: Specifies a user privilege level in the range of 1 to 3. The default is 3.

{ **cipher** | **simple** } *password*: Specifies a case-sensitive password string that contains uppercase and lowercase letters, digits, and special characters. The password length and form requirements vary with the **hash**, **cipher**, and **simple** keyword combinations and the FIPS/non-FIPS mode (see Table 1 and Table 2).

Table 1 Password length and form requirements for the *password* argument in non-FIPS mode

Keyword combination	Password string form	Length (in characters)
simple	Plain text	1 to 16
hash simple	Plain text	1 to 16
cipher	Ciphertext	1 to 53
hash cipher	Ciphertext (hashed form)	1 to 110

Table 2 Password length and form requirements for the *password* argument in FIPS mode

Keyword combination	Password string form	Length (in characters)
simple	Plain text	8 to 16
cipher	Ciphertext	8 to 53

Description

Use **super password** to set a password for a user privilege level .

Use **undo super password** to restore the default.

By default, no password is set for any privilege level.

For security purposes, all passwords, including passwords configured in plain text, are saved in cipher text to the configuration file.

Store the plaintext forms of user privilege level passwords in a safe place. If a user privilege level is password protected, you must provide the password in plain text when switching to the privilege level from a lower level.

You cannot configure the **super password** [**level** *user-level*] **hash cipher** command when the **password-control enable** command is configured.

Examples

Set the password for user privilege level **3** to **abc**.

```
<Sysname> system-view
[Sysname] super password level 3 simple abc
```

system-view

Syntax

system-view

View

User view

Default level

2: System level

Description

Use **system-view** to enter system view from user view.

Related commands: **quit** and **return**.

Examples

Enter system view from user view.

```
<Sysname> system-view
System View: return to User View with Ctrl+Z.
[Sysname]
```

Login management commands

The device supports the FIPS mode that complies with NIST FIPS 140-2 requirements. Support for features, commands, and parameters might differ in FIPS mode and non-FIPS mode. For more information about FIPS mode, see *Security Configuration Guide*.

Telnet,http is not supported in FIPS mode.

acl (user interface view)

Syntax

To use a basic or advanced ACL:

acl [**ipv6**] *acl-number* { **inbound** | **outbound** }

undo acl [**ipv6**] *acl-number* { **inbound** | **outbound** }

To use an Ethernet frame header ACL:

acl *acl-number* **inbound**

undo acl *acl-number* **inbound**

View

VTY user interface view

Default level

2: System level

Parameters

ipv6: When this keyword is present, the command supports IPv6; otherwise, it supports IPv4.

acl-number: Number of the ACL:

- **Basic ACL**—2000 to 2999
- **Advanced ACL**—3000 to 3999
- **Ethernet frame header ACL**—4000 to 4999

inbound: Restricts Telnet or SSH connections established in the inbound direction through the VTY user interface. If the received packets for establishing a Telnet or SSH connection are permitted by an ACL rule, the connection is allowed to be established. When the device functions as a Telnet server or SSH server, this keyword is used to control access of Telnet clients or SSH clients.

outbound: Restricts Telnet connections established in the outbound direction through the VTY user interface. If the packets sent for establishing a Telnet connection are permitted by an ACL rule, the connection is allowed to be established. When the device functions as a Telnet client, this keyword is used to define Telnet servers accessible to the client.

Description

Use **acl** to reference ACLs to control access to the VTY user interface.

Use **undo acl** to cancel the ACL application. For more information about ACL, see *ACL and QoS Configuration Guide*.

By default, access to the VTY user interface is not restricted.

If no ACL is referenced in VTY user interface view, the VTY user interface has no access control over establishing a Telnet or SSH connection.

If an ACL is referenced in VTY user interface view, the connection is permitted to be established only when packets for establishing a Telnet or SSH connection match a permit statement in the ACL.

If you configure two or more ACLs of the same type for a VTY user interface, only the last one takes effect.

A basic ACL with the **inbound** keyword and a basic ACL with the **outbound** keyword are considered different types of ACLs. The same is true for advanced ACLs.

If you apply more than one type of ACL to a VTY user interface, the match order is basic ACL, advanced ACL, and Ethernet frame header ACL.

Examples

Allow only the user with the IP address of 192.168.1.26 to access the device through Telnet or SSH.

```
<Sysname> system-view
[Sysname] acl number 2001
[Sysname-acl-basic-2001] rule permit source 192.168.1.26 0
[Sysname-acl-basic-2001] quit
[Sysname] user-interface vty 0
[Sysname-ui-vty0] acl 2001 inbound
```

After your configuration, user A (with the IP address 192.168.1.26) can Telnet to the device while user B (with the IP address 192.168.1.60) cannot Telnet to the device. Upon a connection failure, a message appears, saying "%connection closed by remote host!"

Allow the device to only Telnet to the Telnet server with IP address 192.168.1.41.

```
<Sysname> system-view
[Sysname] acl number 3001
[Sysname-acl-adv-3001] rule permit tcp destination 192.168.1.41 0
[Sysname-acl-adv-3001] quit
[Sysname] user-interface vty 0 15
[Sysname-ui-vty0-15] acl 3001 outbound
[Sysname-ui-vty0-15] return
<Sysname>
```

After your configuration, if you Telnet to 192.168.1.46, your operation fails.

```
<Sysname> telnet 192.168.1.46
%Can't access the host from this terminal!
```

But you can Telnet to 192.168.1.41.

```
<Sysname> telnet 192.168.1.41
Trying 192.168.1.41 ...
Press CTRL+K to abort
Connected to 192.168.1.41 ...
```

activation-key

Syntax

activation-key *character*

undo activation-key

View

AUX user interface view

Default level

3: Manage level

Parameters

character: Shortcut key for starting a terminal session, a single character (or its corresponding ASCII code value that ranges from 0 to 127) or a string of 1 to 3 characters. However, only the first character functions as the shortcut key. For example, if you input an ASCII code value of 97, the system uses its corresponding character **a** as the shortcut key. If you input string b@c, the system uses the first character **b** as the shortcut key.

Description

Use **activation-key** to define a shortcut key for starting a terminal session.

Use **undo activation-key** to restore the default.

By default, pressing the **Enter** key starts a terminal session. However, if a new shortcut key is defined with the **activation-key** command, the **Enter** key no longer functions. To display the shortcut key you have defined, use the **display current-configuration | include activation-key** command.

Examples

Configure character **s** as the shortcut key for starting a terminal session on the console port.

```
<Sysname> system-view
[Sysname] user-interface aux 0
[Sysname-ui-aux0] activation-key s
```

To verify the configuration:

1. Exit the terminal session on the console port.

    ```
    [Sysname-ui-aux0] return
    <Sysname> quit
    ```

2. Log in to the console port again.

    The following message appears.

    ```
    *****************************************************************************
    * Copyright (c) 2010-2013 Hewlett-Packard Development Company, L.P          *
    * Without the owner's prior written consent,                               *
    * no decompiling or reverse-engineering shall be allowed.                  *
    *****************************************************************************


    User interface aux0 is available.



    Please press ENTER.
    ```

3. Press **Enter**.

    At this moment, pressing **Enter** does not start a session.

4. Enter **s**.

    A terminal session is started.

```
<Sysname>
%Mar  2 18:40:27:981 2011 Sysname SHELL/5/LOGIN: Console login from aux0
```

auto-execute command

Syntax

auto-execute command *command*

undo auto-execute command

View

User interface view

Default level

3: Manage level

Parameters

command: Specifies a command to be automatically executed.

Description

Use **auto-execute command** to specify a command to be automatically executed when a user logs in to the current user interface.

Use **undo auto-execute command** to remove the configuration.

By default, command auto-execution is disabled.

The **auto-execute command** command is not supported by the AUX user interface.

The system automatically executes the specified command when a user logs in to the user interface, and tears down the user connection after the command is executed. If the command triggers another task, the system does not tear down the user connection until the task is completed.

Typically, you can use the **auto-execute command** *telnet* command in user interface view to enable a user to automatically Telnet to the specified host when the user logs in to the device. After the user terminates the connection with the host, the user's connection with the device is automatically terminated.

> ⓘ IMPORTANT:
>
> The **auto-execute command** command may disable you from configuring the system through the user interface to which the command is applied. Before configuring the command and saving the configuration (by using the **save** command), make sure you can access the device through VTY or AUX user interfaces to remove the configuration when a problem occurs.

Examples

Configure the device to automatically Telnet to 192.168.1.41 after a user logs in to interface VTY 0.

```
<Sysname> system-view
 [Sysname] user-interface vty 0
[Sysname -ui-vty0] auto-execute command telnet 192.168.1.41
% This action will lead to configuration failure through ui-vty0. Are you sure?
[Y/N]:y
[Sysname-ui-vty0]
```

To verify the configuration, Telnet to 192.168.1.40. The device automatically Telnets to 192.168.1.41. The following output is displayed:

```
C:\> telnet 192.168.1.40
*****************************************************************************
* Copyright (c) 2010-2013 Hewlett-Packard Development Company, L.P        *
* Without the owner's prior written consent,                             *
* no decompiling or reverse-engineering shall be allowed.                *
*****************************************************************************


<Sysname>
Trying 192.168.1.41 ...
Press CTRL+K to abort
Connected to 192.168.1.41 ...
*****************************************************************************
* Copyright (c) 2010-2013 Hewlett-Packard Development Company, L.P        *
* Without the owner's prior written consent,                             *
* no decompiling or reverse-engineering shall be allowed.                *
*****************************************************************************


<Sysname>
```

This operation is the same as directly logging in to the device at 192.168.1.41. If the Telnet connection to 192.168.1.41 is broken down, the Telnet connection to 192.168.1.40 breaks down at the same time.

authentication-mode

Syntax

In non-FIPS mode:

authentication-mode { **none** | **password** | **scheme** }

undo authentication-mode

In FIPS mode:

authentication-mode scheme

undo authentication-mode

View

User interface view

Default level

3: Manage level

Parameters

none: Performs no authentication. This keyword is not available in FIPS mode.

password: Performs local password authentication. This keyword is not available in FIPS mode.

scheme: Performs AAA authentication. For more information about AAA, see *Security Configuration Guide.*

Description

Use **authentication-mode** to set the authentication mode for the user interface.

Use **undo authentication-mode** to restore the default.

By default, the authentication mode is **password** for VTY user interfaces and **none** for AUX user interfaces.

In non-FIPS mode, the default authentication mode is **password** for VTY user interfaces and **none** for AUX user interfaces.

In FIPS mode, the authentication mode can only be **scheme** and the default authentication mode is **scheme**.

Related commands: **set authentication password**.

Examples

Specify that no authentication is needed for VTY 0. (This mode is insecure.)

```
<Sysname> system-view
[Sysname] user-interface vty 0
[Sysname-ui-vty0] authentication-mode none
```

Use password authentication when users log in to the device through VTY 0, and set the authentication password to **321**.

```
<Sysname> system-view
[Sysname] user-interface vty 0
[Sysname-ui-vty0] authentication-mode password
[Sysname-ui-vty0] set authentication password simple 321
```

Authenticate users by username and password for VTY 0. Set the username to **123** and the password to **321**.

```
<Sysname> system-view
[Sysname] user-interface vty 0
[Sysname-ui-vty0] authentication-mode scheme
[Sysname-ui-vty0] quit
[Sysname] local-user 123
[Sysname-luser-123] password simple 321
[Sysname-luser-123] service-type telnet
[Sysname-luser-123] authorization-attribute level 3
```

command accounting

Syntax

command accounting

undo command accounting

View

User interface view

Default level

3: Manage level

Parameters

None

Description

Use **command accounting** to enable command accounting.

Use **undo command accounting** to restore the default.

By default, command accounting is disabled. The accounting server does not record the commands that users have executed.

When command accounting is enabled and command authorization is not, every executed command is recorded on the HWTACACS server.

When both command accounting and command authorization are enabled, only the authorized and executed commands are recorded on the HWTACACS server.

Examples

Enable command accounting on VTY 0. Then the HWTACACS server records the commands executed by users that have logged in through VTY 0.

```
<Sysname> system-view
[Sysname] user-interface vty 0
[Sysname-ui-vty0] command accounting
```

command authorization

Syntax

command authorization

undo command authorization

View

User interface view

Default level

3: Manage level

Parameters

None

Description

Use **command authorization** to enable command authorization.

Use **undo command authorization** to restore the default.

By default, command authorization is disabled. Logged-in users can execute commands without authorization.

With command authorization enabled, users can perform only commands authorized by the server.

Examples

Enable command accounting for VTY 0 so users logging in from VTY 0 can perform only the commands authorized by the HWTACACS server.

```
<Sysname> system-view
[Sysname] user-interface vty 0
[Sysname-ui-vty0] command authorization
```

databits

Syntax

databits { **7** | **8** }

undo databits

View

User interface view

Default level

2: System level

Parameters

7: Sets 7 data bits for each character.

8: Sets 8 data bits for each character.

Description

Use **databits** to set data bits for each character.

Use **undo databits** to restore the default.

By default, 8 data bits are set for each character.

This command is only applicable to the asynchronous serial port (console port).

The data bits setting must be the same for the user interfaces of the connecting ports on the device and the terminal device for communication.

Examples

Use 8 data bits for each character.

```
<Sysname> system-view
[Sysname] user-interface aux 0
[Sysname-ui-aux0] databits 8
```

display ip http

Syntax

display ip http [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

1: Monitor level

Parameters

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display ip http** to display HTTP information.

Examples

Display information about HTTP..

```
<Sysname> display ip http
HTTP port: 80
Basic ACL: 0
Current connection: 0
Operation status: Running
```

Table 3 Command output

Field	Description
HTTP port	Port number used by the HTTP service.
Basic ACL	Basic ACL number associated with the HTTP service.
Current connection	Number of current connections.
Operation status	Operation status: • **Running**—The HTTP service is enabled. • **Stopped**—The HTTP service is disabled.

display ip https

Syntax

display ip https [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

1: Monitor level

Parameters

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display ip https** to display information about HTTPS.

Examples

Display information about HTTPS.
```
<Sysname> display ip https
HTTPS port: 443
SSL server policy:
Certificate access-control-policy:
Basic ACL: 0
Operation status: Stopped
```

Table 4 Command output

Field	Description
HTTPS port	Port number used by the HTTPS service.
SSL server policy	The SSL server policy associated with the HTTPS service.
Certificate access-control-policy	The certificate attribute access control policy associated with the HTTPS service.
Basic ACL	The basic ACL number associated with the HTTPS service.
Current connection	Number of current connections.
Operation status	Operation status: • **Running**—The HTTPS service is enabled. • **Stopped**—The HTTPS service is disabled.

display telnet client configuration

Syntax

display telnet client configuration [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

1: Monitor level

Parameters

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display telnet client configuration** to display the configuration of the device when it serves as a Telnet client.

Examples

Display the configuration of the device when it serves as a Telnet client.

```
<Sysname> display telnet client configuration
 The source IP address is 1.1.1.1.
```

The output shows that when the device serves as a client, the source IPv4 address for sending Telnet packets is 1.1.1.1.

display user-interface

Syntax

display user-interface [*num1* | { **aux** | **vty** } *num2*] [**summary**] [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

1: Monitor level

Parameters

num1: Absolute number of a user interface. The value range is 0 to 40 on an HP 5500 EI and 0 to 35 on an HP 5500 SI.

aux: Specifies the AUX user interface.

vty: Specifies the VTY user interface.

num2: Relative number of a user interface. For an AUX user interface, the value range is 0 to 8 on an HP 5500 EI and 0 to 3 on an HP 5500 SI. For a VTY user interface, the value range is 0 to 15.

summary: Displays summary about user interfaces.

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display user-interface** to display information about the specified or all user interfaces.

If the **summary** keyword is not included, the command displays the type of the user interface, absolute or relative number, transmission rate, user privilege level, authentication mode, and the access port.

If the **summary** keyword is included, the command displays all the numbers and types of user interfaces.

Examples

Display information about user interface 0.
```
<Sysname> display user-interface 0
  Idx  Type      Tx/Rx      Modem Privi Auth  Int
  0    AUX 0     9600        -     3     N     -

  +    : Current user-interface is active.
  F    : Current user-interface is active and work in async mode.
  Idx  : Absolute index of user-interface.
  Type : Type and relative index of user-interface.
  Privi: The privilege of user-interface.
  Auth : The authentication mode of user-interface.
  Int  : The physical location of UIs.
  A    : Authentication use AAA.
  N    : Current UI need not authentication.
  P    : Authentication use current UI's password.
```

Table 5 Command output

Field	Description
+	The current user interface is active.
F	The current user interface is active and works in asynchronous mode.
Idx	Absolute number of the user interface.
Type	Type and relative number of the user interface.
Tx/Rx	Transmission/Receive rate of the user interface.
Modem	Whether the modem is allowed to dial in (in), dial out (out), or both (inout). By default, the character - is displayed to indicate that this function is disabled.
Privi	Indicates the command level of a user under that user interface.
Auth	Authentication mode for the users, **A**, **P**, **L**, or **N**.
Int	The physical port that corresponds to the user interface. For AUX and VTY user interfaces, a hyphen (-) is displayed.
A	AAA authentication.
N	No authentication.
P	Password authentication.

\# Display summary about all user interfaces.

```
<Sysname> display user-interface summary
  User interface type : [AUX]
          0:UXXX
  User interface type : [VTY]
         20:XXXX XXXX XXXX XXXX


   1 character mode users.    (U)
  19 UI never used.        (X)
   1 total UI in use
```

Table 6 Command output

Field	Description
User interface type	Type of user interface, AUX, or VTY.
0:X	0 represents the absolute number of the user interface. X means this user interface is not used; U means this user interface is in use.
character mode users. (U)	Number of users, or, the total number of character U.
UI never used. (X)	Number of user interfaces not used, or, the total number of character X.
total UI in use	Total number of user interfaces in use.

display users

Syntax

display users [**all**] [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

1: Monitor level

Parameters

all: Displays information about all user interfaces that the device supports.

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display users** to display information about the user interfaces that are being used.

Use **display users all** to display information about all user interfaces supported by the device.

Examples

Display information about the user interfaces that are being used.

```
<Sysname> display users
The user application information of the user interface(s):
  Idx UI      Delay     Type Userlevel
+ 20  VTY 0   00:00:00 TEL  3
  21  VTY 1   00:09:19 TEL  3


Following are more details.
VTY 0   :
        Location: 192.168.1.54
VTY 1   :
        Location: 192.168.1.58
 +    : Current operation user.
 F    : Current operation user work in async mode.
```

The output shows that two users have logged in to the device. The one with IP address 192.168.1.54 uses VTY 0, and the other with IP address 192.168.1.58 uses VTY 1.

Table 7 Command output

Field	Description
Idx	Absolute number of the user interface.
UI	Relative number of the user interface. For example, with VTY, the first column represents user interface type, and the second column represents the relative number of the user interface.
Delay	Time elapsed since the user's last input, in the format of hh:mm:ss.

Field	Description
Type	User type, such as Telnet or SSH.
Userlevel	User level: 0 for visit, 1 for monitor, 2 for system, and 3 for manage.
+	Current user.
Location	IP address of the user.
F	The current user is operating in asynchronous mode.

display web users

Syntax

display web users [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

1: Monitor level

Parameters

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display web users** to display information about the web users.

Examples

Display information about the web users.
```
<Sysname> display web users
UserID    Name       Language  Level       State    LinkCount LoginTime LastTime
ab800000  admin      Chinese   Management  Enable      0       14:13:46  14:14:18
```

Table 8 Command output

Field	Description
UserID	Web user ID
Name	Web username
Language	Language used in web login
Level	Web user level
State	Web user status
LinkCount	Number of tasks running for the web user

Field	Description
LoginTime	Login time
LastTime	Last time when the web user accessed the device

escape-key

Syntax

escape-key { **default** | *character* }

undo escape-key

View

User interface view

Default level

3: Manage level

Parameters

character: Specifies the shortcut key for terminating a task, a single character (or its corresponding ASCII code value in the range of 0 to 127) or a string of 1 to 3 characters. Only the first character of a string functions as the shortcut key. For example, if you enter an ASCII code value of 113, the system uses its corresponding character q as the shortcut key. If you enter the string q@c, the system uses the first character **q** as the shortcut key.

default: Restores the default escape key sequence **Ctrl+C**.

Description

Use **escape-key** to define a shortcut key for terminating a task.

Use **undo escape-key** to disable the shortcut key for terminating tasks.

By default, you can use **Ctrl+C** to terminate a task.

After you define a new shortcut key by using the **escape-key** command, the new shortcut key is used to terminate a task. To display the shortcut key you have defined, use the **display current-configuration** command.

If you set the *character* argument in a user interface to log in to the device and then Telnet to another device, the *character* argument can be used as a control character to terminate a task rather than used as a common character. For example, if you specify *character* **e** in VTY 0 user interface of Device A, when you log in to Device A by using VTY 0 from a PC (HyperTerminal), you can input **e** as a common character on the PC, and you can also use **e** to terminate the task running on Device A. If you Telnet to Device B from Device A, you can only use **e** to terminate the task running on Device B, rather than use **e** as a common character, so specify *character* as a key combination.

Examples

Define key **a** as the shortcut key for terminating a task.

```
<Sysname> system-view
[Sysname] user-interface aux 0
[Sysname-ui-aux0] escape-key a
```

To verify the configuration:

1. Ping the IP address of 192.168.1.49 and use the **-c** keyword to specify the number of ICMP echo packets to be sent as 20.

```
<Sysname> ping -c 20 192.168.1.49
  PING 192.168.1.49: 56  data bytes, press a to break
    Reply from 192.168.1.49: bytes=56 Sequence=1 ttl=255 time=3 ms
    Reply from 192.168.1.49: bytes=56 Sequence=2 ttl=255 time=3 ms
```

2. Enter **a**.

The task terminates immediately and the system returns to system view.

```
--- 192.168.1.49 ping statistics ---
  2 packet(s) transmitted
  2 packet(s) received
  0.00% packet loss
  round-trip min/avg/max = 3/3/3 ms

<Sysname>
```

flow-control

Syntax

flow-control { **hardware** | **none** | **software** }

undo flow-control

View

AUX user interface view

Default level

2: System level

Parameters

hardware: Performs hardware flow control.

none: Disables flow control.

software: Performs software flow control.

Description

Use **flow-control** to configure the flow control mode.

Use **undo flow-control** to restore the default.

By default, the flow control mode is **none**, which means no flow control is performed.

A flow control mode takes effect on both inbound and outbound directions. In inbound flow control, the local device listens to the remote device for flow control information while in the outbound flow control, the local device sends flow control information to the remote device.

Two ends must be configured with the same flow control mode.

NOTE:

The switch supports the **none** flow control mode only.

Configure no flow control in the inbound and outbound directions for AUX 0.

```
<Sysname> system-view
[Sysname] user-interface aux 0
[Sysname-ui-aux0] flow-control none
```

free user-interface

Syntax

free user-interface { *num1* | { **aux** | **vty** } *num2* }

View

User view

Default level

3: Manage level

Parameters

num1: Absolute number of a user interface. The value range is 0 to 40 on an HP 5500 EI and 0 to 35 on an HP 5500 SI.

aux: Specifies the AUX user interface.

vty: Specifies the VTY user interface.

num2: Relative number of a user interface. For an AUX user interface, the value range is 0 to 8 on an HP 5500 EI and 0 to 3 on an HP 5500 SI. For a VTY user interface, the value range is 0 to 15.

Description

Use **free user-interface** to release connections established on the specified user interface.

This command cannot release the connection that you are using.

Examples

Release the connection established on user interface VTY 1:

1. Display the users that are operating the device.
   ```
   <Sysname> display users
   The user application information of the user interface(s):
   + 20  VTY 0   00:00:00 TEL  3
     21  VTY 1   00:09:51 TEL  3
   Following are more details.
   VTY 0  :
           Location: 192.168.0.10
   VTY 1  :
           Location: 192.168.0.5
    +     : Current operation user.
    F     : Current operation user work in async mode.
   ```
2. If the operations of the user using VTY 1 affect the operations of the administrator, log out the user.
   ```
   <Sysname> free user-interface vty 1
   Are you sure to free user-interface vty1? [Y/N]:y
   ```

free web-users

free web-users { **all** | **user-id** *user-id* | **user-name** *user-name* }

View

User view

Default level

2: System level

Parameters

all: Specifies all web users.

user-id: Web user ID, which is a hexadecimal number of eight digits.

user-name: Name of the web user. This argument can contain 1 to 80 characters.

Description

Use **free web-users** to log out web users.

Related commands: **display web users**.

Examples

Log out all web users.
```
<Sysname> free web-users all
```

history-command max-size

Syntax

history-command max-size *size-value*

undo history-command max-size

View

User interface view

Default level

2: System level

Parameters

size-value: Specifies the maximum number of history commands that the buffer can store. The value is in the range of 0 to 256.

Description

Use **history-command max-size** to set the size of the history command buffer of the current user interface.

Use **undo history-command max-size** to restore the default.

By default, the buffer saves 10 history commands.

The history command buffer saves executed history commands per user interface and buffers for different user interfaces do not affect each other. To display the commands that are stored in the history buffer, use the display **history-command** command. To view the recently executed commands, press the upper arrow or lower arrow key.

After you terminate the current session, the system automatically removes the commands saved in the corresponding history buffer.

Examples

Set the buffer to store 20 history commands at most.

```
<Sysname> system-view
[Sysname] user-interface aux 0
[Sysname-ui-aux0] history-command max-size 20
```

idle-timeout

Syntax

idle-timeout *minutes* [*seconds*]

undo idle-timeout

View

User interface view

Default level

2: System level

Parameters

minutes: Specifies the timeout time in minutes, in the range of 0 to 35791. The default value is 10 minutes.

seconds: Specifies timeout time in seconds, in the range of 0 to 59. The default value is 0 seconds.

Description

Use **idle-timeout** to set the idle-timeout timer.

Use **undo idle-timeout** to restore the default.

The default idle-timeout is 10 minutes.

The system automatically terminates the user's connections if there is no information interaction between the device and the users within the idle timeout time.

Setting idle-timeout to zero disables the timer. In this case, connections are maintained unless you terminate them.

Examples

Set the idle-timeout timer to 1 minute and 30 seconds.

```
<Sysname> system-view
[Sysname] user-interface aux 0
[Sysname-ui-aux0] idle-timeout 1 30
```

ip http acl

Syntax

ip http acl *acl-number*

undo ip http acl

View

System view

Default level

2: System level

Parameters

acl-number: ACL number, in the range of 2000 to 2999.

Description

Use **ip http acl** to associate the HTTP service with an ACL.

Use **undo ip http acl** to remove the association.

By default, the HTTP service is not associated with any ACL.

After the HTTP service is associated with an ACL, only the clients permitted by the ACL can access the device through HTTP.

Related commands: **display ip http**; **acl** (*ACL and QoS Command Reference*).

Examples

Associate the HTTP service with ACL 2001 to only allow the clients within the 10.10.0.0/16 network to access the device through HTTP.

```
<Sysname> system-view
[Sysname] acl number 2001
[Sysname-acl-basic-2001] rule permit source 10.10.0.0 0.0.255.255
[Sysname-acl-basic-2001] quit
[Sysname] ip http acl 2001
```

ip http dscp

Syntax

ip http dscp *dscp-value*

undo ip http dscp

View

System view

Default level

2: System level

Parameters

dscp-value: Specifies a DSCP value in the range of 0 to 63.

Description

Use **ip http dscp** to set the DSCP value for IPv4 to use for outgoing HTTP packets.

Use **undo ip http dscp** to restore the default.

By default, IPv4 uses the DSCP value 16 for outgoing HTTP packets.

Examples

Set the DSCP value for IPv4 to use for outgoing HTTP packets to 30.

```
<Sysname> system-view
[Sysname] ip http dscp 30
```

ip http enable

ip http enable

undo ip http enable

View

System view

Default level

2: System level

Parameters

None

Description

Use **ip http enable** to enable the HTTP service.

Use **undo ip http enable** to disable the HTTP service.

The device can act as the HTTP server that can be accessed only after the HTTP service is enabled.

- When the device starts up with empty configuration, the software initial settings are used, and HTTP service is enabled.
- When the device starts up with the default configuration file, the software default settings are used, and HTTP service is disabled.

For more information about the initial settings and default configuration file, see *Fundamentals Configuration Guide*.

Related commands: **display ip http**.

Examples

Enable the HTTP service.

```
<Sysname> system-view
[Sysname] ip http enable
```

Disable the HTTP service.

```
<Sysname> system-view
[Sysname] undo ip http enable
```

ip http port

Syntax

ip http port *port-number*

undo ip http port

View

System view

Default level

3: Manage level

Parameters

port-number: Port number of the HTTP service, in the range of 1 to 65535.

Description

Use **ip http port** to configure the port number of the HTTP service.

Use **undo ip http port** to restore the default.

By default, the port number of the HTTP service is 80.

Verify that the port number is not used by another service, because this command does not check for conflicts with configured port numbers.

Related commands: **display ip http**.

Examples

Configure the port number of the HTTP service as 8080.

```
<Sysname> system-view
[Sysname] ip http port 8080
```

ip https acl

Syntax

ip https acl *acl-number*

undo ip https acl

View

System view

Default level

3: Manage level

Parameters

acl-number: ACL number, in the range of 2000 to 2999.

Description

Use **ip https acl** to associate the HTTPS service with an ACL.

Use **undo ip https acl** to remove the association.

By default, the HTTPS service is not associated with any ACL.

After the HTTPS service is associated with an ACL, only the clients permitted by the ACL can access the device.

Related commands: **display ip https**; **acl** (*ACL and QoS Command Reference*).

Examples

Associate the HTTPS service with ACL 2001 to only allow the clients within the 10.10.0.0/16 network segment to access the HTTPS server through HTTP.

```
<Sysname> system-view
[Sysname] acl number 2001
[Sysname-acl-basic-2001] rule permit source 10.10.0.0 0.0.255.255
[Sysname-acl-basic-2001] quit
[Sysname] ip https acl 2001
```

ip https certificate access-control-policy

Syntax

> **ip https certificate access-control-policy** *policy-name*
>
> **undo ip https certificate access-control-policy**

View

> System view

Default level

> 3: Manage level

Parameters

> *policy-name*: Name of the certificate attribute access control policy, a string of 1 to 16 characters.

Description

> Use **ip https certificate access-control-policy** to associate the HTTPS service with a certificate attribute access control policy.
>
> Use **undo ip https certificate access-control-policy** to remove the association.
>
> By default, the HTTPS service is not associated with any certificate attribute access control policy.
>
> Association of the HTTPS service with a certificate attribute access control policy can control the access rights of clients.
>
> Related commands: **display ip https**; **pki certificate access-control-policy** (*Security Command Reference*).

Examples

> # Associate the HTTPS server to certificate attribute access control policy **myacl**.
> ```
> <Sysname> system-view
> [Sysname] ip https certificate access-control-policy myacl
> ```

ip https enable

Syntax

> **ip https enable**
>
> **undo ip https enable**

View

> System view

Default level

> 3: Manage level

Parameters

> None

Description

> **Use ip https enable** to enable the HTTPS service.
>
> Use **undo ip https enable** to disable the HTTPS service.

By default, the HTTPS service is disabled.

The device can act as the HTTP server that can be accessed only after the HTTP service is enabled.

Enabling the HTTPS service triggers an SSL handshake negotiation process.

If the local certificate of the device exists, the SSL negotiation succeeds, and the HTTPS service can be started.

If no local certificate exists, the SSL negotiation triggers a certificate application process that often fails because it times out. If that happens, execute the **ip https enable** command multiple times to start the HTTPS service.

Related commands: **display ip https**.

Examples

Enable the HTTPS service.
```
<Sysname> system-view
[Sysname] ip https enable
```

ip https port

Syntax

ip https port *port-number*

undo ip https port

View

System view

Default level

3: Manage level

Parameters

port-number: Port number of the HTTPS service, in the range of 1 to 65535.

Description

Use **ip https port** to configure the port number of the HTTPS service.

Use **undo ip https port** to restore the default.

By default, the port number of the HTTPS service is 443.

Verify that the port number is not used by another service, because this command does not check for conflicts with configured port numbers.

Related commands: **display ip https**.

Examples

Configure the port number of the HTTPS service as 6000.
```
<Sysname> system-view
[Sysname] ip https port 6000
```

ip https ssl-server-policy

Syntax

ip https ssl-server-policy *policy-name*

undo ip https ssl-server-policy

View

System view

Default level

3: Manage level

Parameters

policy-name: Name of an SSL server policy, a string of 1 to 16 characters.

Description

Use **ip https ssl-server-policy** to associate the HTTPS service with an SSL server-end policy.

Use **undo ip https ssl-server-policy** to remove the association.

By default, the HTTPS service is not associated with any SSL server-end policy.

The HTTPS service can be enabled only after this command is configured successfully.

With the HTTPS service enabled, you cannot modify the associated SSL server-end policy or remove the association between the HTTPS service and the SSL server-end policy after the HTTPS service is enabled.

Related commands: **display ip https**; **ssl server-policy** (*Security Command Reference*).

Examples

Associate the HTTPS service with SSL server-end policy **myssl**.

```
<Sysname> system-view
[Sysname] ip https ssl-server-policy myssl
```

ipv6 http dscp

Syntax

ipv6 http dscp *dscp-value*

undo ipv6 http dscp

View

System view

Default level

2: System level

Parameters

dscp-value: Specifies a DSCP value in the range of 0 to 63.

Description

Use **ipv6 http dscp** to set the DSCP value for IPv6 to use for outgoing HTTP packets.

Use **undo ipv6 http dscp** to restore the default.

By default, IPv6 uses the DSCP value 0 for outgoing HTTP packets.

Examples

Set the DSCP value for IPv6 to use for outgoing HTTP packets to 30.

```
<Sysname> system-view
[Sysname] ipv6 http dscp 30
```

lock

Syntax

lock

View

User view

Default level

3: Manage level

Parameters

None

Description

Use **lock** to lock the user interface. This method prevents unauthorized users from using the user interface.

When entering the **lock** command, you are asked to input a password (up to 16 characters) and then confirm it by inputting the password again. To unlock the user interface, you must press **Enter** and input the correct password.

This command is not supported in FIPS mode.

By default, this function is disabled.

Examples

Lock the current user interface.

```
<Sysname> lock
Please input password<1 to 16> to lock current user terminal interface:
Password:
Again:
```

```
                    locked !
```

// The user interface is locked. To unlock it, press **Enter** and enter the password:

```
Password:
<Sysname>
```

parity

Syntax

parity { **even** | **none** | **odd** }

undo parity

View

AUX user interface view

Default level

2: System level

Parameters

even: Performs an even parity check.

none: Performs no parity check.

odd: Performs an odd parity check.

Description

Use **parity** to set a parity check method.

Use **undo parity** to restore the default.

By default, no parity check is performed.

The parity check setting must be the same for the user interfaces of the connecting ports on the device and the target terminal device for communication.

Examples

Configure the Console port to perform odd parity check.

```
<Sysname> system-view
[Sysname] user-interface aux 0
[Sysname-ui-aux0] parity odd
```

protocol inbound

Syntax

In non-FIPS mode:

protocol inbound { **all** | **ssh** | **telnet** }

undo protocol inbound

In FIPS mode:

protocol inbound { **all** | **ssh** }

undo protocol inbound

View

VTY interface view

Default level

3: Manage level

Parameters

all: Specifies both Telnet and SSH in non-FIPS mode, and only SSH in FIPS mode.

ssh: Supports SSH only.

telnet: Supports Telnet only. This keyword is not available in FIPS mode.

Description

Use **protocol inbound** to enable the current user interface to support either Telnet, SSH, or all of them. The configuration takes effect next time you log in.

Use **undo protocol inbound** to restore the default.

By default, both protocols are supported in non-FIPS mode and SSH is used in FIPS mode.

Before configuring a user interface to support SSH, set the authentication mode to **scheme** for the user interface; otherwise, the **protocol inbound ssh** command fails. For more information, see **authentication-mode**.

By default, the authentication mode of the Telnet protocol is **password**.

Examples

Enable the VTYs 0 through 4 to support SSH only.

```
<Sysname> system-view
[Sysname] user-interface vty 0 4
[Sysname-ui-vty0-4] authentication-mode scheme
[Sysname-ui-vty0-4] protocol inbound ssh
```

screen-length

Syntax

screen-length *screen-length*

undo screen-length

View

User interface view

Default level

2: System level

Parameters

screen-length: Number of lines to be displayed on the screen, in the range of 0 to 512. The value of 0 disables pausing between screens of output.

Description

Use **screen-length** to set the number of lines to be displayed on the screen.

Use **undo screen-length** to restore the default.

By default, the screen displays 24 lines.

When screen output pauses, press the **Space** key to display the next screen. Not all terminals support this command setting. For example, assume that you set *screen-length* to 40, but the terminal can display 24 lines in one screen at most. When you press **Space**, the device sends 40 lines to the terminal, but the next screen displays only lines 18 through 40. To view the first 17 lines, you must press the page up or page down key.

To disable multiple-screen output for the current user interface, use the **screen-length disable** command.

Examples

Set the next screen of the AUX user interface 0 to display 30 lines.

```
<Sysname> system-view
[Sysname] user-interface aux 0
```

```
[Sysname-ui-aux0] screen-length 30
```

send

Syntax

send { **all** | *num1* | { **aux** | **vty** } *num2* }

View

User view

Default level

1: Monitor level

Parameters

all: Sends messages to all user interfaces.

aux: Specifies the AUX user interface.

vty: Specifies the VTY user interface.

num1: Absolute number of a user interface. The value range is 0 to 40 on an HP 5500 EI and 0 to 35 on an HP 5500 SI.

num2: Relative number of a user interface. For an AUX user interface, the value range is 0 to 8 on an HP 5500 EI and 0 to 3 on an HP 5500 SI. For a VTY user interface, the value range is 0 to 15.

Description

Use **send** to send messages to the specified user interfaces.

To end message input, press **Ctrl**+**Z**. To cancel message input and return to user view, press **Ctrl**+**C**.

Examples

Send message **hello abc** to the AUX user interface 0.

```
<Sysname> send aux 0
Enter message, end with CTRL+Z or Enter; abort with CTRL+C:
hello abc^Z
Send message? [Y/N]:y
<Sysname>


***
***
***Message from aux0 to aux0
***
hello abc


<Sysname>
```

Assume you are using VTY 0. Before you restart the device, to inform users that are accessing the device through other user interfaces, perform the following steps:

1.   Display information about all users

```
<Sysname> display users
The user application information of the user interface(s):
```

```
   Idx UI       Delay    Type Userlevel
+ 20  VTY 0   00:00:00 TEL   3
  21  VTY 1   00:00:06 TEL   3
Following are more details.
VTY 0   :
        Location: 192.168.1.26
VTY 1   :
        Location: 192.168.1.20
 +    : Current operation user.
 F    : Current operation user work in async mode.
```

// The output shows that a user is using VTY 0.

2. Send a notification to the user of VTY 1.

```
<Sysname> send vty 1
Enter message, end with CTRL+Z or Enter; abort with CTRL+C:
Note please, I will reboot the system in 3 minutes!^Z
Send message? [Y/N]:y
```

// A message is sent to VTY 1, telling that the system will reboot in 3 minutes.

3. If a user is trying to log in through VTY 1, the message appears. (VTY 1 receives the message from VTY 0 when the **interface GigabitEthernet** command is input.)

```
[Sysname] interface gigabiteth

***
***
***Message from vty0 to vty1
***
Note please, I will reboot the system in 3 minutes!
```

set authentication password

Syntax

set authentication password [**hash**] { **cipher** | **simple** } *password*

undo set authentication password

View

User interface view

Default level

3: Manage level

Parameters

hash: Enables hash-based encryption.

{ **cipher** | **simple** } *password*: Specifies a case-sensitive password string. The password length and form requirements vary with the **hash**, **cipher**, and **simple** keyword combinations (see Table 9).

Table 9 Password length and form requirements for the *password* argument

Keyword combination	Password string form	Length (in characters)
simple	Plain text	1 to 16

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Keyword combination	Password string form	Length (in characters)
hash simple	Plain text	1 to 16
cipher	Ciphertext	1 to 53
hash cipher	Ciphertext (hashed form)	1 to 110

Description

Use **set authentication password** to set a local authentication password.

Use **undo set authentication password** to remove the local authentication password.

By default, no local authentication password is set.

For security purposes, all passwords, including passwords configured in plain text, are saved in cipher text to the configuration file.

This command is not supported in FIPS mode.

Related commands: **authentication-mode**.

Examples

Set the local authentication password for the AUX 0 user interface to **hello**.

```
<Sysname> system-view
[Sysname] user-interface aux 0
[Sysname-ui-aux0] authentication-mode password
[Sysname-ui-aux0] set authentication password simple hello
```

Next time you enter the system, the password is required.

shell

Syntax

shell

undo shell

View

VTY user interface view

Default level

3: Manage level

Parameters

None

Description

Use **shell** to enable terminal services on the current user interface.

Use **undo shell** to disable terminal services on the current user interface.

You cannot disable the terminal services on the user interface through which you are logged in.

By default, terminal services are enabled on all user interfaces.

Examples

Disable terminal services on VTYs 0 through 15, which means you cannot log in to the device through VTYs 0 through 15.

```
<Sysname> system-view
[Sysname] user-interface vty 0 15
[Sysname-ui-vty0-15] undo shell
% Disable ui-vty0-15 , are you sure? [Y/N]:y
[Sysname-ui-vty0-15]
```

The following message appears when a terminal tries to Telnet to the device:

```
The connection was closed by the remote host!
```

speed (user interface view)

Syntax

speed speed-value

undo speed

View

AUX user interface view

Default level

2: System level

Parameters

speed-value: Transmission rate in bps. The transmission rates available with asynchronous serial interfaces include: 300 bps, 600 bps, 1200 bps, 2400 bps, 4800 bps, 9600 bps, 19200 bps, 38400 bps, 57600 bps, and 115200 bps. The transmission rate varies with devices and configuration environment.

Description

Use **speed** to set the transmission rate on the user interface.

Use **undo speed** to restore the default transmission rate.

By default, the transmission rate is 9600 bps.

The transmission rate setting must be identical for the user interfaces of the connecting ports on the device and the target terminal device for communication.

Examples

Set the transmission rate on the AUX 0 user interface to 19200 bps.

```
<Sysname> system-view
[Sysname] user-interface aux 0
[Sysname-ui-aux0] speed 19200
```

stopbits

Syntax

stopbits { **1** | **1.5** | **2** }

undo stopbits

View

AUX user interface view

Default level

2: System level

Parameters

1: One stop bit.

1.5: One and a half stop bits.

2: Two stop bits.

Description

Use **stopbits** to set the number of stop bits transmitted per byte.

Use **undo stopbits** to restore the default.

By default, the stop bit is one.

The stop bits setting must be the identical for the user interfaces of the connecting ports on the device and the target device for communication.

Examples

Set the stop bits on the user interface AUX 0 to 1.5.

```
<Sysname> system-view
[Sysname] user-interface aux 0
[Sysname-ui-aux0] stopbits 1.5
```

telnet

Syntax

telnet *remote-host* [*service-port*] [**vpn-instance** *vpn-instance-name*] [**source** { **interface** *interface-type interface-number* | **ip** *ip-address* }]

View

User view

Default level

0: Visit level

Parameters

remote-host: IPv4 address or host name of a remote host, a case-insensitive string of 1 to 20 characters.

service-port: TCP port number of the Telnet service on the remote host. It is in the range of 0 to 65535 and defaults to 23.

vpn-instance *vpn-instance-name*: Specifies the MPLS L3VPN that the remote system belongs to, where *vpn-instance-name* is a case-sensitive string of 1 to 31 characters. This option is only available on the HP 5500 EI switches.

source: Specifies the source interface or source IPv4 address of Telnet packets.

interface *interface-type interface-number*: Specifies the source interface. The source IPv4 address of the Telnet packets sent is the IPv4 address of the specified interface. *interface-type interface-number* represents the interface type and number.

ip *ip-address*: Specifies the source IPv4 address of Telnet packets.

Description

Use **telnet** to Telnet to a remote host.

To terminate the current Telnet connection, press **Ctrl+K** or use the **quit** command.

The source IPv4 address or source interface specified by this command is applicable to the current Telnet connection only.

Examples

Telnet to the remote host 1.1.1.2, specifying the source IP address of Telnet packets as 1.1.1.1.
```
<Sysname> telnet 1.1.1.2 source ip 1.1.1.1
```

telnet client dscp

Syntax

telnet client dscp *dscp-value*

undo telnet client dscp

View

System view

Default level

2: System level

Parameters

dscp-value: Specifies a DSCP value in the range of 0 to 63.

Description

Use **telnet client dscp** to set the DSCP value for IPv4 to use for outgoing Telnet packets on a Telnet client.

Use **undo telnet client dscp** to restore the default.

By default, IPv4 uses the DSCP value 16 for outgoing Telnet packets on a Telnet client.

Examples

Set the DSCP value for IPv4 to use for outgoing Telnet packets to 30 on a Telnet client.
```
<Sysname> system-view
[Sysname] telnet client dscp 30
```

telnet client ipv6 dscp

Syntax

telnet client ipv6 dscp *dscp-value*

undo telnet client ipv6 dscp

View

System view

Default level

2: System level

Parameters

dscp-value: Specifies a DSCP value in the range of 0 to 63.

Description

Use **telnet client ipv6 dscp** to set the DSCP value for IPv6 to use for outgoing Telnet packets on a Telnet client.

Use **undo telnet client ipv6 dscp** to restore the default.

By default, IPv6 uses the DSCP value 0 for outgoing Telnet packets on a Telnet client.

Examples

Set the DSCP value for IPv6 to use for outgoing Telnet packets to 30 on a Telnet client.
```
<Sysname> system-view
[Sysname] telnet client ipv6 dscp 30
```

telnet client source

Syntax

telnet client source { **interface** *interface-type interface-number* | **ip** *ip-address* }

undo telnet client source

View

System view

Default level

2: System level

Parameters

interface *interface-type interface-number*: Specifies the source interface. The source IPv4 address of the Telnet packets sent is the IPv4 address of the specified interface. *interface-type interface-number* represents the interface type and number.

ip *ip-address*: Specifies the source IPv4 address of Telnet packets.

Description

Use **telnet client source** to specify the source IPv4 address or source interface for sending Telnet packets when the device serves as a Telnet client.

Use **undo telnet client source** to remove the source IPv4 address or source interface for sending Telnet packets.

By default, no source IPv4 address or source interface for sending Telnet packets is specified. The source IPv4 address is selected by routing.

The source IPv4 address or source interface specified by this command is applicable all Telnet connections.

If you use both this command and the **telnet** command to specify the source IPv4 address or source interface, the source IPv4 address or interface specified by the **telnet** command takes effect.

Related commands: **display telnet client configuration**.

Examples

Specify the source IPv4 address for sending Telnet packets when the device serves as a Telnet client as 1.1.1.1.
```
<Sysname> system-view
[Sysname] telnet client source ip 1.1.1.1
```

telnet ipv6

telnet ipv6 *remote-host* [**-i** *interface-type interface-number*] [*port-number*] [**vpn-instance** *vpn-instance-name*]

View

User view

Default level

0: Visit level

Parameters

remote-host: IP address or host name of a remote host, a case-insensitive string of 1 to 46 characters.

-i *interface-type interface-number*: Specifies the outbound interface for sending Telnet packets, where *interface-type interface-number* represents the interface type and number. If the destination address is a link-local address, provide the **–i** *interface-type interface-number* argument.

port-number: TCP port number for the remote host to provide the Telnet service. It is in the range of 0 to 65535 and defaults to 23.

vpn-instance *vpn-instance-name*: Specifies the MPLS L3VPN that the remote system belongs to, where *vpn-instance-name* is a case-sensitive string of 1 to 31 characters. This option is only available on the HP 5500 EI switches.

Description

Use **telnet ipv6** to Telnet to a remote host in an IPv6 network. To terminate the current Telnet connection, press **Ctrl+K** or use the **quit** command.

Examples

Telnet to the remote host with the IPv6 address 5000::1.
```
<Sysname> telnet ipv6 5000::1
```

telnet server dscp

Syntax

telnet server dscp *dscp-value*

undo telnet server dscp

View

System view

Default level

2: System level

Parameters

dscp-value: Specifies a DSCP value in the range of 0 to 63.

Description

Use **telnet server dscp** to set the DSCP value for IPv4 to use for outgoing Telnet packets on a Telnet server.

Use **undo telnet server dscp** to restore the default.

By default, IPv4 uses the DSCP value 48 for outgoing Telnet packets on a Telnet server.

Examples

Set the DSCP value for IPv4 to use for outgoing Telnet packets to 30 on a Telnet server.

```
<Sysname> system-view
[Sysname] telnet server dscp 30
```

telnet server enable

Syntax

telnet server enable

undo telnet server enable

View

System view

Default level

3: Manage level

Parameters

None

Description

Use **telnet server enable** to enable the Telnet server.

Use **undo telnet server enable** to disable the Telnet server.

The Telnet server is disabled by default.

Examples

Enable the Telnet server.

```
<Sysname> system-view
[Sysname] telnet server enable
```

telnet server ipv6 dscp

Syntax

telnet server ipv6 dscp *dscp-value*

undo telnet server ipv6 dscp

View

System view

Default level

2: System level

Parameters

dscp-value: Specifies a DSCP value in the range of 0 to 63.

Description

Use **telnet server ipv6 dscp** to set the DSCP value for IPv6 to use for outgoing Telnet packets on a Telnet server.

Use **undo telnet server ipv6 dscp** to restore the default.

By default, IPv6 uses the DSCP value 0 for outgoing Telnet packets on a Telnet server.

Examples

Set the DSCP value for IPv6 to use for outgoing Telnet packets to 30 on a Telnet server.

```
<Sysname> system-view
[Sysname] telnet server ipv6 dscp 30
```

terminal type

Syntax

terminal type { **ansi** | **vt100** }

undo terminal type

View

User interface view

Default level

2: System level

Parameters

ansi: Specifies the terminal display type as ANSI.

vt100: Specifies the terminal display type as VT100.

Description

Use **terminal type** to configure the type of terminal display of the current user interface.

Use **undo terminal type** to restore the default.

By default, the terminal display type is ANSI.

The device supports two types of terminal display: ANSI and VT100. HP recommends you to set the display type of both the device and the client to VT100. If the device and the client use different display types (for example, HyperTerminal or Telnet terminal) or both are set to ANSI, when the total number of characters of the currently edited command line exceeds 80, an anomaly such as cursor corruption or abnormal display of the terminal display may occur on the client.

Examples

Set the terminal display type to VT100.

```
<Sysname> system-view
[Sysname] user-interface vty 0
[Sysname-ui-vty0] terminal type vt100
```

user privilege level

Syntax

user privilege level *level*

undo user privilege level

View

User interface view

Default level

3: Manage level

Parameters

level: Specifies a user privilege level, in the range of 0 to 3.

Description

Use **user privilege level** to configure the user privilege level. Users logging into the user interface are assigned a user privilege level.

Use **undo user privilege level** to restore the default.

By default, the default command level is 3 for the console user interface and 0 for other user interfaces.

User privilege levels include visit, monitor, system, and manage, represented by the number 0, 1, 2 and 3 respectively. The administrator can change the user privilege level when necessary.

This command is not supported in FIPS mode.

Examples

Set the command level for users logging in through VTY 0 to 0.

```
<Sysname> system-view
[Sysname] user-interface vty 0
[Sysname-ui-vty0] user privilege level 0
```

After you Telnet to the device through VTY 0, the terminal only displays commands of level 0 in the help information:

```
<Sysname> ?
  cfd      Connectivity fault detection (IEEE 802.1ag)
  cluster  Run cluster command
  display  Display current system information
  ping     Ping function
  quit     Exit from current command view
  ssh2     Establish a secure shell client connection
  super    Set the current user priority level
  telnet   Establish one TELNET connection
  tracert  Trace route function
```

user-interface

Syntax

user-interface { *first-num1* [*last-num1*] | { **aux** | **vty** } *first-num2* [*last-num2*] }

View

System view

Default level

2: System level

Parameters

first-num1: Absolute number of the first user interface. The value range is 0 to 40 on an HP 5500 EI and 0 to 35 on an HP 5500 SI.

last-num1: Absolute number of the last user interface. The value range is 1 to 40 on an HP 5500 EI and 1 to 35 on an HP 5500 SI. This argument cannot be smaller than *first-num1*.

aux: Specifies the AUX user interface.

vty: Specifies the VTY user interface.

first-num2: Relative number of the first user interface. For an AUX user interface, the value range is 0 to 8 on an HP 5500 EI and 0 to 3 on an HP 5500 SI. For a VTY user interface, the value range is 0 to 15.

last-num2: Relative number of the last user interface. For an AUX user interface, the value range is 1 to 8 on an HP 5500 EI and 1 to 3 on an HP 5500 SI. For a VTY user interface, the value range is 1 to 15. This argument cannot be smaller than *first-num 2*.

Description

Use **user-interface** to enter a single or multiple user interface views.

In a single user interface view, the configuration takes effect in the user view only.

In multiple user interface views, the configuration takes effect in these user views.

Examples

Enter the user interface view of AUX 0.

```
<Sysname> system-view
[Sysname] user-interface aux 0
[Sysname-ui-aux0]
```

Enter the user interface views of VTYs 0 to 4.

```
<Sysname> system-view
[Sysname] user-interface vty 0 4
[Sysname-ui-vty0-4]
```

FTP configuration commands

FIPS compliance

FTP is not supported in FIPS mode.

FTP server configuration commands

display ftp-server

Syntax

display ftp-server [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

3: Manage level

Parameters

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display ftp-server** to display the FTP server configuration.

After configuring FTP server parameters, you may verify them with this command.

Related commands: **ftp server enable**, **ftp timeout**, and **ftp update**.

Examples

Display the FTP server configuration.
```
<Sysname> display ftp-server
   FTP server is running
   Max user number:           1
   User count:                1
   Timeout value(in minute):  30
   Put Method:                fast
```

Table 10 Command output

Field	Description
Max user number	Maximum number of concurrent login users.
User count	Number of the current login users.
Timeout value (in minute)	Allowed idle time of an FTP connection. If there is no packet exchange between the FTP server and client during the time frame, the FTP connection will be disconnected.
Put Method	File update method of the FTP server, **fast** or **normal**.

display ftp-user

Syntax

display ftp-user [| { begin | exclude | include } *regular-expression*]

View

Any view

Default level

3: Manage level

Parameters

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display ftp-user** to display the detailed information of current FTP users.

Examples

Display the detailed information of FTP users.

```
<Sysname> display ftp-user
  UserName          HostIP         Port      Idle           HomeDir
  ftp               192.168.1.54   1190      0              flash:
```

If the name of the login user exceeds 10 characters, the excessive characters will be displayed in the next line and left justified. For example, if the user name is **administrator**, the following information will appear:

```
<Sysname> display ftp-user
  UserName          HostIP         Port      Idle           HomeDir
administra
tor                 192.168.0.152  1031      0              flash:
```

Table 11 Command output

Field	Description
UserName	Name of the currently logged-in user
HostIP	IP address of the currently logged-in user
Port	Port which the currently logged-in user is using
Idle	Duration time of the FTP connection, in minutes
HomeDir	Authorized path of the logged-in user

free ftp user

Syntax

free ftp user *username*

View

User view

Default level

3: Manage level

Parameters

username: Username. You can use the **display ftp-user** command to view FTP login user information.

Description

Use **free ftp user** to manually release the FTP connection established by the specified user.

This command releases the FTP connection established by the specified user no matter whether the user is transmitting a file.

Examples

Manually release the FTP connection established with username **ftpuser**.

```
<Sysname> free ftp user ftpuser
Are you sure to free FTP user ftpuser? [Y/N]:y
<Sysname>
```

ftp server acl

Syntax

ftp server acl *acl-number*

undo ftp server acl

View

System view

Default level

3: Manage level

Parameters

acl-number: Basic ACL number, in the range of 2000 to 2999.

Description

Use **ftp server acl** to use an ACL to control FTP clients' access to the FTP server.

Use **undo ftp server acl** to restore the default.

By default, no ACL is used to control FTP clients' access to the FTP server.

An ACL enables the FTP server to permit the FTP requests from specific FTP clients. This configuration only filters the FTP connections to be established, and has no effect on existing FTP connections and operations. If you execute the command multiple times, the last specified ACL takes effect.

Examples

Associate the FTP service with ACL 2001 to allow only the client 1.1.1.1 to access the FTP server through FTP.

```
<Sysname> system-view
[Sysname] acl number 2001
[Sysname-acl-basic-2001] rule 0 permit source 1.1.1.1 0
[Sysname-acl-basic-2001] rule 1 deny source any
[Sysname-acl-basic-2001] quit
[Sysname] ftp server acl 2001
```

ftp server dscp

Syntax

ftp server dscp *dscp-value*

undo ftp server dscp

View

System view

Default level

2: System level

Parameters

dscp-value: Specifies a DSCP value in the range of 0 to 63.

Description

Use **ftp server dscp** to set the DSCP value for IP to use for outgoing FTP packets on an FTP server.

Use **undo ftp server dscp** to restore the default.

By default, IP uses the DSCP value 0 for outgoing FTP packets on a FTP server.

Examples

Set the DSCP value for IP to use for outgoing FTP packets to 30 on an FTP server.

```
<Sysname> system-view
[Sysname] ftp server dscp 30
[Sysname]
```

ftp server enable

Syntax

ftp server enable

undo ftp server

View

System view

Default level

3: Manage level

Parameters

None

Description

Use **ftp server enable** to enable the FTP server and allow the login of FTP users.

Use **undo ftp server** to disable the FTP server.

By default, the FTP server is disabled.

Examples

Enable the FTP server.
```
<Sysname> system-view
[Sysname] ftp server enable
[Sysname]
```

ftp timeout

Syntax

ftp timeout *minute*

undo ftp timeout

View

System view

Default level

3: Manage level

Parameters

minute: Idle-timeout timer in minutes, in the range of 1 to 35791.

Description

Use **ftp timeout** to set the idle-timeout timer.

Use **undo ftp timeout** to restore the default.

By default, the FTP idle time is 30 minutes.

If the idle time of an FTP connection exceeds the FTP timeout value, the FTP server breaks the connection to save resources.

Examples

Set the idle-timeout timer to 36 minutes.
```
<Sysname> system-view
[Sysname] ftp timeout 36
```

ftp update

Syntax

ftp update { **fast** | **normal** }

undo ftp update

View

System view

Default level

3: Manage level

Parameters

fast: Fast update. In this mode, the FTP server writes the complete file to the memory before writing it to the storage medium.

normal: Normal update. In this mode, the FTP server writes the data of a file from the memory to the storage medium multiple times, with up to 4096 bytes per time.

Description

Use **ftp update** to set the file update mode that the FTP server uses while receiving data.

Use **undo ftp update** to restore the default.

By default, the file update mode is **normal**.

Examples

Set the FTP update mode to **normal**.

```
<Sysname> system-view
[Sysname] ftp update normal
```

FTP client configuration commands

Before executing the FTP client configuration commands in this section, check that you have configured the proper authority, including view the files under the current directory, read/download the specified file, create directory/upload files, and rename/remove files for users on the FTP server.

The prompt information for the examples varies with FTP server types.

ascii

Syntax

ascii

View

FTP client view

Default level

3: Manage level

Parameters

None

Description

Use **ascii** to set the file transfer mode to ASCII.

By default, the file transfer mode is ASCII.

The carriage return characters vary with operating systems. For example, HP and Windows use characters **/r/n**, and Linux uses characters **/n**. To transfer files between two systems that use different carriage return characters, determine FTP transfer mode according to the file type.

FTP transfers files in the following modes:

- **Binary mode**—for program file or picture transmission.
- **ASCII mode**—for text file transmission.

Related commands: **binary**.

Examples

\# Set the file transfer mode to ASCII.

```
[ftp] ascii
200 Type set to A.
```

binary

Syntax

binary

View

FTP client view

Default level

3: Manage level

Parameters

None

Description

Use **binary** to set the file transfer mode to binary (flow) mode.

By default, the transfer mode is ASCII mode.

Related commands: **ascii**.

Examples

\# Set the file transfer mode to **binary**.

```
[ftp] binary
200 Type set to I.
```

bye

Syntax

bye

View

FTP client view

Default level

3: Manage level

Parameters

None

Description

Use **bye** to disconnect from the remote FTP server and return to user view.

If no connection is established between the device and the remote FTP server, use this command to return to user view directly.

Related commands: **close**, **disconnect**, and **quit**.

Examples

\# Terminate the connection with the remote FTP server and return to user view.

```
[ftp] bye
221 Server closing.
```

cd

Syntax

cd { *directory* | **..** | **/** }

View

FTP client view

Default level

3: Manage level

Parameters

directory: Name of the target directory, in the format [*drive*:][/]*path,* where *drive* represents the storage medium name, typically flash or cf. If no drive information is provided, the argument represents a folder or subfolder in the current directory. If the specified target directory does not exist, you are still in the same directory after executing the **cd** command. For more information about the *drive* and *path* arguments, see *Fundamentals Configuration Guide.*

..: Returns to the upper directory. Executing the **cd ..** command is the same as executing the **cdup** command. If the current working directory is the FTP root directory, or no upper directory exists, the current working directory does not change when the **cd ..** command is executed. This argument does not support command line online help.

/: Returns to the FTP root directory. The keyword does not support command line online help.

Description

Use **cd** to change the working directory on the FTP server to access another authorized directory.

Related commands: **pwd**.

Examples

\# Change the working directory to the current directory's sub-directory **logfile**.

```
[ftp] cd logfile
250 CWD command successful.
```

\# Change the working directory to the FTP root directory's sub-directory **folder**.

```
[ftp] cd /folder
250 CWD command successful.
```

cdup

Syntax

cdup

View

FTP client view

Default level

3: Manage level

Parameters

None

Description

Use **cdup** to exit the current directory and enter the upper directory of the FTP server.

This command does not change the working directory if the directory is the FTP root directory.

Related commands: **cd** and **pwd**.

Examples

Change the working directory to the upper directory.

```
[ftp] pwd
257 "/ftp/subdir" is current directory.
[ftp] cdup
200 CDUP command successful.
[ftp] pwd
257 "/ftp" is current directory.
```

close

Syntax

close

View

FTP client view

Default level

3: Manage level

Parameters

None

Description

Use **close** to terminate the connection to the FTP server, but remain in FTP client view.

This command is equal to the **disconnect** command.

Examples

Terminate the connection to the FTP server and remain in FTP client view.

```
[ftp] close
221 Server closing.
[ftp]
```

debugging

Syntax

debugging

undo debugging

View

FTP client view

Default level

1: Monitor level

Parameters

None

Description

Use **debugging** to enable FTP client debugging.

Use **undo debugging** to disable FTP client debugging.

By default, FTP client debugging is disabled.

Examples

The device serves as the FTP client. Enable FTP client debugging and use the active mode to download file **sample.file** from the current working directory of the FTP server.

```
<Sysname> terminal monitor
<Sysname> terminal debugging
<Sysname> ftp 192.168.1.46
Trying 192.168.1.46 ...
Press CTRL+K to abort
Connected to 192.168.1.46.
220 FTP service ready.
User(192.168.1.46:(none)):ftp
331 Password required for ftp.
Password:
230 User logged in.

[ftp]undo passive
FTP: passive is off

[ftp] debugging
FTP: debugging switch is on

[ftp] get sample.file
```

```
---> PORT 192,168,1,44,4,21
200 Port command okay.
 The parsed reply is 200
---> RETR sample.file
150 Opening ASCII mode data connection for /sample.file.
 The parsed reply is 150
FTPC: File transfer started with the signal light turned on.
FTPC: File transfer completed with the signal light turned off.
.226 Transfer complete.
FTP: 3304 byte(s) received in 4.889 second(s), 675.00 byte(s)/sec.

[ftp]
```

Table 12 Command output

Field	Description
--> PORT 192,168,1,44,4,21	FTP order, where **192,168,1,44** indicates the destination IP address, and **4,21** indicates the port number (4*256+21).
The parsed reply is	Received reply code, defined in RFC 959.
--> RETR	FTP order for downloading a file.

delete

Syntax

delete *remotefile*

View

FTP client view

Default level

3: Manage level

Parameters

remotefile: File name.

Description

Use **delete** to permanently delete a specified file on the remote FTP server.

To perform this operation, you must have delete permissions on the FTP server.

Examples

Delete file **temp.c**.
```
[ftp] delete temp.c
250 DELE command successful.
```

dir

Syntax

dir [*remotefile* [*localfile*]]

FTP client view

3: Manage level

remotefile: Name of the file or directory on the remote FTP server.

localfile: Name of the local file to save the displayed information.

Use **dir** to display detailed information about the files and subdirectories under the remote FTP server's current working directory.

Use **dir** *remotefile* to display detailed information about a specific file or directory on the remote FTP server.

Use **dir** *remotefile localfile* to save detailed information about a specific file or directory on the remote FTP server to a local file.

The **ls** command displays only the names of files and directories. The **dir** command can display other related information of the files and directories, such as the size, and the date they were created.

Display detailed information about the files and subdirectories under the current working directory on the remote FTP server.

```
[ftp] dir
227 Entering Passive Mode (192,168,1,46,5,68).
125 ASCII mode data connection already open, transfer starting for /*.
drwxrwxrwx   1 noone     nogroup          0 Aug 08  2006 logfile
-rwxrwxrwx   1 noone     nogroup   20471748 May 11 10:21 test.bin
-rwxrwxrwx   1 noone     nogroup       4001 Dec 08  2007 config.cfg
-rwxrwxrwx   1 noone     nogroup       3608 Jun 13  2007 startup.cfg
drwxrwxrwx   1 noone     nogroup          0 Dec 03  2007 test
-rwxrwxrwx   1 noone     nogroup        299 Oct 15  2007 key.pub
226 Transfer complete.
FTP: 394 byte(s) received in 0.189 second(s), 2.00K byte(s)/sec.

[ftp]
```

Save information about file **ar-router.cfg** to local file **aa.txt**.

```
[ftp] dir ar-router.cfg aa.txt
227 Entering Passive Mode (192,168,1,50,17,158).
125 ASCII mode data connection already open, transfer starting for /ar-router.cfg.
....226 Transfer complete.
FTP: 67 byte(s) received in 4.600 second(s), 14.00 byte(s)/sec.
```

View the content of **aa.txt**.

```
[ftp] quit
<Sysname> more aa.txt
-rwxrwxrwx   1 noone     nogroup       3077 Jun 20 15:34 ar-router.cfg
```

disconnect

Syntax

disconnect

View

FTP client view

Default level

3: Manage level

Parameters

None

Description

Use **disconnect** to disconnect from the remote FTP server but remain in FTP client view.

This command is equal to the **close** command.

Examples

\# Disconnect from the remote FTP server but remain in FTP client view.

```
[ftp] disconnect
221 Server closing.
[ftp]
```

display ftp client configuration

Syntax

display ftp client configuration [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

1: Monitor level

Parameters

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display ftp client configuration** to display the source IP address configuration of the FTP client.

This command displays the source IP address configuration of the FTP client. If the specified source IP address is active, this command displays the source IP address. If the specified source interface is active, this command displays the source interface.

Related commands: **ftp client source**.

Examples

Display the source IP address configuration of the FTP client.
```
<Sysname> display ftp client configuration
 The source IP address is 192.168.0.123
```

ftp

Syntax

ftp [*server-address* [*service-port*] [**vpn-instance** *vpn-instance-name*] [**source** { **interface** *interface-type* *interface-number* | **ip** *source-ip-address* }]]

View

User view

Default level

3: Manage level

Parameters

server-address: IP address or host name of a remote FTP server, a string of 1 to 20 characters.

service-port: TCP port number of the remote FTP server, in the range of 0 to 65535. The default value is 21.

vpn-instance *vpn-instance-name*: Specifies the MPLS L3VPN that the FTP server belongs to. The *vpn-instance-name* argument is a case-sensitive string of 1 to 31 characters. Only the HP 5500 EI switch series supports this option.

source { **interface** *interface-type interface-number* | **ip** *source-ip-address* }]: Specifies the source address used to establish an FTP connection.

- **interface** *interface-type interface-number*: Specifies the source interface by its type and number. The primary IP address configured on this interface is the source address of the transmitted FTP packets. If no primary IP address is configured on the source interface, the connection fails.
- **ip** *source-ip-address*: Specifies the source IP address of the transmitted FTP packets. This source address must be the one that has been configured on the device.

Description

Use **ftp** to log in to the remote FTP server and enter FTP client view.

This command applies to IPv4 networks only.

If you use this command without specifying any parameters, you will simply enter the FTP client view without logging in to the FTP server.

If you specify the parameters, you will be prompted to enter the username and password for accessing the FTP server.

Examples

Log in the server 192.168.0.211. The source IP address of sent FTP packets is 192.168.0.212.
```
<Sysname1> ftp 192.168.0.211 source ip 192.168.0.212
Trying 192.168.0.211 ...
Press CTRL+K to abort
Connected to 192.168.0.211.
```

```
220 FTP Server ready.
User(192.168.0.211:(none)):abc
331 Password required for abc
Password:
230 User logged in.

[ftp]
```

ftp client dscp

Syntax

ftp client dscp *dscp-value*

undo ftp client dscp

View

System view

Default level

2: System level

Parameters

dscp-value: Specifies a DSCP value in the range of 0 to 63.

Description

Use **ftp client dscp** to set the DSCP value for IPv4 to use for outgoing FTP packets on an FTP client.

Use **undo ftp client dscp** to restore the default.

By default, IPv4 uses the DSCP value 0 for outgoing FTP packets on an FTP client.

Examples

Set the DSCP value for IPv4 to use for outgoing FTP packets to 30 on an FTP client.

```
<Sysname> system-view
[Sysname] ftp client dscp 30
```

ftp client ipv6 dscp

Syntax

ftp client ipv6 dscp *dscp-value*

undo ftp client ipv6 dscp

View

System view

Default level

2: System level

Parameters

dscp-value: Specifies a DSCP value in the range of 0 to 63.

Description

Use **ftp client ipv6 dscp** to set the DSCP value for IPv6 to use for outgoing FTP packets on an FTP client.

Use **undo ftp client ipv6 dscp** to restore the default.

By default, IPv6 uses the DSCP value 0 for outgoing FTP packets on an FTP client.

Examples

\# Set the DSCP value for IPv6 to use for outgoing FTP packets to 30 on an FTP client.

```
<Sysname> system-view
[Sysname] ftp client ipv6 dscp 30
```

ftp client source

Syntax

ftp client source { **interface** *interface-type interface-number* | **ip** *source-ip-address* }

undo ftp client source

View

System view

Default level

2: System level

Parameters

interface *interface-type interface-number*: Specifies the source interface for establishing FTP connections. The primary IP address of the source interface is used as the source IP address of packets sent to an FTP server. If the source interface has no primary IP address specified, no FTP connection can be established.

ip *source-ip-address*: Specifies the source IP address of packets sent to an FTP server, which is one of the IP addresses of the device.

Description

Use **ftp client source** to specify the source IP address of packets sent to an FTP server.

Use **undo ftp client source** to restore the default.

By default, the source IP address is the IP address of the output interface of the route to the server is used as the source IP address.

If you use the **ftp client source** command to first configure a source interface and then a source IP address, the source IP address overwrites the source interface, and vice versa.

If you first use the **ftp client source** command to specify a source IP address and then use the **ftp** command to specify another source IP address, the latter is used.

The source IP address specified with the **ftp client source** command applies to all FTP connections while the one specified with the **ftp** command applies to the current FTP connection only.

Related commands: **display ftp client configuration**.

Examples

\# Specify the source IP address of packets sent to an FTP server as 2.2.2.2.

```
<Sysname> system-view
[Sysname] ftp client source ip 2.2.2.2
```

\# Specify the IP address of interface VLAN-interface 1 as the source IP address of packets sent to an FTP server.

```
<Sysname> system-view
```

```
[Sysname] ftp client source interface vlan-interface 1
```

ftp ipv6

Syntax

ftp ipv6 [*server-address* [*service-port*] [**vpn-instance** *vpn-instance-name*] [**source ipv6** *source-ipv6-address*] [**-i** *interface-type interface-number*]]

View

User view

Default level

3: Manage level

Parameters

server-address: IP address or host name of the remote FTP server.

service-port: TCP port number of the FTP server, in the range of 0 to 65535. The default value is 21.

source ipv6 *source-ipv6-address*: Specifies a source IPv6 address for transmitted FTP packets. This address must be an IPv6 address that has been configured on the device.

-i *interface-type interface-number*: Specifies an output interface by its type and number. This parameter can be used only when the FTP server address is a link local address and the specified output interface has a link local address. For the configuration of link local addresses, see *Layer 3—IP Services Configuration Guide*.

vpn-instance *vpn-instance-name*: Specifies the MPLS L3VPN that the FTP server belongs to. The *vpn-instance-name* argument is a case-sensitive string of 1 to 31 characters. Only the HP 5500 EI switch series supports this option.

Description

Use **ftp ipv6** to log in to the FTP server and enter FTP client view.

This command applies to IPv6 networks only.

If you use this command without specifying any parameters, you will simply enter the FTP client view without logging in to an FTP server.

If you specify the parameters, enter the username and password for accessing the FTP server.

Examples

Log in to the FTP server with IPv6 address 3000::200.

```
<Sysname> ftp ipv6 3000::200
Trying 3000::200 ...
Press CTRL+K to abort
Connected to 3000::200.
220 Welcome!
User(3000::200:(none)): MY_NAME
331 Please specify the password.
Password:
230 Login successful.
[ftp]
```

Log in to the FTP server with IPv6 address 3000::200 in VPN 1.

```
<Sysname> ftp ipv6 3000::200 vpn-instance vpn1
```

```
Trying 3000::200 ...
Press CTRL+K to abort
Connected to 3000::200.
220 Welcome!
User(3000::200:(none)): MY_NAME
331 Please specify the password.
Password:
230 Login successful.
[ftp]
```

get

Syntax

get *remotefile* [*localfile*]

View

FTP client view

Default level

3: Manage level

Parameters

remotefile: Name of the file to be downloaded.

localfile: File name used after a file is downloaded and saved locally. If this argument is not specified, the local file uses the name of the source file on the FTP server by default.

Description

Use **get** to download a file from a remote FTP server and save it.

Examples

Download file **testcfg.cfg** to the root directory of the master's storage medium, and save it as **newest.cfg**.

```
[ftp] get testcfg.cfg newest.cfg

227 Entering Passive Mode (192,168,1,46,4,47).
125 ASCII mode data connection already open, transfer starting for /testcfg.cfg.
..226 Transfer complete.
FTP: 3608 byte(s) received in 2.050 second(s), 1.00K byte(s)/sec.
```

Download file **testcfg.cfg** to the Flash root directory of the subordinate device with the member ID 2, and save it as **newest.cfg**.

```
[ftp] get testcfg.cfg slot2#flash:/newest.cfg

227 Entering Passive Mode (192,168,1,46,4,48).
125 ASCII mode data connection already open, transfer starting for /testcfg.cfg.
226 Transfer complete.
FTP: 3608 byte(s) received in 2.322 second(s), 1.00K byte(s)/sec.
```

lcd

Syntax

lcd

View

FTP client view

Default level

3: Manage level

Parameters

None

Description

Use **lcd** to display the local working directory of the FTP client.

Examples

Display the local working directory.

```
[ftp] lcd
FTP: Local directory now flash:/clienttemp.
```

The output shows that the working directory of the FTP client before execution of the **ftp** command is **flash:/clienttemp**.

ls

Syntax

ls [*remotefile* [*localfile*]]

View

FTP client view

Default level

3: Manage level

Parameters

remotefile: Filename or directory on the remote FTP server.

localfile: Name of a local file used to save the displayed information.

Description

Use **ls** to display information about all files and subdirectories under the remote FTP server's current working directory. The file names and subdirectory names are displayed.

Use **ls** *remotefile* to display information about a specific file or subdirectory.

Use **ls** *remotefile localfile* to save information about a specific file or subdirectory to a local file.

The **ls** command displays only the names of files and directories on the FTP server. The **dir** command can display other related information of the files and directories, such as the size and the date they were created.

Examples

Display information about all files and subdirectories under the FTP server's current working directory.

```
[ftp] ls
227 Entering Passive Mode (192,168,1,50,17,165).
125 ASCII mode data connection already open, transfer starting for /*.
ar-router.cfg
logfile
mainar.app
arbasic.app
ftp
test
bb.cfg
testcfg.cfg
226 Transfer complete.
FTP: 87 byte(s) received in 0.132 second(s) 659.00 byte(s)/sec.
```

Display information about all files and subdirectories under the subdirectory **logfile** of the FTP server's current working directory.

```
[ftp] ls logfile
227 Entering Passive Mode (192,168,1,50,10,49).
125 ASCII mode data connection already open, transfer starting for /logfile/*.
logfile.log
a.cfg
226 Transfer complete.
FTP: 20 byte(s) received in 0.075 second(s), 266.00 byte(s)/sec.
```

Save information about directory **logfile** to file **aa.txt**.

```
[ftp] ls logfile aa.txt
227 Entering Passive Mode (192,168,1,50,4,3).
125 ASCII mode data connection already open, transfer starting for /logfile/*.
....226 Transfer complete.
FTP: 20 byte(s) received in 3.962 second(s), 5.00 byte(s)/sec.
```

View the content of file **aa.txt**.

```
[ftp] quit
<Sysname> more aa.txt
.
..
logfile.log
```

mkdir

Syntax

mkdir *directory*

View

FTP client view

Default level

3: Manage level

Parameters

directory: Name of the directory to be created.

Description

Use **mkdir** to create a subdirectory in the current directory on the remote FTP server.

You must have permissions on the FTP server.

Examples

Create subdirectory **mytest** under the FTP server's current working directory.

```
[ftp] mkdir mytest
257 "/mytest" new directory created.
```

open

Syntax

open *server-address* [*service-port*]

View

FTP client view

Default level

3: Manage level

Parameters

server-address: IP address or host name of a remote FTP server.

service-port: Port number of the remote FTP server, in the range of 0 to 65535. The default value is 21.

Description

Use **open** to log in to the IPv4 FTP server under FTP client view.

At login, enter the username and password. If your input is correct, the login succeeds.

If you have logged in to the IPv4 FTP server, you cannot use the **open** command to log in to another server. To do so, you must disconnect from the current server first.

Related commands: **close**.

Examples

In FTP client view, log in to the FTP server with the IP address of 192.168.1.50.

```
<Sysname> ftp
[ftp] open 192.168.1.50
Trying 192.168.1.50 ...
Press CTRL+K to abort
Connected to 192.168.1.50.
220 FTP service ready.
User(192.168.1.50:(none)):aa
331 Password required for aa.
Password:
230 User logged in.

[ftp]
```

open ipv6

Syntax

open ipv6 *server-address* [*service-port*] [**-i** *interface-type interface-number*]

View

FTP client view

Default level

3: Manage level

Parameters

server-address: IP address or host name of the remote FTP server.

service-port: Port number of the remote FTP server, in the range of 0 to 65535. The default value is 21.

-i *interface-type interface-number*: Specifies an output interface by its type and number. This parameter can be used only when the FTP server address is a link local address and the specified output interface has a link local address. For the configuration of link local addresses, see *Layer 3—IP Services Configuration Guide*.

Description

Use **open ipv6** to log in to the IPv6 FTP server in FTP client view.

At login, enter the username and password for accessing the FTP server. If your input is correct, the login succeeds.

Related commands: **close**.

Examples

Log in to the FTP server at 3000::200 in FTP client view.
```
<Sysname> ftp
[ftp] open ipv6 3000::200
Trying 3000::200 ...
Press CTRL+K to abort
Connected to 3000::200.
220 Welcome!
User(3000::200:(none)): MY_NAME
331 Please specify the password.
Password:
230 Login successful.
```

passive

Syntax

passive

undo passive

View

FTP client view

Default level

3: Manage level

Parameters

None

Description

Use **passive** to set the data transmission mode to **passive**.

Use **undo passive** to set the data transmission mode to **active**.

The default transmission mode is **passive**.

Data transmission modes fall into the passive mode and the active mode. In active mode, the FTP server initiates a data connection request. In passive mode, the FTP client initiates a data connection request. This command is mainly used in conjunction with a firewall to restrict FTP session establishment between private and public network users.

Examples

Set the data transmission mode to **passive**.

```
[ftp] passive
FTP: passive is on
```

put

Syntax

put *localfile* [*remotefile*]

View

FTP client view

Default level

3: Manage level

Parameters

localfile: Name of the local file to be uploaded.

remotefile: File name used after a file is uploaded and saved on the FTP server.

Description

Use **put** to upload a file on the client to the remote FTP server.

By default, if no name is assigned to the file to be saved on the FTP server, the name of the source file is used.

When a file is uploaded, it is saved in the user's authorized directory, which can be set with the **authorization-attribute** command on the remote server.

Examples

Upload source file **vrpcfg.cfg** on the master to the remote FTP server and save it as **ftpclient.cfg**.

```
[ftp] put vrpcfg.cfg ftpclient.cfg
227 Entering Passive Mode (192,168,1,46,4,50).
125 ASCII mode data connection already open, transfer starting for /ftpclient.cfg.
226 Transfer complete.
FTP: 1366 byte(s) sent in 0.064 second(s), 21.00Kbyte(s)/sec.
```

Upload source file **a.cfg** on the subordinate device (with the member ID 2) to the remote FTP server and save it as **ftpclienta.cfg**.

```
[ftp] put slot2#flash:/a.cfg ftpclienta.cfg
227 Entering Passive Mode (192,168,1,46,4,52).
125 ASCII mode data connection already open, transfer starting for /ftpclienta.cfg.
226 Transfer complete.
FTP: 1226 byte(s) sent in 0.065 second(s), 18.00Kbyte(s)/sec.
```

pwd

Syntax

> **pwd**

View

> FTP client view

Default level

> 3: Manage level

Parameters

> None

Description

> Use **pwd** to display the working directory on the remote FTP server.

Examples

> \# Display the working directory on the remote FTP server.
>
> ```
> [ftp] cd servertemp
> [ftp] pwd
> 257 "/servertemp" is current directory.
> ```
>
> The output shows that you are accessing the **servertemp** folder under the FTP root directory.

quit

Syntax

> **quit**

View

> FTP client view

Default level

> 3: Manage level

Parameters

> None

Description

> Use **quit** to disconnect the FTP client from the remote FTP server and exit to user view.

Examples

> \# Disconnect from the remote FTP server and exit to user view.
>
> ```
> [ftp] quit
> 221 Server closing.
> ```

```
<Sysname>
```

remotehelp

Syntax

remotehelp [*protocol-command*]

View

FTP client view

Default level

3: Manage level

Parameters

protocol-command: FTP command.

Description

Use **remotehelp** to display the help information of FTP-related commands supported by the remote FTP server.

If no argument is specified, FTP-related commands supported by the remote FTP server are displayed.

Examples

Display FTP commands supported by the remote FTP server.

```
[ftp] remotehelp
214-Here is a list of available ftp commands
    Those with '*' are not yet implemented.
   USER   PASS   ACCT*  CWD    CDUP   SMNT*  QUIT   REIN*
   PORT   PASV   TYPE   STRU*  MODE*  RETR   STOR   STOU*
   APPE*  ALLO*  REST*  RNFR*  RNTO*  ABOR*  DELE   RMD
   MKD    PWD    LIST   NLST   SITE*  SYST   STAT*  HELP
   NOOP*  XCUP   XCWD   XMKD   XPWD   XRMD
214 Direct comments to HP company.
```

Display the help information for the **user** command.

```
[ftp] remotehelp user
214 Syntax: USER <sp> <username>.

[ftp]
```

Table 13 Command output

Field	Description
USER	Username.
PASS	Password.
CWD	Change the current working directory.
CDUP	Change to parent directory.
SMNT*	File structure setting.
QUIT	Quit.

Field	Description
REIN*	Re-initialization.
PORT	Port number.
PASV	Passive mode.
TYPE	Request type.
STRU*	File structure.
MODE*	Transmission mode.
RETR	Download a file.
STOR	Upload a file.
STOU*	Store unique.
APPE*	Appended file.
ALLO*	Allocation space.
REST*	Restart.
RNFR*	Rename the source.
RNTO*	Rename the destination.
ABOR*	Abort the transmission.
DELE	Delete a file.
RMD	Delete a folder.
MKD	Create a folder.
PWD	Print working directory.
LIST	List files.
NLST	List file description.
SITE*	Locate a parameter.
SYST	Display system parameters.
STAT*	State.
HELP	Help.
NOOP*	No operation.
XCUP	Extension command, the same meaning as CUP.
XCWD	Extension command, the same meaning as CWD.
XMKD	Extension command, the same meaning as MKD.
XPWD	Extension command, the same meaning as PWD.
XRMD	Extension command, the same meaning as RMD.
Syntax: USER <sp> <username>.	Syntax of the **user** command: user (keyword) + space + *username.*

rmdir

Syntax

rmdir *directory*

View

FTP client view

Default level

3: Manage level

Parameters

directory: Directory name on the remote FTP server.

Description

Use **rmdir** to remove a specified directory from the FTP server.

Only authorized users are allowed to use this command.

Delete all files and subdirectories under a directory before you delete the directory. For how to delete files, see the **delete** command.

When you execute the **rmdir** command, the files in the remote recycle bin in the directory will be automatically deleted.

Examples

Delete the **temp1** directory from the FTP root directory.

```
[ftp] rmdir /temp1
200 RMD command successful.
```

user

Syntax

user *username* [*password*]

View

FTP client view

Default level

3: Manage level

Parameters

username: Login username.

password: Login password. You can input this argument a space after the *username* argument; or you can input this argument when the "Password:" prompt appears after you input the username and then press **Enter**.

Description

Use **user** to relog in again to the FTP server with another username.

Before using this command, you must configure the corresponding username and password on the FTP server or the login will fail and the FTP connection will close.

Examples

After logging in to an FTP server as user **ftp1**, use the username **ftp2** to re-log in to the server (suppose the username **ftp2** and password **123123123123** have been configured on the FTP server):

- Method 1

```
[ftp] user ftp2
331 Password required for ftp2.
Password:
230 User logged in.

[ftp]
```

- Method 2

```
[ftp] user ftp2 123123123123
331 Password required for ftp.
230 User logged in.

[ftp]
```

verbose

Syntax

verbose

undo verbose

View

FTP client view

Default level

3: Manage level

Parameters

None

Description

Use **verbose** to enable display of detailed prompt information received from the server.

Use **undo verbose** to disable display of detailed prompt information.

By default, the display of detailed prompt information is enabled.

Examples

Enable display of detailed prompt information.

```
[ftp] verbose
FTP: verbose is on
```

Disable display of detailed prompt information and perform a Get operation.

```
[ftp] undo verbose
FTP: verbose is off

[ftp] get startup.cfg bb.cfg

FTP: 3608 byte(s) received in 0.052 second(s), 69.00K byte(s)/sec.
```

```
[ftp]
# Enable display of detailed prompt information. and perform a Get operation.
[ftp] verbose
FTP: verbose is on

[ftp] get startup.cfg aa.cfg

227 Entering Passive Mode (192,168,1,46,5,85).
125 ASCII mode data connection already open, transfer starting for /startup.cfg.
226 Transfer complete.
FTP: 3608 byte(s) received in 0.193 second(s), 18.00K byte(s)/sec.
```

TFTP client configuration commands

FIPS compliance

TFTP is not supported in FIPS mode.

display tftp client configuration

Syntax

display tftp client configuration [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

1: Monitor level

Parameters

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display tftp client configuration** to display source IP address configuration of the TFTP client.

This command displays the source IP address configuration of the TFTP client. If the specified source IP address is active, this command displays the source IP address. If the specified source interface is active, this command displays the source interface.

Related commands: **tftp client source**.

Examples

Display the source IP address configuration of the TFTP client.
```
<Sysname> display tftp client configuration
 The source IP address is 192.168.0.123
```

tftp-server acl

Syntax

tftp-server [**ipv6**] **acl** *acl-number*

undo tftp-server [**ipv6**] **acl**

View

System view

Default level

3: Manage level

Parameters

ipv6: References an IPv6 ACL. If it is not specified, an IPv4 ACL is referenced.

acl-number: Number of a basic ACL, in the range of 2000 to 2999.

Description

Use **tftp-server acl** to control the device's access to a specific TFTP server using an ACL.

Use **undo tftp-server acl** to restore the default.

By default, no ACL is used to control the device's access to TFTP servers.

You can use an ACL to deny or permit the device's access to a specific TFTP server.

For more information about ACL, see *ACL and QoS Configuration Guide.*

Examples

Allow the device to access only the TFTP server at 1.1.1.1.

```
<Sysname> system-view
[Sysname] acl number 2000
[Sysname-acl-basic-2000] rule permit source 1.1.1.1 0
[Sysname-acl-basic-2000] quit
[Sysname] tftp-server acl 2000
```

Allow the device to access the TFTP server at 2001::1.

```
<Sysname> system-view
[Sysname] acl ipv6 number 2001
[Sysname-acl6-basic-2001] rule permit source 2001::1/128
[Sysname-acl6-basic-2001] quit
[Sysname] tftp-server ipv6 acl 2001
```

tftp

Syntax

tftp *server-address* { **get** | **put** | **sget** } *source-filename* [*destination-filename*] [**vpn-instance** *vpn-instance-name*] [**source** { **interface** *interface-type interface-number* | **ip** *source-ip-address* }]

View

User view

Default level

3: Manage level

Parameters

server-address: IP address or host name of a TFTP server.

get: Downloads a file in normal mode.

put: Uploads a file.

sget: Downloads a file in secure mode.

source-filename: Source file name.

destination-filename: Destination file name. If you do not specify this argument, the downloaded file is saved to the current directory by the same name as the source file.

vpn-instance *vpn-instance-name*: Specifies the MPLS L3VPN where the TFTP server belongs. The *vpn-instance-name* argument is a case-sensitive string of 1 to 31 characters. Only the HP 5500 EI switch series supports this option.

source: Configures parameters for source address binding.

- **interface** *interface-type interface-number*: Specifies the source interface by its type and number. The primary IP address configured on the source interface is the source IP address of the packets sent by TFTP. If no primary IP address is configured on the source interface, the transmission fails.

- **ip** *source-ip-address*: Specifies the source IP address for the current TFTP client to transmit packets. This source address must be an IP address that has been configured on the device.

Description

Use **tftp** to download a file from or upload a local file to a TFTP server in an IPv4 network.

Examples

To upgrade the device, download the **newest.bin** file from the TFTP root directory of the TFTP server at 192.168.1.26 and save it to both the Flash root directory of the master and the Flash root directory of the subordinate device with the member ID 2.

```
<Sysname> tftp 192.168.1.26 get newest.bin startup.bin

 .
  File will be transferred in binary mode
  Downloading file from remote TFTP server, please wait.................
  TFTP:  2737556 bytes received in 13 second(s)
  File downloaded successfully.
```

// Download the file from the TFTP server to the root directory on the Flash of the master.

```
<Sysname> tftp 192.168.1.26 get newest.bin slot2#flash:/startup.bin

  File will be transferred in binary mode
  Downloading file from remote TFTP server, please wait...|
  TFTP:  2737556 bytes received in 14 second(s)
  File downloaded successfully.
```

// Download the file from the TFTP server to the root directory on the Flash of the subordinate device.

tftp client dscp

Syntax

tftp client dscp *dscp-value*

undo tftp client dscp

View

System view

Default level

2: System level

Parameters

dscp-value: Specifies a DSCP value in the range of 0 to 63.

Description

Use **tftp client dscp** to set the DSCP value for IPv4 to use for outgoing TFTP packets on a TFTP client.

Use **undo tftp client dscp** to restore the default.

By default, IPv4 uses the DSCP value 0 for outgoing TFTP packets on a TFTP client.

Examples

\# Set the DSCP value for IPv4 to use for outgoing TFTP packets to 30 on a TFTP client.

```
<Sysname> system-view
[Sysname] tftp client dscp 30
```

tftp client ipv6 dscp

Syntax

tftp client ipv6 dscp *dscp-value*

undo tftp client ipv6 dscp

View

System view

Default level

2: System level

Parameters

dscp-value: Specifies a DSCP value in the range of 0 to 63.

Description

Use **tftp client ipv6 dscp** to set the DSCP value for IPv6 to use for outgoing TFTP packets on a TFTP client.

Use **undo tftp client ipv6 dscp** to restore the default.

By default, IPv6 uses the DSCP value 0 for outgoing TFTP packets on a TFTP client.

Examples

\# Set the DSCP value for IPv6 to use for outgoing TFTP packets to 30 on a TFTP client.

```
<Sysname> system-view
[Sysname] tftp client ipv6 dscp 30
```

tftp client source

Syntax

tftp client source { **interface** *interface-type interface-number* | **ip** *source-ip-address* }

undo tftp client source

View

System view

Default level

2: System level

Parameters

interface *interface-type interface-number*: Specifies the source interface for establishing TFTP connections. The primary IP address of the source interface is used as the source IP address of packets sent to a TFTP server. If the source interface has no primary IP address specified, no TFTP connection can be established.

ip *source-ip-address*: Specifies the source IP address of packets sent to a TFTP server, which is one of the IP addresses configured on the device.

Description

Use **tftp client source** to specify the source IP address of packets sent to a TFTP server.

Use **undo tftp client source** to restore the default.

By default, the source IP address is the IP address of the output interface of the route to the server is used as the source IP address.

If you use the **tftp client source** command to first configure a source interface and then a source IP address, the source IP address overwrites the source interface, and vice versa.

If you first use the **tftp client source** command to specify a source IP address and then use the **tftp** command to specify another source IP address, the latter is used.

The source IP address specified with the **tftp client source** command applies to all TFTP connections while the one specified with the **tftp** command applies to the current TFTP connection only.

Related commands: **display tftp client configuration**.

Examples

Specify the source IP address of packets sent to a TFTP server as 2.2.2.2.

```
<Sysname> system-view
[Sysname] tftp client source ip 2.2.2.2
```

Specify the IP address of interface VLAN-interface 1 as the source IP address of packets sent to a TFTP server.

```
<Sysname> system-view
[Sysname] tftp client source interface vlan-interface 1
```

tftp ipv6

Syntax

tftp ipv6 *tftp-ipv6-server* [**-i** *interface-type interface-number*] { **get** | **put** } *source-filename* [*destination-filename*] [**vpn-instance** *vpn-instance-name*]

View

User view

Default level

3: Manage level

Parameters

tftp-ipv6-server: IPv6 address or host name of a TFTP server, a string of 1 to 46 characters.

-i *interface-type interface-number*: Specifies an output interface by its type and number. This parameter can be used only when the TFTP server address is a link local address and the specified output interface

has a link local address. For the configuration of a link local address, see IPv6 basics configuration in *Layer 3—IP Services Configuration Guide.*

get: Downloads a file.

put: Uploads a file.

source-file: Source filename.

destination-file: Destination filename. If it is not specified, this filename is the same as the source filename.

vpn-instance *vpn-instance-name*: Specifies the MPLS L3VPN that the TFTP server belongs to. The *vpn-instance-name* argument is a case-sensitive string of 1 to 31 characters. Only the HP 5500 EI switch series supports this option.

Description

Use **tftp ipv6** to download a file from or upload a local file to a TFTP server in an IPv6 network.

Examples

Download **filetoget.txt** from the TFTP server.

```
<Sysname> tftp ipv6 fe80::250:daff:fe91:e058 -i Vlan-interface 1 get filetoget.txt
  ...
  File will be transferred in binary mode
  Downloading file from remote TFTP server, please wait....
  TFTP:     411100 bytes received in 2 second(s)
  File downloaded successfully.
```

File system management commands

In the following examples, the current working directory is the root directory of the storage medium on the device.

For the qualified filename formats, see *Fundamentals Configuration Guide*.

cd

Syntax

cd { *directory* | **..** | **/** }

View

User view

Default level

3: Manage level

Parameters

directory: Name of the target directory, in the format of [*drive*:/]*path.* For the detailed introduction to the drive and path arguments, see *Fundamentals Configuration Guide.* If no drive information is provided, the argument represents a folder or subfolder in the current directory.

..: Returns to an upper directory. If the current working directory is the root directory, or if no upper directory exists, the current working directory does not change when the **cd ..** command is executed. This argument does not support command online help.

/: Returns to the root directory of the storage medium. This keyword does not support command line online help.

Description

Use **cd** to change the current working directory.

Examples

Enter the root directory of the Flash on a subordinate device with the member ID 2 after logging in to the master.

```
<Sysname> cd slot2#flash:/
```

Change the current directory from the file system of the subordinate device to the **test** folder in the root directory of the master.

```
<Sysname> cd flash:/
```

copy

Syntax

copy *fileurl-source fileurl-dest*

View

User view

Default level

3: Manage level

Parameters

fileurl-source: Name of the source file.

fileurl-dest: Name of the target file or folder.

Description

Use **copy** to copy a file.

If you specify a target folder, the system will copy the file to the specified folder and use the name of the source file as the file name.

Examples

Copy the configuration file of the master to the Flash root directory of a subordinate device (with the member ID 2).

```
<Sysname> copy vrcfg.cfg slot2#flash:/
Copy flash:/vrcfg.cfg to slot2#flash:/vrcfg.cfg?[Y/N]:y

%Copy file flash:/vrcfg.cfg to slot2#flash:/vrcfg.cfg...Done.
```

crypto-digest

Use **crypto-digest** to calculate the digest value of a specific file.

Syntax

crypto-digest sha256 file *file-url*

Views

User view

Default command level

2: System level

Parameters

sha256: Specifies the digest algorithm SHA-256.

file *file-url*: Specifies a filename.

Usage guidelines

The digest value of a file is used to verify the correctness and integrity of the file. For example, you can use this command to calculate the digest value of a software package on your switch and compare it with the digest value issued by HP for the software package. If the two values are identical, it means that the package on your switch is the correct one.

Examples

Use SHA-256 to calculate the digest value of the file **1.bin**.

```
<Sysname> crypto-digest sha256 1.bin
```

delete

Syntax

delete [**/unreserved**] *file-url*

View

User view

Default level

3: Manage level

Parameters

/unreserved: Permanently deletes the specified file, and the deleted file can never be restored.

file-url: Name of the file to be deleted. Asterisks (*) are acceptable as wildcards. For example, to remove files with the extension of **.txt** in the current directory, you may use the **delete *** .txt command.

Description

Use **delete** *file-url* to temporarily delete a file. The deleted file is saved in the recycle bin. To restore it, use the **undelete** command.

Use **dir /all** to display the files deleted from the directory and moved to the recycle bin. These files are enclosed in pairs of brackets [ ].

Use **reset recycle-bin** to remove the files from the recycle bin.

Use **delete /unreserved** *file-url* to permanently delete a file, and the deleted file cannot be restored. Use it with caution.

ⓘ IMPORTANT:

If you delete two files with the same filename in different directories, only the last one is retained in the recycle bin.

Examples

Remove file **tt.cfg** from the current directory of the Flash on the master.

```
<Sysname> delete tt.cfg
.
Delete flash:/tt.cfg?[Y/N]:y
.
%Delete file flash:/tt.cfg...Done.
```

Remove file **tt.cfg** from the Flash root directory of a subordinate device (with the member ID 2):

- Approach 1

```
<Sysname> delete slot2#flash:/tt.cfg
Delete slot2#flash:/tt.cfg?[Y/N]:y
%Delete file slot2#flash:/tt.cfg...Done.
```

- Approach 2

```
<Sysname> cd slot2#flash:/
<Sysname> delete tt.cfg
Delete slot2#flash:/tt.cfg?[Y/N]:y
%Delete file slot2#flash:/tt.cfg...Done.
```

dir

Syntax

dir [/all] [*file-url* | /all-filesystems]

View

User view

Default level

3: Manage level

Parameters

/all: Displays all files and folders in the current directory, including hidden files, hidden folders, files moved from the current directory to the recycle bin. Files in the recycle bin are enclosed in square brackets [ ].

file-url: Displays the specified file. Asterisks (*) are acceptable as wildcards. For example, to display files with the .txt extension in the current directory, you may use the dir *.txt command.

/all-filesystems: Displays files and folders in the root directory of all storage media on the device.

Description

Use dir to display files or folders.

If no parameter is specified, the command displays all visible files and folders in the current directory.

Examples

Display information about all files and folders in the storage medium of the master. (The output depends on your switch model.)

```
<Sysname> dir /all
Directory of flash:/

  0     -rw-       7380  Mar 25 2011 10:47:36   patch-package.bin
  1     -rw-        228  Mar 25 2011 10:50:39   patchstate
  2     -rwh-      2884  Apr 01 2011 17:56:14   private-data.txt
  3     -rw-       3921  Apr 01 2011 17:56:30   startup.cfg
  4     -rw-   12955373  Apr 01 2011 15:24:20   backup.bin
  5     -rw-        151  Apr 01 2011 17:56:24   system.xml

15240 KB total (2517 KB free)
```

Display files and folders in the root directory of all storage media on the IRF fabric. (The output depends on your switch model.)

```
<Sysname> dir /all-filesystems
Directory of flash:/

  0     -rw-   12948314  Dec 11 2011 15:15:00   main.bin
  1     drw-          -  Apr 26 2011 12:00:54   seclog
  2     -rw-        168  Apr 26 2011 12:09:25   patchstate
  3     -rw-     551510  Apr 26 2011 12:49:44   cmdtree.txt
  4     -rw-        287  Apr 26 2011 12:07:42   system.xml
  5     -rw-       2550  Apr 26 2011 12:07:46   startup.cfg
  6     -rw-       3801  Apr 26 2011 12:03:43   stp.cfg
```

```
    7    -rw-    262104  Apr 26 2011 12:05:28   default.diag
15240 KB total (4458 KB free)


Directory of slot1#flash:/

    0    -rw-  12948314  Dec 11 2011 15:15:00   main.bin
    1    -rw-    453420  Apr 26 2011 12:04:52   b59.diag
    2    drw-         -  Apr 26 2011 12:00:18   seclog
    3    -rw-   1540516  Apr 26 2011 15:25:27   b83.diag
    4    -rw-       287  Apr 26 2011 12:05:04   system.xml
    5    -rw-     21009  Apr 26 2011 12:05:19   startup.cfg
    6    -rw-       168  Apr 01 2011 23:55:39   patchstate


15240 KB total (4217 KB free)
```

Display information about all files and folders in the storage medium of a subordinate device (with the member ID 2).

```
<Sysname> cd slot2#flash:/
<Sysname> dir /all
Directory of slot2#flash:/

    0    -rwh      3144  Apr 26 2011 13:45:28   private-data.txt
    1    -rw-      2341  Apr 26 2011 16:36:18   startup.cfg
    2    -rw-       124  Apr 26 2011 12:00:22   patchstate
    3    -rwh       716  Apr 26 2011 14:31:36   hostkey
    4    -rwh         4  Apr 26 2011 14:31:41   snmpboots
    5    -rw-  10187730  Apr 26 2011 12:01:10   startup.bin
    6    -rwh       572  Apr 26 2011 14:31:47   serverkey
    7    -rwh       548  Apr 26 2011 14:31:52   dsakey
    8    -rw-      3035  Apr 26 2011 13:45:36   new-config.cfg
    9    drw-         -  Apr 26 2011 12:11:53   oldver


15240 KB total (1839 KB free)
```

Table 14 Command output

Field	Description
Directory of	Current working directory.
d	Indicates a directory. If this field does not exist, it indicates a file.
r	Indicates that the file or directory is readable.
w	Indicates that the file or directory is writable.
h	Indicates that the file or directory is hidden.
[ ]	Indicates that the file is in the recycle bin.

execute

Syntax

execute *filename*

View

System view

Default level

2: System level

Parameters

filename: Name of a batch file with a .bat extension. To change the extension of a configuration file to .bat, use the **rename** command.

Description

Use **execute** to execute the specified batch file.

Batch files are command line files. Executing a batch file is to execute a set of command lines in the file.

Do not include invisible characters in a batch file. If an invisible character is found during the execution, the batch process will abort and the commands that have been executed cannot be cancelled.

Not every command in a batch file is sure to be executed. For example, if a certain command is not correctly configured, the command cannot be executed, and the system skips this command and goes to the next one.

Each configuration command in a batch file must be a standard configuration command, meaning that the valid configuration information can be displayed with the **display current-configuration** command.

Examples

Execute the batch file **test.bat** in the root directory.

```
<Sysname> system-view
[Sysname] execute test.bat
```

file prompt

Syntax

file prompt { **alert** | **quiet** }

View

System view

Default level

3: Manage level

Parameters

alert: Enables the system to warn you about operations that may bring undesirable results, including file corruption or data loss.

quiet: Disables the system from warning you about any operation.

Description

Use **file prompt** to set the file system operation mode.

By default, the operation mode is **alert**.

When the operation mode is set to **quiet**, the system does not warn for any file system operation. To avoid misoperation, use the alert mode.

Examples

Set the file system operation mode to **alert**.
```
<Sysname> system-view
[Sysname] file prompt alert
```

fixdisk

Syntax

fixdisk *device*

View

User view

Default level

3: Manage level

Parameters

device: Storage medium name.

Description

Use **fixdisk** to restore the space of a storage medium when it becomes unavailable because of an abnormal operation.

Examples

Restore the space of the Flash.
```
<Sysname> fixdisk flash:
Fixdisk flash: may take some time to complete...
%Fixdisk flash: completed.
```

format

Syntax

format *device*

View

User view

Default level

3: Manage level

Parameters

device: Name of a storage medium, for example, flash.

Description

Use **format** to format a storage medium.

> **!** IMPORTANT:
>
> Formatting a storage medium results in loss of all the files on the storage medium and these files cannot be restored. In particular, if a startup configuration file exists on a storage medium, formatting the storage medium results in loss of the startup configuration file.

Examples

Format the Flash.

```
<Sysname> format flash:
All data on flash: will be lost, proceed with format? [Y/N]:y
./
%Format flash: completed.
```

mkdir

Syntax

mkdir *directory*

View

User view

Default level

3: Manage level

Parameters

directory: Name of a folder.

Description

Use **mkdir** to create a folder under a specified directory on the storage medium.

The name of the folder to be created must be unique in the specified directory. Otherwise, you cannot create the folder in the directory.

To use this command to create a folder, the specified directory must exist. For example, to create folder **flash:/test/mytest**, the **test** folder must exist.

Examples

Create folder **test** under the Flash root directory on a subordinate device (with the member ID 2).

```
<Sysname> mkdir slot2#flash:/test
....
%Created dir slot2#flash:/test.
```

more

Syntax

more *file-url*

View

User view

Default level

3: Manage level

Parameters

file-url: File name.

Description

Use **more** to display the contents of the specified file. It indicates that there are more lines than the screen can display.

Pressing **Enter** displays the next line.

Pressing **Space** displays the next screen.

Pressing **Ctrl+C** or any other key exits the display.

This command is valid only for text files.

Examples

Display the contents of file **testcfg.cfg** on a subordinate device (with the member ID 2).

```
<Sysname> more slot2#flash:/testcfg.cfg

#
 version 5.20, Release 2220P02
#
 sysname Test
#
  ---- More ----
```

move

Syntax

move *fileurl-source fileurl-dest*

View

User view

Default level

3: Manage level

Parameters

fileurl-source: Name of the source file.

fileurl-dest: Name of the target file or folder.

Description

Use **move** to move a file.

If you specify a target folder, the system will move the source file to the specified folder, with the file name unchanged.

Examples

Move file **flash:/test/sample.txt** to **flash:/**, and save it as **1.txt**.

```
<Sysname> move test/sample.txt 1.txt
Move flash:/test/sample.txt to flash:/1.txt?[Y/N]:y

...
% Moved file flash:/test/sample.txt to flash:/1.txt
```

Move file **b.cfg** to the subfolder **test2**.

```
<Sysname> move b.cfg test2
Move flash:/b.cfg to flash:/test2/b.cfg?[Y/N]:y
.
%Moved file flash:/b.cfg to flash:/test2/b.cfg.
```

pwd

Syntax

pwd

View

User view

Default level

3: Manage level

Parameters

None

Description

Use **pwd** to display the current path.

Examples

Display the current path.

```
<Sysname> pwd
flash:
```

rename

Syntax

rename *fileurl-source fileurl-dest*

View

User view

Default level

3: Manage level

Parameters

fileurl-source: Name of the source file or folder.

fileurl-dest: Name of the target file or folder.

Description

Use **rename** to rename a file or folder. The target file name must be unique in the current path.

Examples

Rename file **sample.txt** as **sample.bat**.

```
<Sysname> rename sample.txt sample.bat
Rename flash:/sample.txt to flash:/sample.bat? [Y/N]:y
```

```
% Renamed file flash:/sample.txt to flash:/sample.bat
```

reset recycle-bin

Syntax

reset recycle-bin [**/force**]

View

User view

Default level

3: Manage level

Parameters

/force: Deletes all files in the recycle bin, including files that cannot be deleted by the command without the **/force** keyword.

Description

Use **reset recycle-bin** to permanently delete the files in the recycle bin in the current directory.

If a file is corrupted, you may not be able to delete the file using the **reset recycle-bin** command. Use the **reset recycle-bin /force** command to delete the corrupted file in the recycle bin forcibly.

The **delete** *file-url* command only moves a file to the recycle bin. To permanently delete the file in the recycle bin, use the **reset recycle-bin** command in the original directory of the file.

The **reset recycle-bin** command deletes files in the current directory and in the recycle bin. If the original path of the file to be deleted is not the current directory, use the **cd** command to enter the original directory of the file, and then execute the **reset recycle-bin** command.

Examples

Delete file **b.cfg** in the current directory and in the recycle bin:

1. Display all the files in the recycle bin and in the current directory.
   ```
   <Sysname> dir /all
   Directory of flash:/

        0     -rwh      3080  Apr 26 2011 16:41:43   private-data.txt
        1     -rw-      2416  Apr 26 2011 13:45:36   config.cfg
        2     -rw-  13308645  May 14 2011 10:13:18   main.bin
        3     -rw-      2386  Apr 26 2011 13:30:30   back.cfg
        4     drw-         -  May 08 2011 09:49:25   test
        5     -rwh       716  Apr 24 2011 16:17:30   hostkey
        6     -rwh       572  Apr 24 2011 16:17:44   serverkey
        7     -rw-      2386  May 08 2011 11:14:20   [a.cfg]
        8     -rw-      3608  Dec 03 2011 17:29:30   [b.cfg]

   15240 KB total (6730 KB free)
   ```
   //The output shows that the current directory is **flash:**, and there are two files **a.cfg** and **b.cfg** in the recycle bin.

2. Delete file **b.cfg** in the current directory and in the recycle bin.
   ```
   <Sysname> reset recycle-bin
   Clear flash:/~/a.cfg ?[Y/N]:n
   ```

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```
Clear flash:/~/b.cfg ?[Y/N]:y
Clearing files from flash may take a long time. Please wait...
......
%Cleared file flash:/~/b.cfg...
```

3. In directory **flash:**, check whether the file **b.cfg** in the recycle bin is deleted.

```
<Sysname> dir /all
Directory of flash:/

    0     -rwh       3080  Apr 26 2011 16:41:43   private-data.txt
    1     -rw-       2416  Apr 26 2011 13:45:36   config.cfg
    2     -rw-   13308645 May 14 2011 10:13:18   main.bin
    3     -rw-       2386  Apr 26 2011 13:30:30   back.cfg
    4     drw-          -  May 08 2011 09:49:25   test
    5     -rwh        716  Apr 24 2011 16:17:30   hostkey
    6     -rwh        572  Apr 24 2011 16:17:44   serverkey
    7     -rw-       2386  May 08 2011 11:14:20   [a.cfg]

15240 KB total (6734 KB free)
```

// The output shows that file **flash:/b.cfg** is deleted permanently.

Delete file **aa.cfg** in the subdirectory **test** and in the recycle bin:

4. Enter the subdirectory

```
<Sysname> cd test/
```

5. Check all the files in the subfolder **test**.

```
<Sysname> dir /all
Directory of flash:/test

    0     -rw-       2161  Apr 26 2011 21:22:35   [aa.cfg]

15240 KB total (6734 KB free)
```

// The output shows that only one file exists in the folder, and the file has been moved to the recycle bin.

6. Permanently delete file **test/aa.cfg**.

```
<Sysname> reset recycle-bin
Clear flash:/test/~/aa.cfg ?[Y/N]:y
Clearing files from flash may take a long time. Please wait...
..
%Cleared file flash:/test/~/aa.cfg...
```

rmdir

Syntax

rmdir *directory*

View

User view

99

Default level

3: Manage level

Parameters

directory: Name of the folder.

Description

Use **rmdir** to remove a folder.

The folder must be an empty one. If it is not empty, use the **delete** command to delete all files and subfolders under it.

After you execute the **rmdir** command successfully, the files in the recycle bin in the folder will be automatically deleted.

Examples

\# Remove the **mydir** folder.

```
<Sysname> rmdir mydir
Rmdir flash:/mydir?[Y/N]:y

%Removed directory flash:/mydir.
```

undelete

Syntax

undelete *file-url*

View

User view

Default level

3: Manage level

Parameters

file-url: Name of the file to be restored.

Description

Use **undelete** to restore a file from the recycle bin.

If another file with the same name exists in the same path, the system prompts you whether to overwrite the original file.

Examples

\# Restore file **a.cfg** in directory **flash:** from the recycle bin.

```
<Sysname> undelete a.cfg
Undelete flash:/a.cfg?[Y/N]:y
.....
%Undeleted file flash:/a.cfg.
```

\# Restore file **b.cfg** in directory **flash:/test** from the recycle bin.

```
<Sysname> undelete flash:/test/b.cfg
Undelete flash:/test/b.cfg?[Y/N]:y
.......
```

```
%Undeleted file flash:/test/b.cfg.
```

Or, you can use the following steps to restore file **flash:/test/b.cfg**.

```
<Sysname> cd test
<Sysname> undelete b.cfg
Undelete flash:/test/b.cfg?[Y/N]:y
.....
%Undeleted file flash:/test/b.cfg.
```

Configuration file management commands

The device supports the FIPS mode that complies with NIST FIPS 140-2 requirements. Support for features, commands, and parameters might differ in FIPS mode and non-FIPS mode. For more information about FIPS mode, see *Security Configuration Guide*.

archive configuration

Syntax

archive configuration

View

User view

Default level

3: Manage level

Parameters

None

Description

Use **archive configuration** to manually archive the running configuration to the configuration archive directory.

Before manually archiving the running configuration, complete the following tasks:

1. Create a directory for saving configuration archives.

2. Use the **archive configuration location** command to specify the directory as the configuration archive directory and specify an archive name prefix.

Configuration archive is a function that facilitates configuration rollback. It provides the manual and automatic methods for saving the running configuration as checkpoint references. For more information about the archiving mechanism, see the section about configuration rollback in *Fundamentals Configuration Guide*.

To avoid decreasing system performance, follow these guidelines:

- If the device configuration does not change frequently, manually archive the running configuration as needed.

- If a low-speed storage medium (such as a flash) is used, archive the running configuration manually, or configure automatic archiving with an interval longer than 1440 minutes (24 hours).

Examples

Archive the running configuration.

```
<Sysname> archive configuration
Warning: Save the running configuration to an archive file. Continue? [Y/N]: Y
Please wait...
Info: The archive configuration file myarchive_1.cfg is saved.
```

archive configuration interval

Syntax

archive configuration interval *minutes*

undo archive configuration interval

View

System view

Default level

3: Manage level

Parameters

minutes: Specifies the interval for automatically saving the running configuration, in minutes. The value is in the range of 10 to 525600 (365 days).

Description

Use **archive configuration interval** to enable the automatic running configuration archiving and set the archiving interval.

Use **undo archive configuration interval** to restore the default.

By default, the system does not automatically archive the running configuration.

Before enabling automatic configuration archiving, complete the following tasks:

1. Create a directory for saving configuration archives.

2. Use the **archive configuration location** command to specify the directory as the configuration archive directory and specify an archive name prefix.

Configuration archive is a function that facilitates configuration rollback. It provides the manual and automatic methods for saving the running configuration as checkpoint references.

Automatic configuration archiving enables the system to automatically save the running configuration to the archive directory. For more information about the archiving mechanism, see the section about configuration rollback in *Fundamentals Configuration Guide*.

To avoid decreasing system performance, follow these guidelines:

- If the device configuration does not change frequently, manually archive the running configuration as needed.

- If a low-speed storage medium (such as a flash) is used, archive the running configuration manually, or configure automatic archiving with an interval longer than 1440 minutes (24 hours).

- Change the archiving interval depending on the available storage space. The shorter the interval, the more free storage space is required.

Examples

Configure the system to archive the running configuration every 60 minutes.

```
<Sysname> system-view
[Sysname] archive configuration interval 60
Info: Archive files will be saved every 60 minutes.
```

archive configuration location

Syntax

archive configuration location *directory* **filename-prefix** *filename-prefix*

undo archive configuration location

View

System view

Default level

3: Manage level

Parameters

directory: Specifies a configuration archive directory, a case-insensitive string of 1 to 63 characters. The directory must take the format *storage-medium name*:/*folder name*. In an IRF fabric, this directory must already exist on the master.

filename-prefix: Specifies a file name prefix for configuration archives, a case-insensitive string of 1 to 30 characters. Valid characters are letters, digits, underscores (_), and hyphens (-).

Description

Use **archive configuration location** to configure the directory and file name prefix for archiving the configuration.

Use **undo archive configuration location** to restore the default.

By default, no configuration archive directory or configuration archive file name prefix has been set.

Before archiving the running configuration, either manually or automatically, you must configure a directory and file name prefix for configuration archives.

In an IRF fabric, the configuration archive function saves running configuration only on the master device. To make sure the system can archive running configuration after a master/subordinate switchover, create the directory on each IRF member.

Configuration archives take the file name format *prefix_serial number***.cfg**, for example, **20080620archive_1.cfg** and **20080620archive_2.cfg**. The serial number is automatically assigned from 1 to 1000, increasing by 1. After the serial number reaches 1000, it restarts from 1.

After you change the file directory or file name prefix, or reboot the device, the old configuration archives are regarded as common configuration files, the configuration archive counter resets, and the display archive configuration command does not display them. The serial number for new configuration archives starts from 1.

The **undo archive configuration location** command disables the configuration archive function (both manual and automatic methods), restores the default settings of the **archive configuration interval** and **archive configuration max** commands, and clears all configuration archives, in addition to removing the configuration archive directory and file name prefix settings.

Examples

To configure the configuration archive directory and archive file name prefix as **flash:/archive/** and **my_archive**:

1. Create the directory on the master.

    ```
    <Sysname> mkdir archive
    .
    ```

```
              %Created dir flash:/archive.
```

2. Create the directory on IRF member 2. (Repeat this step to create the directory on all IRF members.)
```
<Sysname> mkdir slot2#flash:/archive


%Created dir slot2#flash:/archive.
```

3. Specify the directory as the configuration archive directory, and configure an archive file name prefix.
```
<Sysname> system-view
[Sysname] archive configuration location flash:/archive filename-prefix my_archive
```

archive configuration max

Syntax

archive configuration max *file-number*

undo archive configuration max

View

System view

Default level

3: Manage level

Parameters

file-number: Set the maximum number of configuration archives that can be saved. The value range is 1 to 10. Change the setting depending on the available storage space.

Description

Use **archive configuration max** to set the maximum number of running-configuration archives.

Use **undo archive configuration max** to restore the default.

By default, a maximum of five configuration archives can be saved.

Before you can set a limit on configuration archives, use the **archive configuration location** command to specify a configuration archive directory and archive file name prefix.

After the maximum number of configuration archives is reached, the system deletes the oldest archive for the new archive.

Changing the limit setting to a lower value does not cause immediate deletion of exceeding archives. Instead, the configuration archive function deletes the oldest *n* files when a new archive is manually or automatically saved, where *n* = current archive count – new archive limit + 1. Suppose seven configuration archives have been saved before the archive limit is set to four. When saving a new configuration archive, the system first deletes the oldest four (7 – 4 + 1) archives.

If you execute the **undo archive configuration location** command, the default archive limit is restored.

Examples

Set the maximum number of configuration archives to 10.
```
<Sysname> system-view
[Sysname] archive configuration max 10
```

backup startup-configuration

Syntax

backup startup-configuration to *dest-addr* [*dest-filename*]

View

User view

Default level

2: System level

Parameters

dest-addr: Specifies a TFTP server's IPv4 address or name, a string of 1 to 20 characters.

dest-filename: Specifies the target file name used for saving the file on the server. The file extension must be .cfg. If you do not specify a target file name, the source file name is used.

Description

Use **backup startup-configuration** to back up the startup configuration file to a TFTP server.

Before performing this task, make sure the server is reachable, the server is enabled with TFTP service, and you have read and write permissions.

This command is not supported in FIPS mode.

This command backs up only the main startup configuration file.

Examples

Back up the next-startup configuration file of the switch to the TFTP server with IP address 2.2.2.2, and set the target file name to **192-168-1-26.cfg**.

```
<Sysname> backup startup-configuration to 2.2.2.2 192-168-1-26.cfg
Backup next startup-configuration file to 2.2.2.2, please wait…finished!
<Sysname>
```

configuration replace file

Syntax

configuration replace file *filename*

View

System view

Default level

3: Manage level

Parameters

filename: Specifies the name of the replacement configuration file for configuration rollback.

Description

Use **configuration replace file** to perform a configuration rollback.

To replace the running configuration with the configuration in a configuration file without rebooting the device, use the configuration rollback function. This function helps you revert to a previous configuration state or adapt the running configuration to different network environments.

To avoid rollback failure:

- Make sure the replacement configuration file is created by using the configuration archive function or the **save** command on the current device.

- If the configuration file is not created on the current device, make sure the configuration file content format is fully compatible with the current device.

The replacement configuration file is not encrypted.

Examples

Replace the running configuration with the configuration file in the **my_archive_1.cfg** configuration file.

```
<Sysname> system-view
[Sysname] configuration replace file my_archive_1.cfg
Current configuration will be lost, save current configuration? [Y/N]:n
Info: Now replacing the current configuration. Please wait...
Info: Succeeded in replacing current configuration with the file my_archive_1.cfg.
```

display archive configuration

Syntax

display archive configuration [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

1: Monitor level

Parameters

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display archive configuration** to display configuration archive information, including the archive directory, archive prefix, archive interval, maximum number of archives, and saved archives.

Examples

Display configuration archive information.

```
<Sysname> display archive configuration
Location: flash:/archive
Filename prefix: my_archive
Archive interval in minutes: 120
Maximum number of archive files: 10
Saved archive files:
  No. TimeStamp          FileName
  1   Aug 05 2011 20:24:54   my_archive_1.cfg
```

```
    2   Aug 05 2011 20:34:54   my_archive_2.cfg
#   3   Aug 05 2011 20:44:54   my_archive_3.cfg
'#' indicates the most recent archive file.
Next archive file to be saved: my_archive_4.cfg
```

Table 15 Command output

Field	Description
Location	Directory for saving running-configuration archives.
Filename prefix	File name prefix for configuration archives.
Archive interval in minutes	Interval (in minutes) for the system to automatically archive the running configuration. If automatic configuration saving is disabled, this field is not available.
Timestamp	Time when the configuration archive was created.
Filename	Configuration archive file name, with the directory excluded.

display current-configuration

Syntax

display **current-configuration** [**configuration** [*configuration*] | **interface** [*interface-type* [*interface-number*]] | **exclude** *modules*] [**by-linenum**] [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

2: System level

Parameters

configuration [*configuration*]: Displays feature configuration. The *configuration* argument specifies a feature module. If no feature module is specified, this command displays all feature settings you have made. Available feature modules depend on your configuration. For example:

- **system**: Displays the system configuration.
- **user-interface**: Displays the user interface configuration.

interface [*interface-type* [*interface-number*]]: Displays the interface configuration, where *interface-type* represents the interface type and *interface-number* represents the interface number.

exclude *modules*: Excludes the configuration of the specified modules. The *modules* argument can be **acl**, **acl6**, or both separated by a space.

- **acl**: Excludes the IPv4 ACL configuration.
- **acl6**: Excludes the IPv6 ACL configuration.

by-linenum: Displays the number of each line.

|: Filters command output by specifying a regular expression. For more information about regular expressions, the *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display current-configuration** to display the running configuration.

Use this command to verify the configuration you have made.

Typically, this command does not display parameters that are set to their default settings.

If the system has automatically changed the setting you have made for a parameter, for example, due to a system restriction, this command displays the effective setting rather than the configured one. For example, assign IP address 11.11.11.11 24 to a Loopback interface. However, the **display current-configuration** command displays 11.11.11.11 255.255.255.255, because the subnet mask for a Loopback interface must be 32 bits, and the system has automatically corrected the subnet mask.

Related commands: **display saved-configuration**, **reset saved-configuration**, and **save**.

Examples

Display the configuration from the line containing "user-interface" to the last line in the running configuration.

```
<Sysname> display current-configuration | begin user-interface
user-interface aux 0
user-interface vty 0 15
 authentication-mode none
 user privilege level 3
#
return
```

Display the running SNMP configuration.

```
<Sysname> display current-configuration | include snmp
 snmp-agent
 snmp-agent local-engineid 800063A203000FE240A1A6
 snmp-agent community read public
 snmp-agent community write private
 snmp-agent sys-info version all
```

display default-configuration

Syntax

display default-configuration [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

2: System level

Parameters

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display default-configuration** to display the factory defaults.

The device is shipped with some basic settings called "factory defaults." If you do not access the Boot menu to select the **Skip Current System Configuration** option , the factory defaults make sure the device can start up and run correctly when it has no startup configuration file or the startup configuration file is corrupted.

Related commands: **display current-configuration** and **display saved-configuration**.

Examples

Display the factory defaults of the device.
```
<Sysname> display default-configuration
```

display saved-configuration

Syntax

display saved-configuration [**by-linenum**] [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

2: System level

Parameters

by-linenum: Identifies each line of displayed information with a line number.

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display saved-configuration** to display the contents of the configuration file to be used at the next startup.

Use this command to verify that important settings have been saved to the next-startup configuration file.

For a device supporting main and backup configuration files, this command displays the main next-startup configuration file.

If no next-startup configuration file has been specified, or the specified next-startup configuration does not exist, this command displays the error message "The config file does not exist!"

Related commands: **display current-configuration**, **reset saved-configuration,** and **save**.

Examples

\# Display the saved startup configuration file.

```
<Sysname>display saved-configuration
#
 version 5.20, Release 2220P02
#
 sysname Sysname
#
 irf mac-address persistent timer
 irf auto-update enable
 undo irf link-delay
#
 domain default enable system
#
 telnet server enable
#
 undo cluster enable
#
igmp-snooping
#
vlan 1
 igmp-snooping enable
#
radius scheme system
 server-type extended
 primary authentication 127.0.0.1 1645
 primary accounting 127.0.0.1 1646
 user-name-format without-domain
#
domain system
 access-limit disable
 state active
 idle-cut disable
 self-service-url disable
#
user-group system
 group-attribute allow-guest
#
local-user admin
 authorization-attribute level 3
 service-type telnet terminal
local-user manager
 password cipher $c$3$F4tkZ85PwAV5/9NED9KsxgbPjoBv4Z7IPxs=
 authorization-attribute level 2
 service-type telnet terminal
local-user monitor
 password cipher $c$3$lNkvR8QxIYQAqdTqDdoewEP1t1lrXQqLqbU=
```

```
 authorization-attribute level 1
 service-type telnet terminal
#
interface NULL0
#
  ---- More ----
```

At the prompt of More, press **Enter** to display the next line, press **Space** to display the next screen of configuration, or press **Ctrl+C** or any other key to stop displaying the configuration.

Display the saved configuration file, and number each line.

```
<Sysname> display saved-configuration by-linenum
    1:  #
    2:   version 5.20, Release 2220P02
    3:  #
    4:   sysname Sysname
    5:  #
    6:   irf mac-address persistent timer
    7:   irf auto-update enable
    8:   undo irf link-delay
    9:  #
   10:   domain default enable system
   11:  #
   12:   telnet server enable
   13:  #
   14:   undo cluster enable
   15:  #
   16:  igmp-snooping
   17:  #
   18:  vlan 1
   19:   igmp-snooping enable
   20:  #
   21:  radius scheme system
   22:   server-type extended
   23:   primary authentication 127.0.0.1 1645
   24:   primary accounting 127.0.0.1 1646
   25:   user-name-format without-domain
   26:  #
   27:  domain system
   28:   access-limit disable
   29:   state active
   30:   idle-cut disable
   31:   self-service-url disable
   32:  #
   33:  user-group system
   34:   group-attribute allow-guest
   35:  #
   36:  local-user admin
   37:   authorization-attribute level 3
   38:   service-type telnet terminal
```

```
39:  local-user manager
40:   password cipher $c$3$F4tkZ85PwAV5/9NED9KsxgbPjoBv4Z7IPxs=
41:   authorization-attribute level 2
42:   service-type telnet terminal
43:  local-user monitor
44:   password cipher $c$3$lNkvR8QxIYQAqdTqDdoewEP1t1lrXQqLqbU=
45:   authorization-attribute level 1
46:   service-type telnet terminal
47:  #
48:  interface NULL0
49:  #
---- More ----
```

display startup

Syntax

display startup [| { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

1: Monitor level

Parameters

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display startup** to display the running configuration file, the next-startup configuration file, and the Boot menu access control state.

Current startup configuration file is the configuration file used at this startup. Next-startup configuration file is the configuration file used at the next startup.

All IRF members maintain the same current startup configuration file as the master. After a master/subordinate switchover, it is normal that the current startup configuration files on them are displayed as NULL, because the new master continues to run with the running configuration rather than rebooting with the previous current startup configuration file.

Related commands: **startup saved-configuration**.

Examples

In standalone mode, display the startup configuration file used at the current system startup and the one to be used at the next system startup.

```
<Sysname> display startup
MainBoard:
```

```
 Current startup saved-configuration file: flash:/startup.cfg
 Next startup saved-configuration file: flash:/startup.cfg
Slot 1:
 Current startup saved-configuration file: flash:/startup.cfg
 Next startup saved-configuration file: flash:/startup.cfg
```

Table 16 Command output

Field	Description
MainBoard	Displays the startup configuration files on the active MPU.
Current Startup saved-configuration file	Configuration file that has been loaded.
Next startup saved-configuration file	Configuration file to be used at the next startup.
(This file does not exist.)	If the specified next-startup configuration file has been deleted, this comment appears next to the file name.
Slot 1	Displays the startup configuration files on the standby MPU in slot 1.

Display the startup configuration file used at the current system startup and the startup configuration files to be used at the next system startup.

```
<Sysname> display startup
MainBoard:
 Current startup saved-configuration file: flash:/startup.cfg
 Next main startup saved-configuration file: flash:/startup.cfg
 Next backup startup saved-configuration file: flash:/startup2.cfg
 Bootrom-access enable state: enabled
Slot 2:
 Current startup saved-configuration file: flash:/startup.cfg
 Next main startup saved-configuration file: flash:/startup.cfg
 Next backup startup saved-configuration file: flash:/startup2.cfg
 Bootrom-access enable state: enabled
```

Table 17 Command output

Field	Description
MainBoard	Displays the startup configuration files on the IRF master.
Current Startup saved-configuration file	Configuration file used at the current startup.
Next main startup saved-configuration file	Main configuration file to be used at the next startup.
Next backup startup saved-configuration file	Backup configuration file to be used at the next startup.
(This file does not exist.)	If the specified next-startup configuration file has been deleted, this comment appears next to the file name.
Slot 2	Displays the startup configuration files on IRF member 2.

display this

Syntax

display this [**by-linenum**] [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

1: Monitor level

Parameters

by-linenum: Displays the number of each line.

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display this** to display the running configuration in the current view.

Use this command to verify the configuration you have made in a certain view.

Typically, this command does not display parameters that are set to their default settings.

For some parameters that can be successfully configured even if their dependent features are not enabled, this command displays their settings after the dependent features are enabled.

Executed in any user interface view, this command displays the running configuration of all user view interfaces.

Executed in any VLAN view, this command displays the running configuration of all VLANs.

Examples

Display the running configuration on interface GigabitEthernet 1/0/1.

```
<Sysname> system-view
[Sysname] interface gigabitethernet 1/0/1
[Sysname-GigabitEthernet1/0/1] display this
#
interface GigabitEthernet1/0/1
 port link-type hybrid
 undo port hybrid vlan 1
 port hybrid vlan 2 to 4 untagged
 port hybrid pvid vlan 2
#
return
```

Display the running configuration on user interfaces.

```
<Sysname> system-view
[Sysname] user-interface vty 0
[Sysname-ui-vty0] display this
#
user-interface aux 0
user-interface vty 0
 history-command max-size 256
```

```
user-interface vty 1 15
#
return
```

reset saved-configuration

Syntax

reset saved-configuration [**backup** | **main**]

View

User view

Default level

3: Manage level

Parameters

backup: Deletes the backup next-startup configuration file.

main: Deletes the main next-startup configuration file.

Description

Use **reset saved-configuration** to delete next-startup configuration files.

Delete the next-startup configuration file if it does not match the software version or has been corrupted.

Use this command with caution. This command permanently deletes the next-startup configuration files from all IRF member devices.

You can delete the main, the backup, or both. If the main and backup next-startup configuration files are the same file, the system sets the attribute of the configuration file to NULL instead of deleting the file. You can permanently delete the file after its attribute changes to NULL.

If no configuration file attribute is specified, the **reset saved-configuration** command deletes the main startup configuration file.

Related commands: **display saved-configuration** and **save**.

Examples

Delete the next-startup configuration file from the storage media of the device.
```
<Sysname> reset saved-configuration backup
The saved configuration file will be erased. Are you sure? [Y/N]:y
Configuration file in flash is being cleared.
Please wait ...
..
MainBoard:
 Configuration file is cleared.
Slot 2:
 Erase next configuration file successfully
```

restore startup-configuration

Syntax

restore startup-configuration from *src-addr src-filename*

View

User view

Default level

3: Manage level

Parameters

src-addr: Specifies a TFTP server's IPv4 address or name. The address cannot be an IPv6 address.

src-filename: Specifies the file name of the configuration file to be downloaded.

Description

Use **restore startup-configuration** to download a configuration file from a TFTP server and specify it as the next-startup configuration file.

This command is not supported in FIPS mode.

Before restoring the configuration file for the next startup, make sure the server is reachable, the server is enabled with TFTP service, and you have read and write permissions.

This command restores only the main next-startup configuration file.

This command provides an easy method for configuration file restoration by automatically performing all operations required for restoring the next-startup configuration file.

It downloads the configuration file to the root directory of the storage medium on each member device and specifies the file as the next-startup configuration file.

This command assumes that all MPUs use the same type of storage medium.

This command assumes that all IRF members use the same type of storage medium. If a subordinate device uses a different type of storage medium than the master, the command cannot propagate the configuration file to the subordinate device.

Examples

Download the configuration file **config.cfg** from the TFTP server at 2.2.2.2, and specify the file as the main next-startup configuration file of the device.

```
<Sysname> restore startup-configuration from 2.2.2.2 config.cfg
Restore next startup-configuration file from 2.2.2.2. Please wait...finished!
Now restore next startup-configuration file from main to slave board. Please
wait...finished!
```

save

Syntax

save *file-url* [**all** | **slot** *slot-number*]

save [**safely**] [**backup** | **main**] [**force**]

View

Any view

Default level

2: System level

Parameters

file-url: Specifies a file path, where the file extension must be .cfg. If the keyword **all** or an MPU slot is specified, the file path cannot include a member ID. If the file path includes a folder name, you must first create the folder on the member device.

all: Saves the running configuration with the specified file name to all member devices.

slot *slot-number*: Saves the running configuration with the specified file name to a subordinate device. The *slot-number* argument represents the IRF member ID of the device.

safely: Saves the configuration file in safe mode. If this keyword is not specified, the system saves the configuration file in fast mode. Safe mode is slower than fast mode, but more secure. In safe mode, the system saves configuration in a temporary file and starts overwriting the target next-startup configuration file after the save operation is complete. If a reboot or power failure occurs during the save operation, the next-startup configuration file is still retained. In fast mode, the device directly overwrites the target next-startup configuration file. If a reboot or power failure occurs during this process, the next-startup configuration file is lost.

backup: Saves the running configuration to a configuration file, and specifies the file as the backup next-startup configuration file.

main: Saves the running configuration to a configuration file, and specifies the file as the main next-startup configuration file.

force: Saves the running configuration to the next-startup configuration file already specified in the system. Without this keyword, the system asks you to confirm your operation. If you do not confirm your operation within 30 seconds, the system automatically aborts the operation. If you enter **Y** within the time limit, you can continue the save process and change the next-startup configuration file during this process.

Description

Use **save** *file-url* [**all** | **slot** *slot-number*] to save the running configuration to a configuration file, without specifying the file as a next startup configuration file.

Use **save** [**safely**] [**backup** | **main**] [**force**] to save the running configuration to the root directory of the storage media on each member device and specify the file as a next startup configuration file.

If the file specified for *file-url* does not exist, the system creates the file before saving the configuration. If neither the **all** keyword nor an MPU slot is specified, the system saves the configuration to the master.

If the **backup** or **main** keyword is not specified, the **main** keyword applies.

The configuration auto-update function enables all the member devices to automatically save the running configuration as the master device does when you execute the **save** [**safely**] [**backup** | **main**] [**force**] command or the **save** *filename* **all** command. If this function is disabled, only the master device saves the configuration.

Related commands: **display current-configuration**, **display saved-configuration**, **reset saved-configuration**, and **slave auto-update config**.

Examples

Save the running configuration to the configuration file **startup.cfg** in the root directory of the storage media on each member device, and specify the file as the next-startup configuration file.

```
<Sysname> display startup
MainBoard:
 Current startup saved-configuration file: NULL
 Next main startup saved-configuration file: flash:/aa.cfg
 Next backup startup saved-configuration file: NULL
```

```
 Bootrom-access enable state: enabled
Slot 2:
 Current startup saved-configuration file: NULL
 Next main startup saved-configuration file: flash:/aa.cfg
 Next backup startup saved-configuration file: NULL
 Bootrom-access enable state: enabled
<Sysname> save
The current configuration will be written to the device. Are you sure? [Y/N]:y
Please input the file name(*.cfg)[flash:/aa.cfg]
(To leave the existing filename unchanged, press the enter key):startup.cfg
flash:/startup.cfg exists, overwrite? [Y/N]:y
 Validating file. Please wait.................
 The current configuration is saved to the active main board successfully.
Slot 2:
 The current configuration file is saved successfully.
 Configuration is saved to device successfully.
<Sysname> display startup
MainBoard:
 Current startup saved-configuration file: NULL
 Next main startup saved-configuration file: flash:/startup.cfg
 Next backup startup saved-configuration file: NULL
 Bootrom-access enable state: enabled
Slot 2:
 Current startup saved-configuration file: NULL
 Next main startup saved-configuration file: flash:/startup.cfg
 Next backup startup saved-configuration file: NULL
 Bootrom-access enable state: enabled
```

The output shows that the main next-startup configuration file has changed from **aa.cfg** to **startup.cfg** on each member device.

\# Save the running configuration to the configuration file **test.cfg** on IRF member 2.

- Method 1:

```
<Sysname> save test.cfg slot 2
The current configuration will be saved to slot2#flash:/test.cfg. Continue? [Y/N]:y
Now saving current configuration to the device.
Saving configuration slot2#flash:/test.cfg. Please wait...
.........
Configuration is saved to slot2#flash successfully.
```

- Method 2:

```
<Sysname> save slot2#flash:/test.cfg
```

\# Save the running configuration to the main next-startup configuration file, without any confirmation required.

```
<Sysname> save force
 Validating file. Please wait.................
 The current configuration is saved to the active main board successfully.
Slot 2:
 The current configuration file is saved successfully.
 Configuration is saved to device successfully.
```

slave auto-update config

slave auto-update config

undo slave auto-update config

View

System view

Default level

2: System level

Parameters

None

Description

Use **slave auto-update config** to enable the configuration auto-update function for all the member devices to automatically save the running configuration as the master device does when you execute the **save** [**safely**] [**backup** | **main**] [**force**] command or the **save** *file-url* **all** command.

Use **undo slave auto-update config** to disable the function.

If configuration auto-update is disabled, the **save** [**safely**] [**backup** | **main**] [**force**] command and the **save** *file-url* **all** command save the running configuration only to the master device.

To ensure configuration consistency across the IRF fabric, HP recommends enabling the function.

By default, the configuration file auto-save function is enabled.

The **save** command executed with only the *file-url* argument saves the running configuration only to the specified path, regardless of whether the configuration auto-update function has been enabled.

Examples

Enable configuration auto-update.

```
<Sysname> system-view
[Sysname] slave auto-update config
```

startup saved-configuration

Syntax

startup saved-configuration *cfgfile* [**backup** | **main**]

undo startup saved-configuration

View

User view

Default level

3: Manage level

Parameters

cfgfile: Specifies a configuration file name with the extension .cfg. The file must be stored in the root directory of the storage media.

backup: Sets the configuration file as the backup next-startup configuration file.

main: Sets the configuration file as the main next-startup configuration file.

Description

Use **startup saved-configuration** to specify the configuration file to be used at the next startup for all IRF member devices.

Use **undo startup saved-configuration** to configure all IRF member devices to start up with the factory defaults at the next startup.

In an IRF fabric, the **startup saved-configuration** command applies to all IRF members. To successfully configure the command, verify that the specified file has been saved to the root directory of the storage media on each member.

In an IRF fabric, use the **undo startup saved-configuration** command with caution. This command can cause an IRF split after the IRF fabric or an IRF member reboots.

If neither **backup** nor **main** is specified, the **startup saved-configuration** command specifies the main next-startup configuration file.

For high availability, specify separate files as the main and backup next-startup configuration files, even though they can be the same file.

The **undo startup saved-configuration** command changes the file attribute of the main and backup next-startup configuration files to NULL, but does not delete the two configuration files.

You can also specify a configuration file as a next-startup configuration file when you use the **save** command to save the running configuration to it.

Related commands: **display startup**.

Examples

Specify a startup configuration file.

```
<Sysname> startup saved-configuration testcfg.cfg
Please wait ...
Setting the master board ..........
... Done!
Setting the slave board ...
Slot 2:
 Set next configuration file successfully
```

Software upgrade commands

The device supports the FIPS mode that complies with NIST FIPS 140-2 requirements. Support for features, commands, and parameters might differ in FIPS mode and non-FIPS mode. For more information about FIPS mode, see *Security Configuration Guide*.

boot-loader

Syntax

boot-loader file *file-url* **slot** { **all** | *slot-number* } { **main** | **backup** }

View

User view

Default level

3: Manage level

Parameters

file *file-url*: Specifies a file path, a string of 1 to 63 characters. If you enter a relative path, the system automatically converts it to an absolute path. The absolute path can contain up to 63 characters. The file name uses the *drive***:/**file-name* format or the *file-name* format, where:

- The *drive* argument specifies the storage medium where the file is saved. If only one storage medium is available, you can omit the storage medium name. The storage medium of the master device is identified by the storage name, **flash**, for example. The storage medium of a subordinate device is identified in the **slot**slot-number#StorageMediumName* format (for example, **slot2#flash**), where *slot-number* represents the IRF member ID of the device. If the **all** keyword is specified, the *drive* argument must not include an IRF member ID.

- The *file-name* argument specifies the file name, which typically uses the .bin extension.

slot: Specifies IRF members.

- **all**: Specifies all member devices in the IRF fabric.

- *slot-number*: Specifies an IRF member device by its member ID.

main: Specifies the file as the main system software image. The main system software image has higher priority than the backup system software image at startup.

backup: Specifies the file as the backup system software image. The backup system software image is used at startup only if the main system software image is unavailable.

Description

Use **boot-loader** to specify a startup system software image for a member device or all member devices.

To execute the **boot-loader** command successfully, make sure you have saved the image file in the root directory of the specified storage medium.

If the **all** keyword is specified, make sure you have saved the specified system software image file in the root directory of the storage medium on each member device.

Names of the startup system software image files on member devices can be different, but their versions must be the same for a correct startup.

In FIPS mode, the file must pass authenticity verification before it can be set as a startup system software image file.

Related commands: **display boot-loader**.

Examples

Specify **test.bin** as the main startup system software image file for the master (member ID 1). This example assumes that this file has been saved in the root directory of the storage medium on the master.

```
<Sysname> boot-loader file test.bin slot 1 main
  This command will set the boot file of the specified board. Continue? [Y/N]:y
The specified file will be used as the main boot file at the next reboot on slot 1!
```

Specify **test.bin** as the main startup system software image file for IRF member device 2. This example assumes that the device is a subordinate device and the file has been saved in the root directory of the storage medium on the device.

```
<Sysname> boot-loader file slot2#flash:/test.bin slot 2 main
  This command will set the boot file of the specified board. Continue? [Y/N]:y
The specified file will be used as the main boot file at the next reboot on slot 2!
```

Specify **test.bin** as the main startup system software image file for all member devices. This example assumes that the file has been saved in the root directory of the storage medium on each member device.

```
<Sysname> boot-loader file test.bin slot all main
  This command will set the boot file of the specified board. Continue? [Y/N]:y
  The specified file will be used as the main boot file at the next reboot on slot 1!
  The specified file will be used as the main boot file at the next reboot on slot 2!
```

boot-loader update file

Syntax

boot-loader update file *file-url* **slot** { *slot-number* | **all** } { **main** | **backup** }

View

User view

Default level

3: Manage level

Parameters

file-url: Specifies a file path, a string of 1 to 63 characters. For more information, see "boot-loader."

slot: Specifies IRF member devices.

- *slot-number*: Specifies an IRF member device by its member ID.
- **all**: Specifies all member devices in the IRF fabric.

main: Specifies the file as the main system software image. The main system software image has higher priority than the backup system software image at startup.

backup: Specifies the file as the backup system software image. The backup system software image is used at startup only if the main system software image is unavailable.

Description

Use **boot-loader update file** to specify a startup system software image file for an IRF member device or all IRF member devices.

In contrast to the **boot-loader update file** command, the **boot-loader update file** command automatically copies the startup system software image to every target member device. You do not need to do that separately.

In FIPS mode, the file must pass authenticity verification before it can be set as the main startup system software image on IRF member devices.

Examples

Specify a file as the main startup system software image file for all IRF member devices.

```
<Sysname> tftp 192.168.1.26 get main.bin
  File will be transferred in binary mode
  Downloading file from remote TFTP server, please wait...|
  TFTP: 10105088 bytes received in 36 second(s)
  File downloaded successfully.
<Sysname> boot-loader update file main.bin slot all main
This command will update the specified boot file of all boards. Continue? [Y/N]:Y
Now is updating, please wait...
<Sysname> reboot
```

bootrom

Syntax

bootrom update file *file-url* **slot** *slot-number-list*

View

User view

Default level

3: Manage level

Parameters

update file *file-url*: Loads a Boot ROM image in a storage medium to the Normal area of Boot ROM. The *file-url* argument specifies the image file path, a string of 1 to 63 characters. For more information about file path naming, see "boot-loader."

slot *slot-number-list*: Specifies a space-separated list of up to seven IRF member ID items. Each item specifies an IRF member device by its member ID or a range of IRF member devices in the form of *start-member-id* **to** *end-member-id*. For example, **slot 0 to 1 2**.

Description

Use **bootrom** to upgrade the Boot ROM image of a member device.

Make sure the upgrade file has been saved in the root directory of the storage medium on the device you are upgrading.

In FIPS mode, the file must pass authenticity verification before it can be set as the Boot ROM image file.

Examples

Use the **a.btm** file to upgrade Boot ROM on the master (member ID 1).

```
<Sysname> bootrom update file a.btm slot 1
  This command will update bootrom file on the specified board(s), Continue? [Y/N]:y
  Now updating bootrom, please wait...
  Bootrom update succeeded in slot 1.
```

Use the **a.btm** file to upgrade Boot ROM on IRF member device 2 (a subordinate device). This example assumes that the upgrade file has been saved in the root directory of the storage medium on the subordinate device.

```
<Sysname> bootrom update file slot2#flash:/a.btm slot 2
  This command will update bootrom file on the specified board(s), Continue? [Y/N]:y
  Now updating bootrom, please wait...
  Bootrom update succeeded in slot 2.
```

bootrom-update security-check enable

Syntax

bootrom-update security-check enable

undo bootrom-update security-check enable

View

System view

Default level

2: System level

Parameters

None

Description

Use **bootrom-update security-check enable** to enable Boot ROM image validity check.

Use **undo bootrom-update security-check enable** to disable Boot ROM image validity check.

By default, Boot ROM image validity check is enabled.

Before a Boot ROM image upgrade starts, the Boot ROM image validity check function examines the upgrade Boot ROM image for file validity or incompatibility with hardware. If the Boot ROM image passes the check, the upgrade process starts. If not, the system does not perform the upgrade.

Examples

Enable Boot ROM image validity check.

```
<Sysname> system-view
[Sysname] bootrom-update security-check enable
```

display boot-loader

Syntax

display boot-loader [**slot** *slot-number*] [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

2: System level

Parameters

slot *slot-number*: Specifies the member ID of an IRF member device. If no member device is specified, this command displays the system software images on each IRF member device.

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display boot-loader** to display system software image information, including the current system software image and the startup system software images.

Related commands: **boot-loader**.

Examples

Display system software images.

```
<Sysname> display boot-loader
 Slot 1
The current boot app is:  flash:/test.bin
The main boot app is:     flash:/test.bin
The backup boot app is:   flash:/test.bin
```

Table 18 Command output

Field	Description
Slot	Displays the member device ID.
The current boot app is	System software image that has been loaded on the member device.
The main boot app is	Main system software image to be used at the next startup.
The backup boot app is	Backup system software image to be used at the next startup.

display patch

Syntax

display patch [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

3: Manage level

Parameters

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display patch** to display patch files that have been installed.

If a patch file is loaded from a patch package file, this command also displays the package file version.

Examples

Display patch files that have been installed.
```
<Sysname> display patch
The following patch packages are loaded:
flash:/patch-package.bin, Package-Version-001, loaded on slot(s):
1
```

Table 19 Command output

Field	Description
flash:/patch-package.bin	File directory.
Package-Version-001	Patch package file version.
loaded on slot(s):	Slot number of the IRF member device on which the patches have been loaded.

display patch information

Syntax

display patch information [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

3: Manage level

Parameters

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display patch information** to display hotfix information.

Examples

Display hotfix information.
```
<Sysname> display patch information
The location of patches: flash:/
Slot Version   Temporary Common Current Active Running  Start-Address
```

127

```
  -------------------------------------------------------------------
1    XXX         0          0        0       0        0          0x53f8364
```

Table 20 Command output

Field	Description
The location of patches	Patch file location. You can use the **patch location** command to change the location.
Slot	Member ID.
Version	Patch version.
Temporary	Number of temporary patches.
Common	Number of common patches.
Current	Total number of patches.
Running	Number of patches in RUNNING state.
Active	Number of patches in ACTIVE state.
Start-Address	Start address of the memory patch area in the memory.

patch active

Syntax

patch active [*patch-number*] **slot** *slot-number*

View

System view

Default level

3: Manage level

Parameters

patch-number: Specifies the sequence number of a patch. Values available for this argument depend on the patch file that has been loaded. If no sequence number is specified, this command validates all INACTIVE patches. If a sequence number is specified, this command activates the specified patch and all its previous INACTIVE patches.

slot *slot-number*: Specifies an IRF member device by its member ID.

Description

Use **patch active** to activate patches.

Before executing this command, you must use the **patch load** command to load patches.

The **patch active** command changes the state of INACTIVE patches to ACTIVE state and runs the patches. To continue to run these patches after a reboot, use the **patch run** command to change their state to RUNNING. If not, the state of ACTIVE patches changes back to INACTIVE at a reboot.

Examples

Activate patch 3 and all its previous DEACTIVE patches on the IRF member device 1.

```
<Sysname> system-view
[Sysname] patch active 3 slot 1
```

Activate all DEACTIVE patches on IRF member device 1.

```
<Sysname> system-view
[Sysname] patch active slot 1
```

patch deactive

Syntax

patch deactive [*patch-number*] **slot** *slot-number*

View

System view

Default level

3: Manage level

Parameters

patch-number: Specifies the sequence number of a patch. Values available for this argument depend on the patch file that has been loaded. If no sequence number is specified, this command deactivates all ACTIVE patches. If a sequence number is specified, this command deactivates the specified patch and all its subsequent ACTIVE patches.

slot *slot-number*: Specifies an IRF member device by its member ID.

Description

Use **patch deactive** to stop running patches.

This command is not applicable to patches in RUNNING state.

Examples

Stop running patch 3 and all its subsequent ACTIVE patches on IRF member device 1.

```
<Sysname> system-view
[Sysname] patch deactive 3 slot 1
```

Stop running all ACTIVE patches on IRF member device 1.

```
<Sysname> system-view
[Sysname] patch deactive slot 1
```

patch delete

Syntax

patch delete [*patch-number*] **slot** *slot-number*

View

System view

Default level

3: Manage level

Parameters

patch-number: Specifies the sequence number of a patch. Values available for this argument depend on the patch file that has been loaded. If no sequence number is specified, this command removes all patches in the patch memory area. If a sequence number is specified, this command removes the specified patch and all its subsequent patches.

slot *slot-number*: Specifies an IRF member device by its member ID.

Description

Use **patch delete** to remove patches from the patch memory area.

This command does not delete patches from the storage media. After being removed from the patch memory area, the patches changes to the IDLE state.

Examples

Remove patch 3 and all its subsequent patches from the patch memory area on IRF member device 1.

```
<Sysname> system-view
[Sysname] patch delete 3 slot 1
```

Remove patch 3 and all its subsequent patches from the patch memory area on IRF member device 1.

```
<Sysname> system-view
[Sysname] patch delete slot 1
```

patch install

Syntax

patch install { *patch-location* | **file** *filename* }

undo patch install

View

System view

Default level

3: Manage level

Parameters

patch-location: Specifies the patch file path, a string of 1 to 64 characters. Provide this argument if the patch file is not packaged in a patch package file, and make sure the file name is correct.

file *filename*: Specifies a patch package file name.

Description

Use **patch install** to install and run patches in one step.

Use **undo patch install** to remove all ACTIVE and RUNNING patches from the patch memory area.

Before installing patches, save the patch file or patch package file to the root directory of the storage medium on each member device.

Before installing new patches, use the **display patch information** command to check for patches that have been installed. If any patches have been installed, use the **undo patch install** command to uninstall them.

In FIPS mode, the patch file or the patch package file must pass authenticity verification before the **patch install** command can be executed.

The **patch install** command changes the state of installed patches from IDLE to ACTIVE or RUNNING, depending on your choice during the command execution process. If you choose to have installed patches continue to run after a reboot, the installed patches are set in RUNNING state and remain in this state after a reboot. If not, the installed patches are set in ACTIVE state and change to the DEACTIVE state at a reboot.

The **undo patch install** command change the state of ACTIVE and RUNNING patches to IDLE, but does not delete them from the storage media.

Examples

Install files from the flash.

```
<Sysname> system-view
[Sysname] patch install flash:
Patches will be installed. Continue? [Y/N]:y
Do you want to run patches after reboot? [Y/N]:y
Installing patches…
```

Install patches from a patch package file.

```
<Sysname> system-view
[Sysname] patch install file patch_package.bin
Patches will be installed. Continue? [Y/N]:y
Do you want to run patches after reboot? [Y/N]:y
Installing patches…
```

patch load

Syntax

patch load slot *slot-number* [**file** *filename*]

View

System view

Default level

3: Manage level

Parameters

slot *slot-number*: Specifies an IRF member device by its member ID.

file *filename*: Specifies a patch package file name. If no package file is specified, the system loads patch files from the patch file location (see "patch location").

Description

Use **patch load** to load patches from a storage medium to the patch memory area.

The system loads patch files from the root directory of storage media. Before loading patches, save the patch file or patch package file to the root directory of the storage medium on each member device.

In FIPS mode, the patch package file or the patch file must pass authenticity verification before it can be loaded.

Examples

Load patches from patch files for IRF member device 1.

```
<Sysname> system-view
[Sysname] patch load slot 1
```

Load patches from a patch package file for IRF member device 1.

```
<Sysname> system-view
[Sysname] patch load slot 1 file flash:/patchpackage.bin
```

patch location

Syntax

patch location *patch-location*

View

System view

Default level

3: Manage level

Parameters

patch-location: Specifies the patch file location, a string of 1 to 64 characters. HP recommends using the root directory of a storage medium.

Description

Use **patch location** to configure the patch file location.

By default, the patch file location is **flash:**.

The device loads patch files from the root directory of a storage medium. If your device has only one storage medium, you do not need to execute this command.

This command does not take effect for patch package files.

Examples

\# Specify the root directory of the flash as the patch file location.
```
<Sysname> system-view
[Sysname] patch location flash:
```

patch run

Syntax

patch run [*patch-number*] [**slot** *slot-number*]

View

System view

Default level

3: Manage level

Parameters

patch-number: Specifies the sequence number of a patch. Values available for this argument depend on the patch file that has been loaded. If no sequence number is specified, this command confirms all ACTIVE patches (including ACTIVE patches for auxiliary CPUs) and changes their state to RUNNING. If a sequence number is specified, this command confirms the specified ACTIVE patch and all its previous patches, and changes their state to RUNNING.

slot *slot-number*: Specifies an IRF member device by its member ID. If no member device is specified, the command applies to all member devices.

Description

Use **patch run** to confirm ACTIVE patches.

After being confirmed, ACTIVE patches are set in RUNNING state and can continue to run after a reboot.
If not being confirmed, ACTIVE patches are set in DEACTIVE state at a reboot.

Examples

Confirm patch 3 and all its previous ACTIVE patches on IRF member device 1.

```
<Sysname> system-view
[Sysname] patch run 3 slot 1
```

Confirm all ACTIVE patches on IRF member device 1.

```
<Sysname> system-view
[Sysname] patch run slot 1
```

ISSU commands

The ISSU feature is available only on the HP 5500 EI switch.

display issu rollback-timer

Syntax

display issu rollback-timer [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

1: Monitor level

Parameters

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display issu rollback-timer** to display information about the ISSU rollback timer.

A newly configured rollback timer takes effect in the next ISSU upgrade. The current rollback timer may be greater than the newly configured rollback timer.

Related commands: **issu rollback-timer**.

Examples

Display information about the rollback timer.
```
<Sysname> display issu rollback-timer
RollBack timer is in process.
Configured Rollback Timer: 45 minutes.
Left: 43 minutes.
```
Table 21 Command output

Field	Description
RollBack timer is in process	An ISSU upgrade is being performed and the rollback timer is running normally.

Field	Description
RollBack timer is not in process	The rollback timer is not working. Other possible values for this field include: - No ISSU is performed. - The ISSU upgrade has completed. - The rollback timer has been deleted. (Executing the **issu accept** or **issu commit** command deletes the rollback timer.)
Left	Remaining time in minutes before the rollback timer expires. This field is displayed only when the rollback timer is started.

display issu state

Syntax

display issu state [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

1: Monitor level

Parameters

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display issu state** to display the ISSU state, including whether the new system software image is compatible with the current one and the adopted ISSU upgrade method.

This command helps you determine the next step during an ISSU upgrade that must follow a strict procedure.

Examples

Display the ISSU state before an ISSU upgrade.

```
<Sysname> display issu state
ISSU state: Init
Compatibility: Unknown
Work State: Normal
```

After executing the **issu load** command, display the ISSU state on the master.

```
<Sysname> display issu state
ISSU state: Load
Compatibility: Compatible
Work State: Normal
```

```
Upgrade Method: Board by board
Original version:   version1
Original boot file is flash:/soft-version1.bin
Upgrade version:   version2
Upgrade boot file is flash:/soft-version2.bin
```

Table 22 Command output

Field	Description
ISSU state	ISSU state: • **Init**—No ISSU upgrade starts or an ISSU process has completed. • Load—The specified subordinate switch has been upgraded and the rollback timer is running. • **Switchover**—The master has been rebooted with the **issu run switchover** command. • **Accept**—The ISSU upgrade has been accepted, and the rollback timer has been deleted. No auto-rollback will be performed during this ISSU process. • **Commit**—Not all the IRF member switches have been upgraded. In this state, neither manual nor automatic rollback can be performed.
Compatibility	Version compatibility check results: • **Compatible**—The current system software image is compatible with the new system software image. • **Incompatible**—The current system software image is incompatible with the new system software image. The **force** keyword is required when you execute the **issu load** command. The specified subordinate switch enters the Recover state after rebooted with the new system software image. • **Unknown**—The specified system software image version does not support ISSU, or the system software image cannot be upgraded through ISSU. In this mode, you cannot upgrade the system software image of the IRF fabric through ISSU.
Work State	The working mode of the IRF fabric: • **Normal**—Normal working mode. • **Independent active**—Incompatible ISSU is adopted. The specified IRF member switch enters the Recover state after it is rebooted with the new system software image.
Upgrade Method	ISSU upgrade method.
Original version	Original system software image version.
Original boot file	Directory of the original system software image of each IRF member switch.
Upgrade version	New system software image version. If an IRF member switch is being upgraded and version information exchange is not yet complete, the new version is not available and the value of this field is **N/A**.
Upgrade boot file	Directory of the new system software image.

display version comp-matrix

Syntax

display version comp-matrix [**file** *upgrading-filename*] [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

1: Monitor level

Parameters

file *upgrading-filename*: Displays compatibility information between the specified new system software image and the current system software image.

The specified *upgrading-filename* must exist in the Flash. The file name is in the format **[***drive:***/]***file-name*, where the following conditions apply:

- The items in square brackets [ ] are optional.
- *drive* specifies the Flash of a member switch, and takes the format **[slot***slot-number***#]flash:**.
- *file-name* specifies the name of the new system software image.

If you enter a relative path in the format of **file-name**, the system automatically converts it to an absolute path in the format of **[***drive:***/]***file-name*. The absolute path can contain no more than 63 characters.

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display version comp-matrix** to display version compatibility information.

If you provide the *upgrading-filename* argument, you will see the compatibility information between the specified system software image and the system software image.

If you do not provide the *upgrading-filename* argument, you will see information about the compatibility database of the current system software image. The compatibility database records compatibility information between the current system software image and history system software images.

Examples

Display the version compatibility database information of the current system software image.

```
<Sysname> display version comp-matrix
Number of Matrices in Table = 1
Matrix for 5500 EI

Running Version: version1
Version Compatibility List:
Version2 (Compatible)
```

```
Version3 (Compatible)
```

View the version compatibility information between the current system software image and the new system software image **software.bin** after executing the **issu load** command.

```
<Sysname> display version comp-matrix file software.bin
Number of Matrices in Table = 1
Matrix for 5500 EI

Running Version: version1
Version Compatibility List:
version2 (Compatible)
```

Table 23 Command output

Field	Description
Number of Matrices in Table	Number of product versions contained in the current IRF fabric.
Matrix for xx	Product version of the xx series devices.
Running Version	Current system software image version of the IRF fabric.
Version Compatibility List	List of software version compatibility information.
AA (Compatible)	The version AA system software image is compatible with the current system software image.
BB (Incompatible)	The version BB system software image is incompatible with the current system software image. You must provide the **force** keyword when you execute the **issu load** command.
CC (Unknown)	The compatibility between the two versions is unknown.

issu accept

Syntax

issu accept slot *slot-number*

View

System view

Default level

2: System level

Parameters

slot *slot-number*: Specifies the ID of an IRF member switch. The ID must be the same as that specified in the **issu load** command.

Description

Use **issu accept** to accept the ISSU upgrade and delete the auto-rollback timer.

With this command executed, the system deletes the rollback timer and IRF member switches cannot automatically roll back to the previous version.

Related commands: **issu load** and **issu commit**.

Examples

Accept the ISSU upgrade for the IRF member switch in slot 1.

```
<Sysname> system-view
[Sysname] issu accept slot 1
```

issu commit

Syntax

issu commit slot *slot-number*

View

System view

Default level

2: System level

Parameters

slot *slot-number*: Specifies the ID of a member switch that is not upgraded.

Description

Use **issu commit** to upgrade the specified member switch that is not upgraded.

Executing the **issu commit** command completes the ISSU upgrade process, and you cannot perform a version rollback operation with the **issu rollback** command.

Related commands: **issu load** and **issu accept**.

Examples

Upgrade the member switch with ID 2.

```
<Sysname> system-view
[Sysname] issu commit slot 2
The specified board will reboot and be upgraded. Continue? [Y/N]:y
```

issu load

Syntax

issu load file *upgrading-filename* **slot** *slot-number* [**force**]

View

System view

Default level

2: System level

Parameters

file *upgrading-filename*: Name of the new system software image file. This file must be saved in the Flash root directory. The file name is in the format of [drive:/]file-name, where the following conditions apply:

- The items in square brackets [ ] are optional.
- *drive* specifies the Flash of a member switch, and takes the format **[slot***slot-number***#]flash:**.
- *file-name* specifies the name of the new system software image.

If you enter a relative path in the format of file-name, the system automatically converts it to an absolute path in the format of [drive:/]file-name. The absolute path can contain no more than 64 characters.

slot *slot-number*: Specifies the ID of an IRF member switch.

force: Forces the IRF member switch to upgrade its incompatible system software image.

- If the system software image specified by *upgrading-filename* is incompatible with the system software image, you must provide this key word to perform the ISSU upgrade.
- If the system software image specified by *upgrading-filename* is compatible with the system software image, you do not need to provide this keyword to perform the ISSU upgrade.

Description

Use **issu load file** *upgrading-filename* **slot** *slot-number* [**force**] to upgrade the specified subordinate switch.

When this command is executed, the specified subordinate switch reboots with the new system software image.

Before executing the **issu load** command, verify the following conditions:

- The master and subordinate switch must run the same system software image (the same version, name, and directory).
- The new system software image has been saved in the Flash of each IRF member switch.
- All IRF member switches run the same system software image.

Examples

\# Upgrade the subordinate switch with ID 2 by using upgrade file **new.bin**.

```
<Sysname> system-view
[Sysname] issu load file new.bin slot 2
This command will begin ISSU, and the specified board will reboot and be upgraded. Please
save the current running configuration first; otherwise, the configuration may be
lost.Continue? [Y/N]: y
```

issu rollback

Syntax

issu rollback slot *slot-number*

View

System view

Default level

2: System level

Parameters

slot *slot-number*: Specifies the ID of an upgraded member switch. The value must be the same as that specified in the **issu load** command.

Description

Use **issu rollback** to cancel the ISSU upgrade and the configuration will automatically roll back to the previous version.

If the IRF member switch is rebooting, you cannot perform the manual rollback operation.

After you execute the **issu commit** command for a member switch, the member switch reboots with the new system software image. During the reboot, you cannot perform any manual rollback operation.

Related commands: **issu load**.

Assume that the member ID specified in the **issu load** command is 1. Cancel the ISSU upgrade on the member switch with ID 1 and roll back the system software image to the previous version.

```
<Sysname> system-view
[Sysname] issu rollback slot 1
This command will quit the ISSU process and the specified board  will roll back to the
previous version. Continue? [Y/N]:y
```

issu rollback-timer

Syntax

issu rollback-timer *minutes*

undo issu rollback-timer

View

System view

Default level

2: System level

Parameters

minutes: Rollback timer in minutes, ranging from 0 to 120. The value of 0 indicates that the version rollback function is disabled and the rollback timer is not created when you execute the **issu load** command.

Description

Use **issu rollback-timer** to set the rollback timer.

Use **undo issu rollback-timer** to restore the default.

By default, the rollback timer value is 45 minutes.

With the **issu load** command executed, the system automatically creates a version rollback timer. If you do not upgrade IRF member switches with the **issu accept** command or you do not disable the auto-rollback function with **issu commit** command before the specified rollback timer expires, the system automatically stops the ISSU upgrade and reverts to the previous system software image version.

If you execute the **issu rollback-timer** command during an ISSU upgrade process, the newly configured rollback timer takes effect for the next ISSU upgrade.

Examples

Set the rollback timer value to 30 minutes.

```
<Sysname> system-view
[Sysname] issu rollback-timer 30
```

issu run switchover

Syntax

issu run switchover slot *slot-number*

View

System view

Default level

2: System level

Parameters

slot *slot-number*: Specifies the ID of an upgraded member switch. The value must be the same as that specified in the **issu load** command.

Description

Use **issu run switchover** to reboot the master.

During compatible ISSU upgrade, after you execute the **issu run switchover** command, if you do not upgrade the un-upgraded IRF member switches with the **issu accept** command or you do not disable the auto-rollback function with **issu commit** command before the specified rollback timer expires, the system automatically stops the ISSU upgrade process and reverts to the previous system software image version.

During incompatible ISSU upgrade, when you execute the **issu run switchover** command, the IRF member switches except the specified subordinate switch reboot with the new system software image, and then the ISSU upgrade process is completed.

Related commands: **issu load**.

Examples

Reboot the master.

```
<Sysname> system-view
[Sysname] issu run switchover slot 1
Master will reboot, switch the specified board to master and update the line card. Continue?
[Y/N]:y
```

Device management commands

brand

Syntax

brand { **hp** | **h3c** | **3com** } [**slot** *slot-number*]

View

User view

Default level

2: System level

Parameters

slot *slot-number*: Specifies an IRF member switch. If this option is not specified, the command applies to all member switches in the IRF fabric.

Description

Use **brand** to change the brand name for an IRF member switch.

Only the HP 5500 SI switches support the **3com** keyword.

After you perform this command, use the **display brand** command to verify the new brand name and then reboot the member switch to make your change take effect.

Examples

Display brand information.

```
<Sysname>display brand
Current BRANDs:
 Slot 1: HP.
 Slot 3: H3C.
New BRANDs:
 Slot 1: HP.
 Slot 3: H3C.
<Sysname>
```

Change the brand name of member switch 3 to HP.

```
<Sysname>brand hp slot 3
Configuration will take effect after next reboot.
 Do you want to continue? [Y/N]:y
 Configuration is successful.
```

Display brand information.

```
<Sysname>display brand
Current BRANDs:
 Slot 1: HP.
 Slot 3: H3C.
New BRANDs:
 Slot 1: HP.
```

```
 Slot 3: HP.
<Sysname>
```

The output shows that the brand name has been changed. After a reboot, member switch 3 becomes an HP member switch.

clock datetime

Syntax

clock datetime *time date*

View

User view

Default level

3: Manage level

Parameters

time: Specifies a time, in the *hh:mm:ss* format. The *hh* value is in the range of 00 to 23, the *mm* value is in the range of 00 to 59, and the *ss* value is in the range of 00 to 59. Zeros can be omitted, unless you specify 00:00:00.

date: Specifies a date, in the *MM/DD/YYYY* or *YYYY/MM/DD* format. The *YYYY* value is in the range of 2000 to 2035, the *MM* value is in the range of 1 to 12, and the *DD* value is in the range of 1 to 31.

Description

Use **clock datetime** to set the system time and date.

You can leave the *ss* field blank when you specify the time parameters.

Related commands: **clock summer-time one-off**, **clock summer-time repeating**, **clock timezone**, and **display clock**.

Examples

Set the current system time to 14:10:20 08/01/2011.

```
<Sysname> clock datetime 14:10:20 8/1/2011
```

Set the current system time to 00:06:00 01/01/2011.

```
<Sysname> clock datetime 0:6 2011/1/1
```

clock summer-time one-off

Syntax

clock summer-time *zone-name* **one-off** *start-time start-date end-time end-date add-time*

undo clock summer-time

View

System view

Default level

3: Manage level

Parameters

zone-name: Specifies a daylight saving time by its zone name, a case-sensitive string of 1 to 32 characters.

start-time: Start time, in the *hh:mm:ss* format. Zeros can be omitted, unless you specify 00:00:00.

start-date: Start date, in the *MM/DD/YYYY* or *YYYY/MM/DD* format.

end-time: End time, in the *hh:mm:ss* format. Zeros can be omitted, unless you specify 00:00:00.

end-date: End date, in the *MM/DD/YYYY* or *YYYY/MM/DD* format.

add-time: Time added to the standard time of the device, in the *hh:mm:ss* format. Zeros can be omitted, unless you specify 00:00:00.

Description

Use **clock summer-time one-off** to adopt daylight saving time from the *start-time* of the *start-date* to the *end-time* of the *end-date*. Daylight saving time adds the *add-time* to the standard time of the device.

Use **undo clock summer-time** to cancel the configuration of the daylight saving time.

By default, daylight saving time is disabled and the UTC time zone applies.

The interval between *start-time start-date* and *end-time end-date* must be longer than one day and shorter than one year. If the current system time is in the specified daylight saving days, the *add-time* value automatically adds to the system time.

To verify the setting, use the **display clock** command.

The timestamps in system messages are adjusted in reference to the time zone and daylight saving schedule.

Related commands: **clock datetime**, **clock summer-time repeating**, **clock timezone**, and **display clock**.

Examples

Set the system time ahead one hour for the period between 06:00:00 on 08/01/2011 and 06:00:00 on 09/01/2011.

```
<Sysname> system-view
[Sysname] clock summer-time abc1 one-off 6 08/01/2011 6 09/01/2011 1
```

clock summer-time repeating

Syntax

clock summer-time *zone-name* **repeating** *start-time start-date end-time end-date add-time*

undo clock summer-time

View

System view

Default level

3: Manage level

Parameters

zone-name: Name of the daylight saving time, which is a string of 1 to 32 characters.

start-time: Start time, in the *hh:mm:ss* format. Zeros can be omitted, unless you specify 00:00:00.

start-date: Start date, which can be set in the following ways:

- Enter the year, month and date at one time, in the *MM/DD/YYYY* or *YYYY/MM/DD* format.
- Enter the year, month and date one by one, separated by spaces. The year is in the range of 2000 to 2035; the month can be **January**, **February**, **March**, **April**, **May**, **June**, **July**, **August**, **September**, **October**, **November** or **December**; the start week can be the **first**, **second**, **third**, **fourth**, **fifth** or **last** week of the month; the start date is **Sunday**, **Monday**, **Tuesday**, **Wednesday**, **Thursday**, **Friday**, **Saturday**.

end-time: End time, in the *hh:mm:ss* format. Zeros can be omitted, unless you specify 00:00:00.

end-date: End date which can be set in the following ways:

- Enter the year, month and date at one time, in the *MM/DD/YYYY* or *YYYY/MM/DD* format.
- Enter the year, month and date one by one, separated by spaces. The year is in the range of 2000 to 2035; the month can be **January**, **February**, **March**, **April**, **May**, **June**, **July**, **August**, **September**, **October**, **November** or **December**; the end week can be the **first**, **second**, **third**, **fourth**, **fifth** or **last** week of the month; the end date is **Sunday**, **Monday**, **Tuesday**, **Wednesday**, **Thursday**, **Friday**, **Saturday**.

add-time: Time added to the standard time of the device, in the *hh:mm:ss* format. Zeros can be omitted, unless you specify 00:00:00.

Description

Use **clock summer-time repeating** to set a recurring daylight saving schedule.

Use **undo clock summer-time** to cancel the configuration of the daylight saving time.

By default, daylight saving time is disabled and UTC time zone applies.

The interval between *start-time start-date* and *end-time end-date* must be longer than one day and shorter than one year. If the current system time is in the specified daylight saving days, the *add-time* value automatically adds to the system time.

To verify the setting, use the **display clock** command.

The timestamps in system messages are adjusted in reference to the time zone and daylight saving schedule.

Related commands: **clock datetime**, **clock summer-time one-off**, **clock timezone**, and **display clock**.

Examples

Set the system time ahead one hour every year after 2011 (inclusive) for the period from August 1 at 06:00:00 to September 1 at 06:00:00.

```
<Sysname> system-view
[Sysname] clock summer-time abc2 repeating 06:00:00 08/01/2011 06:00:00 09/01/2011
01:00:00
```

clock timezone

Syntax

clock timezone *zone-name* { **add** | **minus** } *zone-offset*

undo clock timezone

View

System view

Default level

3: Manage level

Parameters

zone-name: Specifies a time zone by its name, a case-sensitive string of 1 to 32 characters.

add: Adds a specified offset to UTC time.

minus: Subtracts a specified offset to UTC time.

zone-offset: Specifies an offset to the UTC time, in the *hh:mm:ss* format. Zeros can be omitted, unless you specify 00:00:00.

Description

Use **clock timezone** to set the local time zone.

Use **undo clock timezone** to restore the local time zone to the default UTC time zone.

By default, the local time zone is UTC zone.

To verify the setting, use the **display clock** command.

The timestamps in system messages are adjusted in reference to the time zone and daylight saving schedule.

Related commands: **clock datetime**, **clock summer-time one-off**, **clock summer-time repeating**, and **display clock**.

Examples

Set the local time zone to add five hours to UTC time.

```
<Sysname> system-view
[Sysname] clock timezone z5 add 5
```

copyright-info enable

Syntax

copyright-info enable

undo copyright-info enable

View

System view

Default level

3: Manage level

Parameters

None

Description

Use **copyright-info enable** to enable displaying the copyright statement.

Use **undo copyright-info enable** to disable displaying the copyright statement.

By default, this feature is enabled.

Examples

Enable displaying the copyright statement.

```
<Sysname> system-view

[Sysname] copyright-info enable
```

- When a Telnet user logs in, the following statement appears:

```
*************************************************************************
* Copyright (c) 2010-2013 Hewlett-Packard Development Company, L.P     *
* Without the owner's prior written consent,                          *
* no decompiling or reverse-engineering shall be allowed.             *
*************************************************************************

<Sysname>
```

- When a console user quits user view, the following statement appears:

```
*************************************************************************
* Copyright (c) 2010-2013 Hewlett-Packard Development Company, L.P     *
* Without the owner's prior written consent,                          *
* no decompiling or reverse-engineering shall be allowed.             *
*************************************************************************

User interface aux0 is available.


Please press ENTER.
```

Disable displaying the copyright statement.

```
<Sysname> system-view

[Sysname] undo copyright-info enable
```

- When a Telnet user logs in, the user view prompt appears:

```
<Sysname>
```

- When a console user quits user view, the following message appears:

```
User interface aux0 is available.


Please press ENTER.
```

display brand

Syntax

display brand [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

User view

Default level

1: Monitor level

Parameters

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display brand** to display the brand name of a member switch.

Examples

Display the brand name of the current member switch.

```
<Sysname>display brand
Current BRANDs:
 Slot 1: HP.
 Slot 3: H3C.
New BRANDs:
 Slot 1: HP.
 Slot 3: H3C.
<Sysname>
```

display clock

Syntax

display clock [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

1: Monitor level

Parameters

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display clock** to display the system time and date.

The system time and date are decided by the **clock datetime**, **clock summer-time one-off** (or **clock summer-time repeating**), and **clock timezone** commands. For more information about how the system time and date are decided, see *Fundamentals Configuration Guide*.

Related commands: **clock datetime**, **clock summer-time one-off**, **clock summer-time repeating**, and **clock timezone**.

Examples

Display the current time and date.

```
<Sysname> display clock
09:41:23 UTC Thu 12/15/2010
```

display cpu-usage

Syntax

display cpu-usage [**slot** *slot-number* [**cpu** *cpu-number*]] [**|** { **begin** | **exclude** | **include** } *regular-expression*]

display cpu-usage *entry-number* [*offset*] [**verbose**] [**slot** *slot-number* [**cpu** *cpu-number*]] [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

1: Monitor level

Parameters

entry-number: Number of entries to be displayed, which is in the range of 1 to 60.

offset: Offset between the serial number of the first CPU usage rate record to be displayed and that of the last CPU usage rate record to be displayed. It is in the range of 0 to 59.

For example, the idx of the latest statistics record is 12. If the *offset* is set to 3, the system will display the statistics records from the one with the idx of 9, where idx represents the serial number of the period for the statistics, and its value is in the range of 0 to 60 cyclically. The system collects CPU usage rates periodically, and the system records the average CPU usage rate during this period, and the idx value is added by 1 automatically.

verbose: Displays the average CPU usage statistics for each task in the specified period. If this keyword is not provided, the system displays brief CPU usage statistics.

slot *slot-number*: Displays the CPU usage statistics for an IRF member switches. The *slot-number* argument represents the IRF member ID of the switch. If no member switch is specified, the system displays the CPU usage statistics for all IRF member switches.

cpu *cpu-number*: Displays the CPU usage statistics for the specified CPU. If the *cpu-number* argument is not provided, the system displays the CPU usage statistics for all CPUs of the specified IRF member switch.

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display cpu-usage** to display CPU usage statistics.

The system regularly (typically at 60-second intervals) collects CPU usage statistics and saves the statistical results in the history record area.

The **display cpu-usage** *entry-number* command displays *entry-number* latest records, starting from the latest record. The **display cpu-usage** *entry-number offset* command displays *entry-number* latest records, starting from the last (*offset*+1)th record.

Examples

Display the current CPU usage statistics.
```
<Sysname> display cpu-usage
Slot 1 CPU usage:
       6% in last 5 seconds
       6% in last 1 minute
       6% in last 5 minutes
```

Display the last fifth and sixth CPU usage statistics records.
```
<Sysname> display cpu-usage 2 4
===== CPU usage info (no:  0  idx: 49) =====
CPU Usage Stat. Cycle: 60 (Second)
CPU Usage          : 7%
CPU Usage Stat. Time : 2000-04-26  16:58:33
CPU Usage Stat. Tick : 0x113(CPU Tick High) 0xc2f13852(CPU Tick Low)
Actual Stat. Cycle   : 0x0(CPU Tick High) 0xee6f5162(CPU Tick Low)

===== CPU usage info (no:  1  idx: 48) =====
CPU Usage Stat. Cycle: 60 (Second)
CPU Usage          : 7%
CPU Usage Stat. Time : 2000-04-26  16:57:33
CPU Usage Stat. Tick : 0x112(CPU Tick High) 0xd434bc80(CPU Tick Low)
Actual Stat. Cycle   : 0x0(CPU Tick High) 0xee71f662(CPU Tick Low)
```

Table 24 Command output

Field	Description
Slot 1	CPU usage statistics for the device (whose member ID is 1).
1% in last 5 seconds	After a boot, the system calculates and records the average CPU usage rate every five seconds. This field displays the average CPU usage rate in the last five seconds.
1% in last 1 minute	After a boot, the system calculates and records the average CPU usage rate every one minute. This field displays the average CPU usage rate in the last minute.
1% in last 5 minutes	After a boot, the system calculates and records the average CPU usage rate every five minutes. This field displays the average CPU usage rate in the last five minutes.
CPU usage info (no: idx:)	CPU usage rate records (no: The (no+1)th record is displayed. no numbers from 0, a smaller number equals a newer record. idx: index of the current record in the history record table). If only the information of the current record is displayed, no and idx are not displayed.
CPU Usage Stat. Cycle	CPU usage rate measurement interval, in seconds. For example, if the value is 41, it indicates that the average CPU usage rate during the last 41 seconds is calculated. The value range of this field is 1 to 60.
CPU Usage	Average CPU usage rate in a measurement interval, in percentage.

Field	Description
CPU Usage Stat. Time	CPU usage rate statistics time in seconds, that is, the system time when the command is executed.
CPU Usage Stat. Tick	System runtime in ticks, represented by a 64-bit hexadecimal. CPU Tick High represents the most significant 32 bits and the CPU Tick Low the least significant 32 bits.
Actual Stat. Cycle	Actual CPU usage rate measurement interval in ticks, represented by a 64-bit hexadecimal. CPU Tick High represents the most significant 32 bits and the CPU Tick Low the least significant 32 bits. Owing to the precision of less than one second, the actual measurement periods of different CPU usage rate records might differ slightly.

display cpu-usage history

Syntax

display cpu-usage history [**task** *task-id*] [**slot** *slot-number* [**cpu** *cpu-number*]] [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

1: Monitor level

Parameters

task *task-id*: Displays the historical CPU usage statistics for the specified task, where *task-id* represents the task number. If no task is specified, the system displays the historical CPU usage statistics for the entire system (the CPU usage statistics for the entire system is the sum of CPU usage statistics for all tasks).

slot *slot-number*: Displays the historical CPU usage statistics for an IRF member switch. The *slot-number* argument represents the IRF member ID of the switch. If no member switch is specified, the system displays the historical CPU usage statistics for the master.

cpu *cpu-number*: Displays the historical CPU usage statistics for the specified CPU. If the *cpu-number* argument is not provided, the system displays the historical CPU usage statistics for the main CPU.

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display cpu-usage history** to display historical CPU usage statistics in a chart.

The system regularly collects CPU usage statistics and saves the statistics in the history record area. The **display cpu-usage history** command displays the CPU usage statistics for the last 60 minutes in axes, where:

- The vertical axis represents the CPU usage. If a statistic is not a multiple of the usage step, it is rounded up or down to the closest multiple of the usage step, whichever is closer. For example, if the CPU usage step is 5%, the statistic 53% is rounded up to 55%, and the statistic 52% is rounded down to 50%.
- The horizontal axis represents the time.
- Consecutive pound signs (#) indicate the CPU usage at a specific time. The value on the vertical axis for the topmost # sign at a specific time represents the CPU usage at that time.

Examples

Display historical CPU usage statistics.

```
<Sysname> display cpu-usage history
100%|
 95%|
 90%|
 85%|
 80%|
 75%|
 70%|
 65%|
 60%|
 55%|
 50%|
 45%|
 40%|
 35%|
 30%|
 25%|
 20%|
 15%|             #
 10%|            ###  #
  5%|          ########
     ------------------------------------------------------------
             10       20       30       40       50       60  (minutes)
                   cpu-usage last 60 minutes(SYSTEM)
```

The output shows the historical CPU usage statistics (with the task name **SYSTEM**) in the last 60 minutes:

- 5%: 12 minutes ago
- 10%: 13 minutes ago
- 15%: 14 minutes ago
- 10%: 15 minutes ago
- 5%: 16 and 17 minutes ago
- 10%: 18 minutes ago
- 5%: 19 minutes ago
- 2% or lower than 2%: other time

Display the historical CPU usage statistics of task 6.

```
<Sysname> display cpu-usage history task 6
100%|
```

```
 95%|
 90%|
 85%|
 80%|
 75%|
 70%|
 65%|
 60%|
 55%|
 50%|
 45%|
 40%|
 35%|
 30%|
 25%|
 20%|
 15%|
 10%|
  5%|                    #
     -----------------------------------------------------------
          10        20        30        40        50        60  (minutes)
                  cpu-usage last 60 minutes(T03M)
```
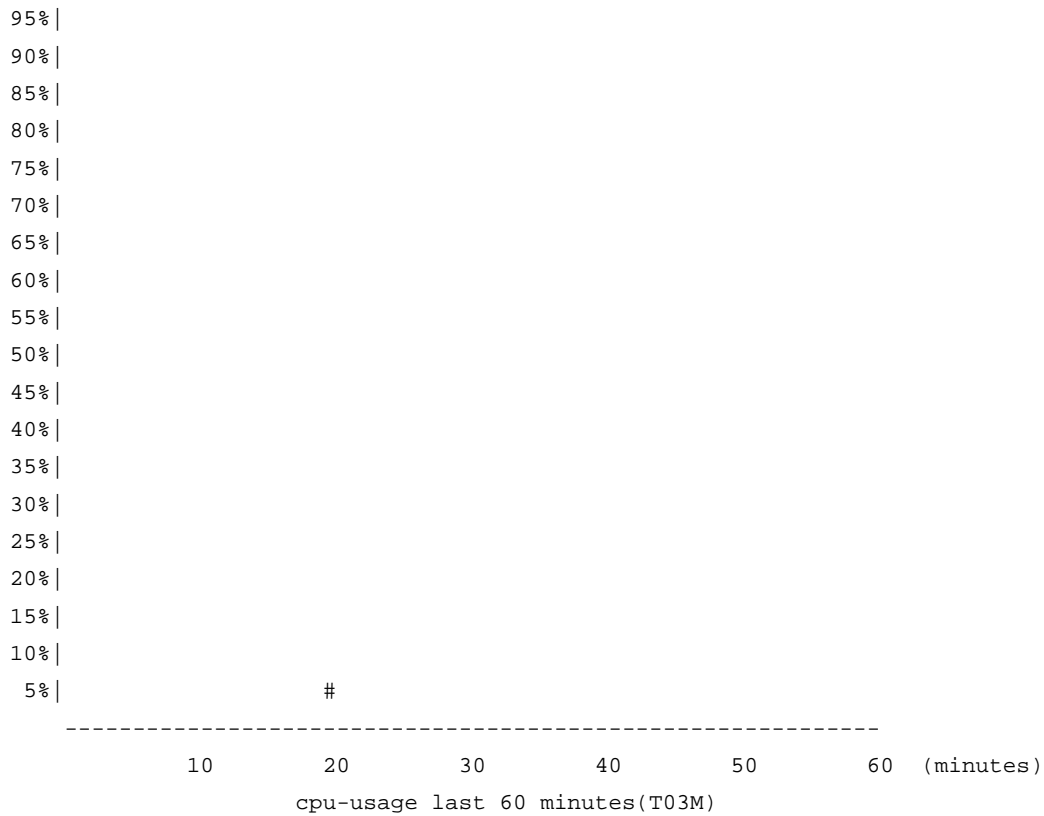
The output shows the historical CPU usage statistics of task 6 (with the task name **T03M**) in the last 60 minutes:

- 5%: 20 minutes ago
- 2% or lower than 2%: other time

display device

Syntax

display device [[**slot** *slot-number* [**subslot** *subslot-number*]] | **verbose**] [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

2: System level

Parameters

slot *slot-number*: Displays information about an IRF member switch. The *slot-number* argument represents the IRF member ID of the switch.

subslot *subslot-number*: Displays information about the specified host or subcard (interface card). The *subslot-number* represents the subslot of the host or subcard. If the switch does not support the subcard or the subcard is not installed, 0 is displayed.

verbose: Displays detailed information.

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display device** to display device information.

Examples

Display device information.

```
<Sysname>display device
Slot 1
SubSNo PortNum PCBVer FPGAVer CPLDVer BootRomVer AddrLM Type      State
0      28      REV.C  NULL    002     CC1        IVL    MAIN      Normal
1      2       REV.A  NULL    NULL    NULL       IVL    2*10GE    Normal
```

Table 25 Command output

Field	Description
Slot 1	Information about member device 1.
SubSNo	Number of the slot in which the host or subcard resides.
PortNum	Maximum number of ports that the host or subcard supports.
PCBVer	PCB version of the host or subcard.
FPGAVer	FPGA version of the host or subcard.
CPLDVer	CPLD version of the host or subcard.
BootRomVer	Boot ROM version of the host or subcard.
AddrLM	Address learning mode: • Independent VLAN learning (IVL). • Shared VLAN learning (SVL).
Type	Type of the host or subcard: • **Host**—MAIN is displayed for this type. • **Subcard**—The specific model is displayed for this type.
State	State of the host or subcard: • Normal. • Absent. • Fault.

display device manuinfo

Syntax

display device manuinfo [**slot** *slot-number* [**subslot** *subslot-number*]] [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

3: Manage level

Parameters

slot *slot-number*: Displays the electronic label data for an IRF member switch. The *slot-number* argument represents the IRF member ID of the switch. If no member switch is specified, the system displays the electronic label data for all IRF member switches.

subslot *subslot-number*: Displays the electronic label data for the specified interface card. The *subslot-number* represents the number of the slot where the interface card resides.

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display device manuinfo** to display electronic label data.

An electronic label is a profile of a device and contains the permanent configuration including the serial number, manufacturing date, MAC address, and vendor name. The data is written to the storage component during debugging or testing.

Examples

Display electronic label data.

```
<Sysname> display device manuinfo
Slot 1:
DEVICE_NAME          : HP 5500-24G EI Switch with 2 Interface Slots JD377A
DEVICE_SERIAL_NUMBER : 210235A252H09A000878
MAC_ADDRESS          : 0023-8980-549A
MANUFACTURING_DATE   : 2009-10-21
VENDOR_NAME          : HP
 Subslot 1:
The device does not support manufacture information.
```

Table 26 Command output

Field	Description
Slot	Device ID
Subslot	Number of the slot where the interface device resides on the IRF member switch
DEVICE_NAME	Device name
DEVICE_SERIAL_NUMBER	Device serial number
MAC_ADDRESS	MAC address of the device

Field	Description
MANUFACTURING_DATE	Manufacturing date of the device
VENDOR_NAME	Vendor name

display diagnostic-information

Syntax

display diagnostic-information [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

1: Monitor level

Parameters

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display diagnostic-information** to display or save operating statistics for multiple feature modules in the system.

For diagnosis or troubleshooting, you can use separate **display** commands to collect running status data module by module, or use the **display diagnostic-information** command to bulk collect running data for multiple modules.

Examples

Save each module's running status data.

```
<Sysname> display diagnostic-information
Save or display diagnostic information (Y=save, N=display)?[Y/N]y
Please input the file name(*.diag)[flash:/default.diag]:aa.diag
Diagnostic information is outputting to flash:/aa.diag.
Please wait...
Save succeeded.
```

To view the content of file **aa.diag**, execute the **more aa.diag** command in user view, in combination of the **Page Up** and **Page Down** keys.

Display the operating statistics for multiple feature modules in the system.

```
<Sysname> display diagnostic-information
Save or display diagnostic information (Y=save, N=display)? [Y/N]:n
===============================================
  ==============display clock==============
===============================================
```

```
08:54:16 UTC Fri 11/15/2010

===================================================
  ==============display version==============
===================================================
```

…

display environment

Syntax

display environment [**slot** *slot-number*] [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

1: Monitor level

Parameters

slot *slot-number*: Displays temperature information for an IRF member switch. The *slot-number* argument represents the IRF member ID of the switch.

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display environment** to display temperature information, including the current temperature and thresholds.

If no member switch is specified, this command display temperature information for all member switches.

Related commands: **temperature-limit**.

Examples

Display temperature information.

```
<Sysname> display environment
Slot 1
System temperature information (degree centigrade):
-------------------------------------------------------------------------
Sensor     Temperature  LowerLimit  WarningLimit  AlarmLimit ShutdownLimit
hotspot 1  28           -5          55            NA         NA
```

Table 27 Command output

Field	Description
Slot	Device ID.
sensor	Temperature sensor,**Hotspot**—A hotspot sensor.

Field	Description
Temperature	Current temperature.
LowerLimit	Lower temperature threshold.
WarningLimit	Warning temperature threshold.
AlarmLimit	Alarming temperature threshold.
ShutdownLimit	Shutdown temperature threshold. When the sensor temperature reaches this limit, the system shuts down automatically.

display fan

Syntax

display fan [**slot** *slot-number* [*fan-id*]] [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

1: Monitor level

Parameters

slot *slot-number*: Displays the operating state of fan trays for an IRF member switch. The *slot-number* argument represents the IRF member ID of the switch. If no member switch is specified, the system displays the operating state of fan trays for all IRF member switches.

fan-id: Displays the operating state of the specified fan tray, where *fan-id* represents the fan tray number.

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display fan** to display the operating state of fan trays.

Examples

Display the operating state of all fan trays.
```
<Sysname> display fan
Slot 1
     FAN    1
     State    : Normal
```

display job

Syntax

display job [*job-name*] [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

1: Monitor level

Parameters

job-name: Specifies a job name, a string of 1 to 32 characters.

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display job** to display the jobs configured by using the **job** command.

If no job is specified, this command displays information about all scheduled jobs.

Related commands: **job**, **time**, and **view**.

Examples

Display detailed information about the scheduled job **saveconfig**.

```
<Sysname> display job saveconfig
Job name: saveconfig
  Specified view: monitor
  Time 1: Execute command save 1.cfg after 40 minutes
```

The output shows that the current configuration will be automatically saved to the configuration file **1.cfg** in 40 minutes.

Table 28 Command output

Field	Description
Job name	Name of the scheduled job
Specified view	View for the commands to be executed
Time *timeID*	Execution time of each command in the job
Execute command	Command string

display memory

Syntax

display memory [**slot** *slot-number* [**cpu** *cpu-number*]] [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

1: Monitor level

Parameters

slot *slot-number*: Displays the memory usage statistics for an IRF member switch. The *slot-number* argument represents the IRF member ID of the switch.

cpu *cpu-number*: Displays the memory usage statistics for a CPU. The *cpu-number* argument represents the ID of the CPU.

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display memory** to display memory usage statistics.

If no IRF member switch is specified, the system displays the memory usage statistics for the master. If no CPU is specified, the system displays memory usage statistics for the main CPU.

Examples

\# Display memory usage statistics.

```
<Sysname> display memory
System Total Memory(bytes): 70901280
Total Used Memory(bytes): 45706956
Used Rate: 64%
```

Table 29 Command output

Field	Description
System Total Memory(bytes)	Total size of the system memory (in bytes)
Total Used Memory(bytes)	Size of the memory used (in bytes)
Used Rate	Percentage of the memory used to the total memory

display power

Syntax

display power [**slot** *slot-number* [*power-id*]] [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

1: Monitor level

Parameters

slot *slot-number*: Displays information about the power supplies on an IRF member switch. The *slot-number* argument represents the IRF member ID of the switch.

power-id: Displays information about a power supply. The *power-id* argument represents the power supply ID.

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display power** to display power supply information.

Examples

Display power supply information.

```
<Sysname> display power
Slot 1
     Power    1
     State    : Normal
     Type     : AC
```

Table 30 Command output

Field	Description
Slot 1	Power supply information of member device 1.
Power	Power supply ID.
State	Power supply state: • Normal. • Absent. • Fault.
Type	Power supply type: • DC. • AC.

display reboot-type

Syntax

display reboot-type [**slot** *slot-number*] [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

2: System level

Parameters

slot *slot-number*: Displays the mode of the last reboot of an IRF member switch. The *slot-number* argument represents the IRF member ID of the switch.

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display reboot-type** to display the mode of the last reboot.

If no IRF member switch is specified, the system displays the mode of the last reboot of the master.

Examples

Display the mode of the last reboot of IRF member switch 1.

```
<Sysname> display reboot-type slot 1
  The rebooting type this time is: Cold
```

The output shows that the mode of the last reboot of member switch 1 is Cold boot (cold boot will restart a device by powering it on). (The display of Warm represents a warm boot, which means to restart a device by using the commands like **reboot**).

display rps

Syntax

display rps [**slot** *slot-number* [*rps-id*]] [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

1: Monitor level

Parameters

slot *slot-number*: Displays the RPS status of an IRF member switch. The *slot-number* argument represents the IRF member ID of the switch. If no member switch is specified, this command displays the RPS status for all IRF member switches.

rps-id: Displays the status of the specified RPS, where *rps-id* represents the RPS number.

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display rps** to display RPS status information.

This command is available only for the devices that support RPS.

Examples

Display RPS status information.

```
<Sysname> display rps
Slot 1
      Power    2
      State    : Absent
```

display schedule job

Syntax

display schedule job [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

1: Monitor level

Parameters

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display schedule job** to display the job configured by using the **schedule job** command.

Related commands: **schedule job**.

Examples

Display the job configured by using the **schedule job** command.

```
<Sysname> display schedule job
Specified command: execute 1.bat
Specified view: system view
Executed time: at 12:00 10/31/2010 (in 0 hours and 16 minutes)
```

If you change the system time within 16 minutes after you execute the **schedule job** command, the scheduled task becomes invalid. Then, if you execute the **display schedule job** command again, the system displays nothing.

Table 31 Command output

Field	Description
Specified command	Command to be executed

Field	Description
Specified view	View for the command to be executed
Executed time	Execution time of the command and the difference between the current system time and scheduled time

display schedule reboot

Syntax

display schedule reboot [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

3: Manage level

Parameters

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display schedule reboot** to display the reboot schedule.

Related commands: **schedule reboot at** and **schedule reboot delay**.

Examples

Display the reboot schedule.

```
<Sysname> display schedule reboot
System will reboot at 16:00:00 03/10/2010 (in 2 hours and 5 minutes).
```

The output shows that the system will reboot at 16:00:00 on March 10, 2010 (in two hours and five minutes).

display system-failure

Syntax

display system-failure [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

3: Manage level

Parameters

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display system-failure** to display the exception handling method. In an IRF fabric, this command displays the exception handling method for all IRF member switches.

Related commands: **system-failure**.

Examples

\# Display the exception handling method.
```
<Sysname> display system-failure
 System failure handling method: reboot
```

display transceiver

Syntax

display transceiver interface [*interface-type interface-number*] [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

2: System level

Parameters

interface [*interface-type interface-number*]: Displays the key parameters of the transceiver module in the specified interface. The *interface-type interface-number* argument specifies an interface by its type and number. If no interface is specified, the command displays the key parameters of all transceiver modules.

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display transceiver** to display key parameters of transceiver modules.

Examples

\# Display the key parameters of the transceiver module in interface GigabitEthernet 1/0/25.
```
<Sysname> display transceiver interface gigabitethernet 1/0/25
```

```
GigabitEthernet1/0/25 transceiver information:
  Transceiver Type          : 1000_BASE_SX_SFP
  Connector Type            : LC
  Wavelength(nm)            : 850
  Transfer Distance(m)      : 550(50um),270(62.5um)
  Digital Diagnostic Monitoring : YES
  Vendor Name               : HP
  Ordering Name             : SFP-GE-SX-MM850
```

Table 32 Command output

Field	Description
transceiver information	Transceiver module information.
Transceiver Type	Transceiver module type.
Connector Type	Connector type options: • **SC**—Fiber connector developed by NTT. • **LC**—1.25 mm/RJ-45 fiber connector developed by Lucent. • RJ-45. • CX 4.
Wavelength(nm)	• **Fiber transceiver**—Central wavelength (in nm) of the transmit laser. If the transceiver supports multiple wavelengths, every two wavelength values are separated by a comma. • **Copper transceiver**—Displayed as N/A.
Transfer Distance(xx)	Transfer distance, with xx representing km for single-mode transceiver modules and m for other transceiver modules. If the transceiver module supports multiple transfer media, every two transfer distance values are separated by a comma. The corresponding transfer medium is included in the bracket following the transfer distance value. The following are the supported transfer media: • **9 um**—9/125 um single-mode fiber. • **50 um**—50/125 um multi-mode fiber. • **62.5 um**—62.5/125 um multi-mode fiber. • **TP**—Twisted pair. • **CX4**—CX4 cable.
Digital Diagnostic Monitoring	Support for the digital diagnosis function: • **YES**—Supported. • **NO**—Not supported.
Vendor Name	Vendor name.
Ordering Name	Product code.

display transceiver alarm

Syntax

display transceiver alarm interface [*interface-type interface-number*] [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

2: System level

Parameters

interface [*interface-type interface-number*]: Displays the alarms present on the transceiver module in the specified interface. The *interface-type interface-number* argument specifies an interface by its type and number. If no interface is specified, the command displays present alarm information for all transceiver modules.

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display transceiver alarm** to display alarms present on transceiver modules.

If no error occurs, **None** is displayed. Table 33 describes the transceiver module alarms that might occur. Support for the transceiver modules depends on the device model.

Table 33 Common transceiver module alarms

Field	Remarks
SFP/SFP+	
RX loss of signal	Incoming (RX) signal is lost.
RX power high	Incoming (RX) power level is high.
RX power low	Incoming (RX) power level is low.
TX fault	Transmit (TX) fault
TX bias high	TX bias current is high.
TX bias low	TX bias current is low.
TX power high	TX power is high.
TX power low	TX power is low.
Temp high	Temperature is high.
Temp low	Temperature is low.
Voltage high	Voltage is high.
Voltage low	Voltage is low.
Transceiver info I/O error	Transceiver information read and write error.
Transceiver info checksum error	Transceiver information checksum error.
Transceiver type and port configuration mismatch	Transceiver type does not match port configuration.

Field	Remarks
Transceiver type not supported by port hardware	Transceiver type is not supported on the port.
XFP	
RX loss of signal	Incoming (RX) signal is lost.
RX not ready	RX is not ready.
RX CDR loss of lock	RX clock cannot be recovered.
RX power high	RX power is high.
RX power low	RX power is low.
TX not ready	TX is not ready.
TX fault	TX fault.
TX CDR loss of lock	TX clock cannot be recovered.
TX bias high	TX bias current is high.
TX bias low	TX bias current is low.
TX power high	TX power is high.
TX power low	TX power is low.
Module not ready	Module is not ready.
APD supply fault	APD (Avalanche Photo Diode) supply fault.
TEC fault	TEC (Thermoelectric Cooler) fault.
Wavelength unlocked	Wavelength of optical signal exceeds the manufacturer's tolerance.
Temp high	Temperature is high.
Temp low	Temperature is low.
Voltage high	Voltage is high.
Voltage low	Voltage is low.
Transceiver info I/O error	Transceiver information read and write error.
Transceiver info checksum error	Transceiver information checksum error.
Transceiver type and port configuration mismatch	Transceiver type does not match port configuration.
Transceiver type not supported by port hardware	Transceiver type is not supported on the port.

Examples

Display the alarms present on the transceiver module in interface GigabitEthernet 1/0/25.

```
<Sysname> display transceiver alarm interface gigabitethernet 1/0/25
GigabitEthernet1/0/25 transceiver current alarm information:
  RX loss of signal
  RX power low
```

Table 34 Command output

Field	Description
transceiver current alarm information	Alarms present on the transceiver module.
RX loss of signal	Incoming (RX) signal is lost.
RX power low	Incoming (RX) power level is low.

display transceiver diagnosis

Syntax

display transceiver diagnosis interface [*interface-type interface-number*] [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

2: System level

Parameters

interface [*interface-type interface-number*]: Displays the present measured values of the digital diagnosis parameters for the transceiver module in the specified interface. The *interface-type interface-number* argument specifies an interface by its type and number. If no interface is specified, the command displays the present measured values of the digital diagnosis parameters for all transceiver modules.

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display transceiver diagnosis** to display the present measured values of the digital diagnosis parameters for transceiver modules.

Examples

Display the present measured values of the digital diagnosis parameters for the transceiver module in GigabitEthernet 1/0/25.

```
<Sysname> display transceiver diagnosis interface gigabitethernet 1/0/25
GigabitEthernet1/0/25 transceiver diagnostic information:
  Current diagnostic parameters:
    Temp(°C)  Voltage(V)  Bias(mA)  RX power(dBm)  TX power(dBm)
    36        3.31        6.13      -35.64         -5.19
```

Table 35 Command output

Field	Description
transceiver diagnostic information	Digital diagnosis parameters of the transceiver module in the interface.
Current diagnostic parameters	Current diagnostic parameters.
Temp.(°C)	Digital diagnosis parameter-temperature, in °C, with the precision to 1°C.
Voltage(V)	Digital diagnosis parameter-voltage, in V, with the precision to 0.01 V.
Bias(mA)	Digital diagnosis parameter-bias current, in mA, with the precision to 0.01 mA.
RX power(dBm)	Digital diagnosis parameter-RX power, in dBm, with the precision to 0.01 dBm.
TX power(dBm)	Digital diagnosis parameter-TX power, in dBm, with the precision to 0.01 dBm.

display transceiver manuinfo

Syntax

display transceiver manuinfo interface [*interface-type interface-number*] [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

2: System level

Parameters

interface [*interface-type interface-number*]: Displays the electronic label data for the transceiver module in the specified interface. The *interface-type interface-number* argument specifies an interface by its type and number. If no interface is specified, the command displays the electronic label data for all transceiver modules.

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display transceiver manuinfo** to display the electronic label data for transceiver modules.

Examples

Display the electronic label data for the transceiver module in GigabitEthernet 1/0/25.

```
<Sysname> display transceiver manuinfo interface gigabitethernet 1/0/25
```

```
GigabitEthernet1/0/25 transceiver manufacture information:
  Manu. Serial Number  : 213410A0000054000251
  Manufacturing Date   : 2011-03-01
  Vendor Name          : HP
```

Table 36 Command output

Field	Description
Manu. Serial Number	Serial number generated during debugging and testing of the customized transceivers.
Manufacturing Date	Debugging and testing date. The date takes the value of the system clock of the computer that performs debugging and testing.

display version

Syntax

display version [**|** { **begin** | **exclude** | **include** } *regular-expression*]

View

Any view

Default level

1: Monitor level

Parameters

|: Filters command output by specifying a regular expression. For more information about regular expressions, see *Fundamentals Configuration Guide*.

begin: Displays the first line that matches the specified regular expression and all lines that follow.

exclude: Displays all lines that do not match the specified regular expression.

include: Displays all lines that match the specified regular expression.

regular-expression: Specifies a regular expression, a case-sensitive string of 1 to 256 characters.

Description

Use **display version** to display system version information.

Examples

Display system version information.
```
<Sysname> display version
HP Comware Platform Software
Comware Software, Version 5.20, Release 0000
Copyright (c) 2010-2013 Hewlett-Packard Development Company, L.P
HP 5500-24G SI Switch with 2 Interface Slots uptime is 0 week, 0 day, 5 hours, 39 minutes

HP 5500-24G SI Switch with 2 Interface Slots with 1 Processor
128M    bytes SDRAM
16384K  bytes Flash Memory

Hardware Version is REV.A
```

```
CPLD Version is 003
Bootrom Version is 610
[SubSlot 0] 48GE+4SFP+POE Hardware Version is REV.A
```

Table 37 Command output

Field	Description
HP Comware Platform Software	Software platform of the switch
Comware Software, Version 5.20, Release 0000	Software version, which comprises software platform name (Comware), platform version (Version 5.20), and product release version (Release 0000)
Copyright (c) 2010-2013 Hewlett-Packard Development Company, L.P	Copyright statement of the switch
HP 5500-24G SI Switch with 2 Interface Slots uptime is 0 week, 0 day, 5 hours, 39 minutes	Time duration for which the switch has been running since the last reboot
SDRAM	Memory size of the switch
Flash Memory	Flash size of the switch
Hardware Version is	Hardware version
CPLD Version	Version of the complex programmable logical device (CPLD)
Bootrom Version	Boot ROM version of the switch
[SubSlot 0]	Number of ports and hardware version

header

Syntax

header { **incoming** | **legal** | **login | motd | shell** } *text*

undo header { **incoming** | **legal** | **login** | **motd** | **shell** }

View

System view

Default level

2: System level

Parameters

incoming: Configures the banner displayed before a Modem dial-up user accesses user view. If authentication is required, the incoming banner appears after the authentication is passed.

legal: Configures the banner displayed before a user inputs the username and password to access the CLI.

login: Configures the banner displayed before password or scheme authentication is performed for a login user.

motd: Configures the greeting banner displayed before the legal banner appears.

shell: Configures the banner displayed before a non-modem dial-in user accesses user view.

text: Banner message, which can be input in two formats. For more information, see *Fundamentals Configuration Guide*.

Description

Use **header** to create a banner.

Use **undo header** to clear a banner.

Banners are greeting or alert messages that the system displays during the login process of a user.

Examples

\# Configure banners.

```
<Sysname> system-view
[Sysname] header incoming %
Please input banner content, and quit with the character '%'.
Welcome to incoming(header incoming)%
[Sysname] header legal %
Please input banner content, and quit with the character '%'.
Welcome to legal (header legal)%
[Sysname] header login %
Please input banner content, and quit with the character '%'.
Welcome to login(header login)%
[Sysname] header motd %
Please input banner content, and quit with the character '%'.
Welcome to motd(header motd)%
[Sysname] header shell %
Please input banner content, and quit with the character '%'.
Welcome to shell(header shell)%
```

In this example, the percentage sign (%) is the starting and ending characters of text. Entering % after the displayed test quits the **header** command. As the starting and ending characters, % is not part of the banners.

\# Verify the configuration by using Telnet. (The login authentication is not configured.)

```
******************************************************************************
* Copyright (c) 2010-2013 Hewlett-Packard Development Company, L.P           *
* Without the owner's prior written consent,                                 *
* no decompiling or reverse-engineering shall be allowed.                    *
******************************************************************************

Welcome to legal (header legal)
 Press Y or ENTER to continue, N to exit.

Welcome to motd(header motd)

Welcome to shell(header shell)
<Sysname>
```

\# Verify the configuration by using Telnet. (Password authentication is configured.)

```
******************************************************************************
* Copyright (c) 2010-2013 Hewlett-Packard Development Company, L.P           *
* Without the owner's prior written consent,                                 *
* no decompiling or reverse-engineering shall be allowed.                    *
******************************************************************************
```

```
Welcome to legal (header legal)
 Press Y or ENTER to continue, N to exit.

Welcome to motd(header motd)

Welcome to login(header login)

Login authentication


Password:

Welcome to shell(header shell)
<Sysname>
```

job

Syntax

job *job-name*

undo job *job-name*

View

System view

Default level

3: Manage level

Parameters

job-name: Specifies the name of the scheduled job, a string of 1 to 32 characters.

Description

Use **job** to schedule a job or enter job view.

Use **undo job** to delete a scheduled job.

By default, no scheduled job is created.

You add commands to execute in a job in job view.

You can use the **job** command to schedule multiple jobs.

Related commands: **time** and **view**.

Examples

Create a job **saveconfiguration** or enter its view.

```
<Sysname> system-view
[Sysname] job saveconfiguration
[Sysname-job-saveconfiguration]
```

password-recovery enable

Syntax

password-recovery enable

undo password-recovery enable

View

System view

Default level

3: Manage level

Description

Use **password-recovery enable** to enable password recovery capability.

Use **undo password-recovery enable** to disable password recovery capability.

By default, password recovery capability is enabled.

To enhance system security, disable password recovery capability.

Examples

Disable password recovery capability.

```
<Sysname> system-view
[Sysname] undo password-recovery enable
```

reboot

Syntax

reboot [**slot** *slot-number*]

View

User view

Default level

3: Manage level

Parameters

slot *slot-number*: Specifies a switch. In an IRF fabric, if you do not specify this option, this command reboots all IRF member switches.

Description

> △ CAUTION:
> - Device reboot can interrupt ongoing services.
> - If the main system software image file has been corrupted or does not exist, the **reboot** command cannot reboot the switch. You must re-specify a main system software image file, or power off the switch and then power it on so the system can reboot with the backup system software image file.

Use **reboot** to reboot a switch or all IRF member switches.

You can use the **reboot** [**slot** *slot-number*] command on the master to reboot the master device or a subordinate device.

In an IRF fabric, if no member switch is specified, this command reboots all IRF member switches.

For data security, if you are performing file operations at the reboot time, the system does not reboot.

Examples

Reboot the device (The command output is omitted here).

```
<Sysname> reboot
```

reset unused porttag

Syntax

reset unused porttag

View

User view

Default level

1: Monitor level

Parameters

None

Description

Use **reset unused porttag** to clear unused 16-bit interface indexes.

A confirmation is required when you execute this command. The command will not run if you fail to make a confirmation within 30 seconds or enter **N** to cancel the operation.

Examples

Clear unused 16-bit interface indexes.

```
<Sysname> reset unused porttag
Current operation will delete all unused port tag(s). Continue? [Y/N]:y
<Sysname>
```

schedule job

Syntax

schedule job { **at** *time1* [*date*] | **delay** *time2* } **view** *view-name command*

undo schedule job

View

User view

Default level

3: Manage level

Parameters

at *time1* [*date*]: Specifies the execution time of a specified command.

- *time1*: Execution time of the command, in the *hh:mm* format. The *hh* value is in the range of 0 to 23, and the *mm* value is in the range of 0 to 59.

- *date*: Execution date of the command, in the *MM/DD/YYYY* or *YYYY/MM/DD* format. The *YYYY* value is in the range of 2000 to 2035, the *MM* value is in the range of 1 to 12, and the *DD* value is in the range of 1 to 31.

delay *time2*: Specifies the execution waiting time of a specified command. *time2 represents the waiting time,* which can be in the following format:

- *hh*:*mm* format—The *hh* value is in the range of 0 to 720, and the *mm* value is in the range of 0 to 59. When the *hh* value is 720, the *mm* value cannot be more than 0.
- *mm* format—It is in the range of 0 to 432000 minutes, with 0 indicating that the command is executed immediately.

view *view*: Specifies the view in which the command is executed. The *view* argument represents the view name, and it takes either of the following values at present:

- **shell**—Represents user view.
- **system**—Represents system view.

command: Command to be executed.

Description

Use **schedule job** to schedule a job.

Use **undo schedule job** to remove the job.

You can schedule a job to automatically run a command or a set of commands without administrative interference. The commands in a job are polled every minute. When the scheduled time for a command is reached, the job automatically executes the command. If a confirmation is required while the command is running, the system automatically enters **Y** or **Yes**. If characters are required, the system automatically enters a default character string or an empty character string when no default character string is available.

Follow these guidelines when you schedule a job in the non-modular approach:

- You can schedule only one job and run only one command in this approach. If you perform the **schedule job** command multiple times, the last configuration takes effect.
- To have the command successfully executed, check that the specified view and command are valid. The system does not verify their validity.
- If you specify both the *time1* and *date* arguments, the execution time or date must be later than the current system time or date.
- If you specify the *time1* argument, but not the *date* argument:
  - When *time1* is earlier than the current system time, the command runs at *time1* the next day.
  - When *time1* is later than the current system time, the command runs at *time1* of the current day.
- The interval between the scheduled time and the current system time cannot exceed 720 hours, or 30 days.
- Changing any clock setting can cancel the job set by using the **schedule job** command.
- After job execution, the configuration interface, view, and user status that you have before job execution restore even if the job has run a command that changes the user interface (for example, **telnet**, **ftp**, and **ssh2**), the view (for example, **system-view** and **quit**), or the user status (for example, **super)**.

Examples

Schedule a job to execute the batch file **1.bat** in system view in 60 minutes (assuming that the current time is 11:43).

```
<Sysname> schedule job delay 60 view system execute 1.bat
Info: Command execute 1.bat in system view will be executed at 12:43 10/31/2007 (in 1 hours
and 0 minutes).
```

Schedule a job to execute the batch file **1.bat** in system view at 12:00 (assuming that the current time is 11:43).

```
<Sysname> schedule job at 12:00 view system execute 1.bat
Info: Command execute 1.bat in system view will be executed at 12:00 10/31/2007 (in 0 hours
and 16 minutes).
```

schedule reboot at

Syntax

schedule reboot at *hh:mm* [*date*]

undo schedule reboot

View

User view

Default level

3: Manage level

Parameters

hh:mm: Specifies a reboot time, in the *hh:mm* format. The *hh* value is in the range of 0 to 23, and the *mm* value is in the range of 0 to 59.

date: Specifies a reboot date, in the *MM/DD/YYYY* or *YYYY/MM/DD* format. The *YYYY* value is in the range of 2000 to 2035, the *MM* value is in the range of 1 to 12, and the *DD* value is in the range of 1 to 31.

Description

△ CAUTION:
- Device reboot can interrupt network services.
- Changing any clock setting can cancel the reboot schedule.

Use **schedule reboot at** to schedule a reboot to occur at a specific time and date.

Use **undo schedule reboot** to disable the scheduled reboot function.

By default, the scheduled reboot function is disabled.

The interval between the reboot date and the current date cannot exceed 30 x 24 hours, or 30 days.

When no reboot date is specified:
- If the reboot time is later than the current time, a reboot occurs at the reboot time of the current day.
- If the reboot time is earlier than the current time, a reboot occurs at the reboot time the next day.

The switch supports only one device reboot schedule. If you configure the **schedule reboot at** command multiple times, the last configuration takes effect. The **schedule reboot at** command and the **schedule reboot delay** command overwrite each other, and whichever is configured last takes effect.

The alert "REBOOT IN ONE MINUTE" appears one minute before the reboot time.

For data security, if you are performing file operations at the reboot time, the system does not reboot.

Related commands: **schedule reboot delay**.

Examples

\# Configure the switch to reboot at 12:00 AM. This example assumes that the current time is 11:43.

```
<Sysname> schedule reboot at 12:00
Reboot system at 12:00 06/06/2013(in 0 hour(s) and 16 minute(s))
 confirm? [Y/N]:
```

Enter **y** at the prompt. If you have used the **terminal logging** command to enable the log display function (enabled by default) on the terminal, the system automatically displays a reboot schedule log message.

```
<Sysname>
%Jun  6 11:43:11:629 2010 Sysname CMD/4/REBOOT:
vty0(192.168.1.54): Set schedule reboot parameters at 11:43:11 06/06/2013, and system will
reboot at 12:00 06/06/2013.
```

schedule reboot delay

Syntax

schedule reboot delay { *hh:mm* | *mm* }

undo schedule reboot

View

User view

Default level

3: Manage level

Parameters

hh:mm: Specifies a time for the device reboot, in the *hh:mm* format. The *hh* value is in the range of 0 to 720, and the *mm* value is in the range of 0 to 59. When the *hh* value is 720, the *mm* value cannot be more than 0.

mm: Specifies a delay for the device reboot in minutes. The value is in the range of 0 to 43,200.

Description

> △ CAUTION:
> - Device reboot can interrupt network services.
> - Changing any clock setting can cancel the reboot schedule.

Use **schedule reboot delay** to schedule a reboot to occur after a delay.

Use **undo schedule reboot** to disable the scheduled reboot function.

By default, the scheduled reboot function is disabled.

The reboot delay cannot exceed 30 x 24 x 60 minutes, or 30 days.

The switch supports only one device reboot schedule. If you configure the **schedule reboot delay** command multiple times, the last configuration takes effect. The **schedule reboot at** command and the **schedule reboot delay** command overwrite each other, and whichever is configured last takes effect.

The alert "REBOOT IN ONE MINUTE" appears one minute before the reboot time.

For data security, if you are performing file operations at the reboot time, the system does not reboot.

Related commands: **schedule reboot at**.

Examples

Configure the switch to reboot in 88 minutes. This example assumes that the current time is 11:48.

```
<Sysname> schedule reboot delay 88
Reboot system at 13:16 06/06/2010(in 1 hour(s) and 28 minute(s)). confirm? [Y/N]:
```

Enter **y** at the prompt. If you have used the **terminal logging** command to enable the log display function (enabled by default) on the terminal, the system automatically displays a reboot schedule log message.

```
<Sysname>
%Jun  6 11:48:44:860 2010 Sysname CMD/4/REBOOT:
vty0(192.168.1.54): Set schedule reboot parameters at 11:48:44 06/06/2010, and system will
reboot at 13:16 06/06/2010.
```

shutdown-interval

Syntax

shutdown-interval *time*

undo shutdown-interval

View

System view

Default level

2: System level

Parameters

time: Specifies the port status detection timer in seconds, which is in the range of 0 to 300.

Description

Use **shutdown-interval** to set the port status detection timer.

Use **undo shutdown-interval** to restore the default.

By default, the timer is 30 seconds.

Some protocols might shut down ports under specific circumstances. For example, MSTP shuts down a BPDU guard enabled port when the port receives a BPDU. Then, the device starts the detection timer. If the port is still down when the detection timer expires, the port quits the shutdown status and resume its actual physical status.

- If you change the detection timer to T1 during port detection, the timer from when you change the timer to the time when the protocol module shuts down the port is T. If T<T1, the port resume its actual physical status after T1-T time. If T>=T1, the port resume its actual physical status immediately. For example, if the detection timer is set to 30 seconds and you change it to 10 seconds (T1=10) two seconds after the port is shut down (T=2), this port resume its actual physical status 8 seconds later. If the detection timer is set to 30 seconds and you change it to 2 seconds ten seconds after the port is shut down, this port resume its actual physical status immediately.

- If the detection timer is set to 0, the protocol module will never automatically recover the port. You need to manually bring up the port by using the **undo shutdown** command or change the detection timer to a non-zero value.

Examples

Set the port status detection timer to 100 seconds.

```
<Sysname> system-view
[Sysname] shutdown-interval 100
```

startup bootrom-access enable

Syntax

startup bootrom-access enable

undo startup bootrom-access enable

View

User view

Default level

2: System level

Parameters

None

Description

Use **startup bootrom-access enable** to enable Boot ROM access during system startup (that is, you can press **Ctrl+B** to enter the Boot ROM menu).

Use **undo startup bootrom-access enable** to disable Boot ROM access during system startup (that is, you cannot enter the Boot ROM menu no matter whether you press **Ctrl+B** or not).

By default, Boot ROM access during system startup is enabled.

Related commands: **display startup**.

Examples

Disable Boot ROM access during system startup.

```
<Sysname> undo startup bootrom-access enable
```

sysname

Syntax

sysname sys*name*

undo sysname

View

System view

Default level

2: System level

Parameters

sysname: Name of the device, which is a string of 1 to 30 characters.

Description

Use **sysname** to set the device name.

Use **undo sysname** to restore the default.

The default device name is **HP**.

A device name identifies a device in a network and works as the user view prompt at the CLI. For example, if the device name is **Sysname**, the user view prompt is <Sysname>.

Examples

Set the name of the device to **S2000**.

```
<Sysname> system-view
[Sysname] sysname S2000
[S2000]
```

system-failure

Syntax

system-failure { **maintain** | **reboot** }

undo system-failure

View

System view

Default level

3: Manage level

Parameters

maintain: Specifies that when the system detects any software abnormality, it maintains the current situation, and does not take any measure to recover itself.

reboot: Specifies that when the system detects any software abnormality, it recovers itself through automatic reboot.

Description

Use **system-failure** to configure the exception handling method for the master switch in the IRF fabric.

By default, the master switch in the IRF fabric adopt the **reboot** method to handle exceptions.

The exception handling method is effective to only the failed member switch, and does not influence the operations of other IRF member switches.

Examples

Set the exception handling method to **reboot**.

```
<Sysname> system-view
[Sysname] system-failure reboot
```

temperature-limit

Syntax

temperature-limit slot *slot-number* **hotspot** *sensor-number lowerlimit warninglimit*

undo temperature-limit slot *slot-number* **hotspot** *sensor-number*

View

System view

Default level

2: System level

Parameters

slot *slot-number*: Specifies an IRF member switch. The *slot-number* argument represents the IRF member ID of the switch.

hotspot: Specifies a hotspot sensor, which is typically placed near the chip that generates a great amount of heat and is used for temperature monitoring.

sensor-number: Specifies a sensor by its number. The sensor number is always 1.

lowerlimit: Specifies a lower threshold in Celsius degrees. The value is in the range of −10°C to +70°C (14°F to 158°F).

warninglimit: Specifies a warning threshold in Celsius degrees. The value is in the range of 20°C to 120°C (68°F to 248°F).

Description

Use **temperature-limit** to set the temperature thresholds for the device.

Use **undo temperature-limit** to restore the default.

By default, the lower threshold is −5°C (23°F), and the warning threshold is 55°C (131°F).

When the device temperature drops below the lower threshold or reaches the warning threshold, the device logs the event and outputs a log message and a trap.

The warning threshold must be higher than the lower threshold.

Related commands: **display environment**.

Examples

\# Set the lower threshold for the hotspot sensor 1 on the IRF member switch 1 to 0°C (32°F), and the warning threshold to 100°C (212°F).

```
<Sysname> system-view
[sysname] temperature-limit slot 1 hotspot 1 0 100
```

time at

Syntax

time *time-id* **at** *time date* **command** *command*

time *time-id* { **one-off** | **repeating** } **at** *time* [**month-date** *month-day* | **week-day** *week-daylist*] **command** *command*

undo time *time-id*

View

Job view

Default level

3: Manage level

Parameters

time *timeid*: Time setting entry, an integer that is in the range of 1 to 10.

at *time*: Specifies an execution time, in the *hh:mm* format, where the *hh* value is in the range of 0 to 23 and the *mm* value is in the range of 0 to 59.

one-off: Specifies that the specified command is executed for once.

repeating: Specifies a recurring time schedule.

date: Specifies the execution date, in the *MM/DD/YYYY* or *YYYY/MM/DD* format. The *YYYY* value is in the range of 2000 to 2035, the *MM* value is in the range of 1 to 12, and the *DD* value is in the range of 1 to 31. The specified execution date must be ahead of the current date.

month-date *month-day*: Specifies the date for executing the command. The *month-day* argument specifies the date, and is in the range of 1 to 31.

week-day *week-daylist*: Specifies the day or days for executing the command. The *week-daylist* argument specifies one day or up to seven days, which can be any combination of Sun, Mon, Tue, Wed, Thu, Fri, and Sat. For example, to have a command executed on Monday, you can enter **week-day** Mon; to have a command executed on Friday and Saturday, enter **week-day** Fri Sat. Use a space between every two days for separation.

command *command*: Specifies the command to be automatically executed, in the text format. The command must be executable in the view specified by the **view** command. Otherwise this command cannot be automatically executed. Therefore, ensure the correctness of the configuration.

Description

Use **time at** to add a command in the job schedule.

Use **undo time** to remove a command from the job schedule.

The commands in a job must be in the same view.

Every job can have up to 10 commands.

Changing a clock setting does not affect the schedule set by using the **time at** command.

The time ID (*time-id*) must be unique in a job. If two time and command bindings have the same time ID, the one configured last takes effect.

Use Table 38 when you add commands in a job.

Table 38 Command schedule options

Command	Description
time *timeid* **at** *time date* **command** *command*	Schedules a command to run at a specific time and date. The time or date must be later than the current system time or date.
time *timeid* **one-off at** *time* **command** *command*	Schedules a command to run at a specific time on the current day. If the specified time has passed, the command runs the next day. The command runs only once.
time *timeid* **one-off at** *time* **month-date** *month-day* **command** *command*	Schedules a command to run at a specific day in the current month. If the specified time or day has passed, the command runs in the next month. The command runs only once.
time *timeid* **one-off at** *time* **week-day** *week-daylist* **command** *command*	Schedules a command to run at a specific time on a specific day or days in the current week. If the specified time or day has passed, the command runs in the next week. The command runs only once.
time *timeid* **repeating at** *time* **command** *command*	Schedules a command to run at a specific time every day.
time *timeid* **repeating at** *time* **month-date** *month-day* **command** *command*	Schedules a command to run on a specific day every month.

Command	Description
time *timeid* **repeating at** *time* **week-day** *week-daylist* **command** *command*	Schedules a command to run at a specific time in a specific day or days every week.

Related commands: **job** and **view**.

Examples

Schedule a job to save the configuration file **a.cfg** at 3:00 on May 18, 2011.

```
<Sysname> system-view
[Sysname] job saveconfig
[Sysname-job-saveconfig] view monitor
[Sysname-job-saveconfig] time 1 at 3:00 2011/05/18 command save a.cfg
```

Schedule a job to save the configuration file at 12:00 every day.

```
<Sysname> system-view
[Sysname] job saveconfig
[Sysname-job-saveconfig] view monitor
[Sysname-job-saveconfig] time 1 repeating at 12:00 command save a.cfg
```

Schedule a job to save the configuration file at 8:00 AM on 5th in the current month, which might be executed in the second month if the time has passed.

```
<Sysname> system-view
[Sysname] job saveconfig
[Sysname-job-saveconfig] view monitor
[Sysname-job-saveconfig] time 1 one-off at 8:00 month-date 5 command save a.cfg
```

Schedule a job to save the configuration file at 8:00 AM on 5th every month.

```
<Sysname> system-view
[Sysname] job saveconfig
[Sysname-job-saveconfig] view monitor
[Sysname-job-saveconfig] time 1 repeating at 8:00 month-date 5 command save a.cfg
```

Schedule a job to save the configuration file at 8:00 AM on Friday and Saturday in the current week, which might be delayed to the next week if the time has passed.

```
<Sysname> system-view
[Sysname] job saveconfig
[Sysname-job-saveconfig] view monitor
[Sysname-job-saveconfig] time 1 one-off at 8:00 week-day fri sat command save a.cfg
```

Schedule a job to save the configuration file at 8:00 every Fridays and Saturdays.

```
<Sysname> system-view
[Sysname] job saveconfig
[Sysname-job-saveconfig] view monitor
[Sysname-job-saveconfig] time 1 repeating at 8:00 week-day fri sat command save a.cfg
```

time delay

Syntax

time *time-id* { **one-off** | **repeating** } **delay** *time* **command** *command*

undo time *time-id*

View

Job view

Default level

3: Manage level

Parameters

time *timeid*: Time setting entry, an integer that is in the range of 1 to 10.

one-off: Specifies that the specified command is executed for once.

repeating: Specifies a recurring time schedule.

delay *time*: Specifies the delay time for executing the command, in the *hh:mm* format or *mm* format.

- When the time argument is in the *hh:mm* format, the *hh* value is in the range of 0 to 720, and the *mm* value is in the range of 0 to 59. When the *hh* value is 720, the *mm* value can be only 00.
- When the time argument is in the *mm* format, the *mm* value is in the range of 1 to 43200. That is, the maximum value of the delay timer is 30 days.

command *command*: Specifies the command to be automatically executed, in the text format. The specified command must be a complete command without interactive input.

Description

Use **time delay** to add a command to run after a delay in the job schedule.

Use **undo time** to remove the configuration.

The commands in a scheduled job must be in the same view.

Every job can have up to 10 commands.

Changing a clock setting does not affect the schedule set by using the **time delay** command.

The time ID (*time-id*) must be unique in a job. If two time and command bindings have the same time ID, the one configured last takes effect.

Use Table 39 when you add commands in a job.

Table 39 Command schedule options

Command	Description
time *timeid* **one-off delay** *time2* **command** *command*	Schedules a command to run after a delay time. The command runs only once.
time *timeid* **repeating delay** *time2* **command** *command*	Schedules a command to run every the delay time.

Related commands: **job** and **view**.

Examples

\# Save the configuration file five minutes later.

```
<Sysname> system-view
[Sysname] job saveconfig
[Sysname-job-saveconfig] view monitor
[Sysname-job-saveconfig] time 1 one-off delay 5 command save a.cfg
```

\# Save the configuration file every five minutes.

```
<Sysname> system-view
[Sysname] job saveconfig
[Sysname-job-saveconfig] view monitor
[Sysname-job-saveconfig] time 1 repeating delay 5 command save a.cfg
```

view

Syntax

view *view-name*

undo view

View

Job view

Default level

3: Manage level

Parameters

view-name: Specifies a view in which commands in the job run. A view name is a string of 1 to 90 characters.

Description

Use **view** to specify the view in which the commands in the job run.

Use **undo view** to remove the configuration.

By default, no view is specified for the scheduled job.

Every job can have only one view. If you specify multiple views, the one specified the last takes effect.

Input a view name in its complete form. Most commonly used view names include **monitor** for user view, **system** for system view, **GigabitEthernet x/x/x**, and **Ten-GigabitEthernet x/x/x** for Ethernet interface view, and **Vlan-interfacex** for VLAN interface view.

Related commands: **job** and **time**.

Examples

Specify the view in which the commands in the job run.

```
<Sysname> system-view
[Sysname] job creatvlan
[Sysname-job-creatvlan] view system
```

Support and other resources

Contacting HP

For worldwide technical support information, see the HP support website:

http://www.hp.com/support

Before contacting HP, collect the following information:

- Product model names and numbers
- Technical support registration number (if applicable)
- Product serial numbers
- Error messages
- Operating system type and revision level
- Detailed questions

Subscription service

HP recommends that you register your product at the Subscriber's Choice for Business website:

http://www.hp.com/go/wwalerts

After registering, you will receive email notification of product enhancements, new driver versions, firmware updates, and other product resources.

Related information

Documents

To find related documents, browse to the Manuals page of the HP Business Support Center website:

http://www.hp.com/support/manuals

- For related documentation, navigate to the Networking section, and select a networking category.
- For a complete list of acronyms and their definitions, see *HP FlexNetwork Technology Acronyms.*

Websites

- HP.com http://www.hp.com
- HP Networking http://www.hp.com/go/networking
- HP manuals http://www.hp.com/support/manuals
- HP download drivers and software http://www.hp.com/support/downloads
- HP software depot http://www.software.hp.com
- HP Education http://www.hp.com/learn

Conventions

This section describes the conventions used in this documentation set.

Command conventions

Convention	Description
Boldface	**Bold** text represents commands and keywords that you enter literally as shown.
Italic	*Italic* text represents arguments that you replace with actual values.
[ ]	Square brackets enclose syntax choices (keywords or arguments) that are optional.
{ x | y | ... }	Braces enclose a set of required syntax choices separated by vertical bars, from which you select one.
[x | y | ...]	Square brackets enclose a set of optional syntax choices separated by vertical bars, from which you select one or none.
{ x | y | ... } *	Asterisk-marked braces enclose a set of required syntax choices separated by vertical bars, from which you select at least one.
[x | y | ...] *	Asterisk-marked square brackets enclose optional syntax choices separated by vertical bars, from which you select one choice, multiple choices, or none.
&<1-n>	The argument or keyword and argument combination before the ampersand (&) sign can be entered 1 to n times.
#	A line that starts with a pound (#) sign is comments.

GUI conventions

Convention	Description
Boldface	Window names, button names, field names, and menu items are in bold text. For example, the **New User** window appears; click **OK**.
>	Multi-level menus are separated by angle brackets. For example, **File** > **Create** > **Folder**.

Symbols

Convention	Description
⚠ WARNING	An alert that calls attention to important information that if not understood or followed can result in personal injury.
△ CAUTION	An alert that calls attention to important information that if not understood or followed can result in data loss, data corruption, or damage to hardware or software.
ⓘ IMPORTANT	An alert that calls attention to essential information.
NOTE	An alert that contains additional or supplementary information.
☼ TIP	An alert that provides helpful information.

Network topology icons

	Represents a generic network device, such as a router, switch, or firewall.
	Represents a routing-capable device, such as a router or Layer 3 switch.
	Represents a generic switch, such as a Layer 2 or Layer 3 switch, or a router that supports Layer 2 forwarding and other Layer 2 features.
	Represents an access controller, a unified wired-WLAN module, or the switching engine on a unified wired-WLAN switch.
	Represents an access point.
	Represents a security product, such as a firewall, a UTM, or a load-balancing or security card that is installed in a device.
	Represents a security card, such as a firewall card, a load-balancing card, or a NetStream card.

Port numbering in examples

The port numbers in this document are for illustration only and might be unavailable on your device.

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