17 Free Mobility Commands

17.1 Free Mobility Configuration Commands

17.1.1 Command Support

Only the S5731-H, S5731-S, S5731S-H, S5731S-S, S5732-H, S6730-H, S6730S-H, S6730-S, and S6730S-S support the commands in this chapter.

17.1.2 display group-policy status

Function

The **display group-policy status** command displays the status of the controller associated with the device.

Format

display group-policy status

Parameters

None

Views

All views

Default Level

1: Monitoring level

Usage Guidelines

After running the **group-policy controller** command, you can run this command to check the status of the controller associated with the device.

Example

Display the status of the controller associated with the device.

```
<HUAWEI> display group-policy status
Controller IP address: 192.168.1.1
Controller port: 5222
Backup controller IP address: -
Backup controller port: -
Source IP address: 192.168.10.1
State: not connected
Connected controller: master
Device protocol version: 2
Controller protocol version: -
```

Table 17-1 Description of the **display group-policy status** command output

Item	Description
Controller IP address	IP address of the master controller. To configure the IP address of the master controller, run the **group-policy controller** command.
Controller port	Port number of the master controller that exchanges packets with the device. To configure the port number of the master controller, run the **group-policy controller** command.
Backup controller IP address	IP address of the backup controller. To configure the IP address of the backup controller, run the **group-policy controller** command.
Backup controller port	Port number of the backup controller that exchanges packets with the device. To configure the port number of the backup controller, run the **group-policy controller** command.
Source IP address	Source IP address that the device uses to communicate with the controller. To configure the source IP address, run the **group-policy controller** command.

Item	Description
State	Status of the connection between the device and controller. • disabled: indicates that the free mobility function is disabled. • not connected: indicates that the device and controller are not connected. • working: indicates that the device and controller have been connected.
Connected controller	Controller connected to the device. • master: indicates the master controller. • slave: indicates the backup controller. • none: indicates that the device and controller are not connected.
Device protocol version	Protocol version number of the device.
Controller protocol version	Protocol version number of the controller. The parameter displays - when the device is not registered on the controller.

17.1.3 group-policy controller

Function

The **group-policy controller** command enables the free mobility function.

The **undo group-policy controller** command restores the default configuration.

By default, the free mobility function is disabled.

NOTE

This command is supported only when the device interoperates with Agile Controller-Campus.

Format

group-policy controller *ip-address1* [*port-number1*] [**backup** *ip-address2* [*port-number2*]] **password** *password* [**src-ip** *ip-address3*] [**vpn-instance** *vpn-instance-name*]

undo group-policy controller

Parameters

Parameter	Description	Value
ip-address1 [*port-number1*]	Specifies the IP address of the active controller and the port number for exchanging packets between the active controller and device. If no port number is configured, the default port number 5222 is used.	*ip-address1*: The value is in dotted decimal notation. *port-number1*: The value is an integer in the range from 1 to 65535.
backup *ip-address2* [*port-number2*]	Specifies the IP address of the standby controller and the port number for exchanging packets between the standby controller and device. If no port number is configured, the default port number 5222 is used.	*ip-address2*: The value is in dotted decimal notation. *port-number2*: The value is an integer in the range from 1 to 65535.
password *password*	Specifies the password for connecting the device to controllers.	The password configured on the device must be the same as that configured on controllers. The password configured on a controller needs to meet the following rules: • The length should be between 8 to 32 characters. (The password can be a plain text of 8 to 32 characters or a cipher text of 48 to 68 characters.) • The password must contain at least two types of the following characters: digits, uppercase letters, lowercase letters, and special characters. • The password cannot contain more than two consecutive identical characters. • The password cannot be the same as the user name or the reverse of the user name.

Parameter	Description	Value
src-ip *ip-address3*	Specifies the source IP address that the device uses to communicate with a controller. If this parameter is not configured, the device selects one of its own IP addresses to communicate with the controller.	The value is in dotted decimal notation.
vpn-instance *vpn-instance-name*	Specifies the name of a VPN instance to which the specified source IP address belongs.	The value must be the name of an existing VPN instance.

Views

System view

Default Level

3: Management level

Usage Guidelines

Usage Scenario

The free mobility function allows a user to obtain the same network access policy regardless of the user's location and IP address used. In addition, user access policies only need to be uniformly deployed and managed on controllers, simplifying network deployment.

After the free mobility function is enabled using the **group-policy controller** command on an access device, the device can connect to the specified controller. After you deploy network access policies for users on the controller, the controller delivers the policies to devices. The devices then can control users' network access rights.

Precautions

This command cannot be run on a device if a controller delivers services to the device.

Example

Enable the free mobility function, and set the controller IP address to 10.1.1.11 and the connection password to YsHsjx_202207.

```
<HUAWEI> system-view
[HUAWEI] group-policy controller 10.1.1.11 password YsHsjx_202207
```


17.1.4 group-policy version

Function

The **group-policy version** command configures the user group version or user group policy version used for free mobility.

Format

group-policy { **user-group** | **user-group-policy** } **version** *version*

Parameters

Parameter	Description	Value
user-group	Specifies a user group.	-
user-group-policy	Specifies a user group policy.	-
version *version*	Specifies a version.	The value is an integer that ranges from 0 to 4294967295. **NOTE** The version needs to be obtained from the controller database. The configured version must be consistent with the version obtained from the controller database. Otherwise, the switch configuration is inconsistent with the controller configuration or the controller configuration fails to be delivered to the switch.

Views

System view

Default Level

3: Management level

Usage Guidelines

Usage Scenario

When a switch is connected to the controller and has free mobility configured, the switch's user group version and user group policy version used for free mobility are restored to 0 if the **group-policy controller** command configuration is deleted incorrectly from the switch. In this situation, the switch and controller have inconsistent user group versions and user group policy versions used for free mobility. This inconsistency leads to a failure to deliver the free mobility configuration from the controller to the switch even though the **group-policy**

controller command is configured again on the switch. To address this issue, run the **group-policy version** command on the switch to configure the user group version and user group policy version used for free mobility. This configuration can restore the function that delivers the free mobility configuration from the controller to the switch.

Precautions

- The **group-policy version** command can be used to restore communication between a switch and the controller only when the **group-policy controller** command configuration is deleted incorrectly. Do not use the **group-policy version** command when the switch communicates with the controller normally.
- If you run the **group-policy version** command multiple times, only the latest configuration takes effect.
- The **group-policy version** command configuration is not recorded in the configuration file after this command is executed. To verify the command configuration, run the **display group-policy health** command in the diagnostic view. In the command output, **CMDC_CONTROLLER_UGSYNINCREMET_CONTROL** indicates the user group version, and **CMDC_CONTROLLER_UGPSYNINCREMET_CONTROL** indicates the user group policy version.

Example

Set the user group version used for free mobility to 20.

```
<HUAWEI> system-view
[HUAWEI] group-policy user-group version 20
```

17.1.5 ip-group service timer heart-beat

Function

The **ip-group service timer heart-beat** command configures the interval for sending IP-GROUP channel heartbeat packets.

The **undo ip-group service timer heart-beat** command restores the default configuration.

By default, IP-GROUP channel heartbeat packets are sent at an interval of 5 minutes.

NOTE

This command is supported only when the device interoperates with iMaster NCE-Campus.

Format

ip-group service timer heart-beat *interval*

undo ip-group service timer heart-beat

Parameters

Parameter	Description	Value
interval	Specifies the interval at which IP-GROUP channel heartbeat packets are sent.	The value is an integer in the range from 1 to 1440, in minutes.

Views

System view

Default Level

2: Configuration level

Usage Guidelines

Usage Scenario

After an IP-GROUP channel is established, you can run the **ip-group service timer heart-beat** command to set the interval for sending IP-GROUP channel heartbeat packets. In this way, the device periodically sends heartbeat packets to the controller to detect connectivity of the IP-GROUP channel.

Precautions

If you want to modify the configuration after the IP-GROUP channel is established, run the **undo ip-group service ip-address** command to delete the IP-GROUP channel first.

Example

Set the interval for sending IP-GROUP channel heartbeat packets to 6 minutes.

```
<HUAWEI> system-view
[HUAWEI] ip-group service timer heart-beat 6
```

17.1.6 ip-group service timer reconnection

Function

The **ip-group service timer reconnection** command configures an IP-GROUP channel reconnection interval.

The **undo ip-group service timer reconnection** command restores the default configuration.

By default, the IP-GROUP channel reconnection interval is 1 minute.

NOTE

This command is supported only when the device interoperates with iMaster NCE-Campus.

Format

ip-group service timer reconnection *interval*

undo ip-group service timer reconnection

Parameters

Parameter	Description	Value
interval	Specifies the IP-GROUP channel reconnection interval.	The value is an integer in the range from 1 to 255, in minutes.

Views

System view

Default Level

2: Configuration level

Usage Guidelines

Usage Scenario

If the IP-GROUP channel fails, the device periodically attempts to set up an IP-GROUP channel with a controller at the specified interval.

Precautions

If you want to modify the configuration after the IP-GROUP channel is established, run the **undo ip-group service ip-address** command to delete the IP-GROUP channel first.

Example

Set the IP-GROUP channel reconnection interval to 2 minutes.

```
<HUAWEI> system-view
[HUAWEI] ip-group service timer reconnection 2
```

17.1.7 ip-group service timer down-delay

Function

The **ip-group service timer down-delay** command configures a delay in responding to the IP-GROUP channel interruption event.

The **undo ip-group service timer down-delay** command restores the default configuration.

By default, the delay in responding to the IP-GROUP channel interruption event is 30 seconds.

NOTE

This command is supported only when the device interoperates with iMaster NCE-Campus.

Format

ip-group service timer down-delay *interval*

undo ip-group service timer down-delay

Parameters

Parameter	Description	Value
interval	Specifies a delay in responding to the IP-GROUP channel interruption event.	The value is an integer in the range from 0 to 600, in seconds. The value 0 indicates that the device responds to the IP-GROUP channel interruption event without any delay.

Views

System view

Default Level

2: Configuration level

Usage Guidelines

Usage Scenario

If the IP-GROUP channel between the device and controller is interrupted, the device responds with certain actions, for example, emergency processing. If the IP-GROUP channel is interrupted frequently within a short time, the device resources are affected. To prevent this problem, set a delay in responding to the IP-GROUP channel interruption event.

Precautions

If you want to modify the configuration after the IP-GROUP channel is established, run the **undo ip-group service ip-address** command to delete the IP-GROUP channel first.

Example

Set the delay in responding to the IP-GROUP channel interruption event to 35 seconds.

```
<HUAWEI> system-view
[HUAWEI] ip-group service timer down-delay 35
```


17.1.8 ip-group service timer up-delay

Function

The **ip-group service timer up-delay** command configures a delay in responding to the IP-GROUP channel Up event.

The **undo ip-group service timer up-delay** command restores the default configuration.

By default, the delay in responding to the IP-GROUP channel Up event is 30 seconds.

NOTE

This command is supported only when the device interoperates with iMaster NCE-Campus.

Format

ip-group service timer up-delay *interval*

undo ip-group service timer up-delay

Parameters

Parameter	Description	Value
interval	Specifies a delay in responding to the IP-GROUP channel Up event.	The value is an integer in the range from 0 to 600, in seconds. The value 0 indicates that the device responds to the IP-GROUP channel Up event without any delay.

Views

System view

Default Level

2: Configuration level

Usage Guidelines

Usage Scenario

When the IP-GROUP channel between the device and controller goes Up, the device responds with certain actions, for example, switching from emergency processing to normal processing. If the IP-GROUP channel goes Up frequently within a short time, the device resources are affected. To prevent this problem, set a delay in responding to the IP-GROUP channel Up event.

Precautions

If you want to modify the configuration after the IP-GROUP channel is established, run the **undo ip-group service ip-address** command to delete the IP-GROUP channel first.

Example

Set the delay in responding to the IP-GROUP channel Up event to 35 seconds.

```
<HUAWEI> system-view
[HUAWEI] ip-group service timer up-delay 35
```

17.1.9 ip-group service ip-address

Function

The **ip-group service ip-address** command configures an IP address of a controller.

The **undo ip-group service ip-address** command deletes the IP address of a controller.

By default, no controller IP address is configured on the device.

NOTE

This command is supported only when the device interoperates with iMaster NCE-Campus.

Format

ip-group service ip-address *ip-address* [**port** *port-number*] **pki-realm-name** *pki-realm-name* [**backup**]

undo ip-group service ip-address [*ip-address* [**backup**]]

Parameters

Parameter	Description	Value
ip-address	Specifies the IP address of a controller.	The value is in dotted decimal notation.
port *port-number*	Specifies the port number of a controller.	The value is an integer in the range from 1 to 65535. The default value is 50304.
pki-realm-name *pki-realm-name*	Specifies the name of a PKI realm.	The value is a string of 1 to 64 case-insensitive characters without spaces.

Parameter	Description	Value
backup	Specifies the IP address of the backup controller. If **backup** is not specified, the IP address of the primary controller is configured. If *ip-address* is not specified in the **undo** command, all controller IP addresses are removed.	-

Views

System view

Default Level

2: Configuration level

Usage Guidelines

Usage Scenario

Before the device sets up an IP-GROUP channel with a controller, you need to configure the IP address and port number of the controller on the device, so that the device can send packets to the controller.

Precautions

If the default PKI realm is bound, security risks exist.

If only the IP address of the backup controller is configured and the IP address of the primary controller is not configured, the device does not establish a link with the backup controller.

Example

Configure the IP address and port number of a controller.

```
<HUAWEI> system-view
[HUAWEI] ip-group service ip-address 10.1.1.1 port 50304 pki-realm-name abc
```

