

1 DHCPv6 Commands

Command	Function
bootfile-url	Configure the boot file Uniform Resource Locator (URL) that a Dynamic Host Configuration Protocol for IPv6 (DHCPv6) server assigns to a DHCPv6 client.
clear ipv6 dhcp binding	Clear bindings on a DHCPv6 server.
clear ipv6 dhcp conflict	Clear conflicted addresses on a DHCPv6 server.
clear ipv6 dhcp relay statistics	Clear statistics of different types of packets on a DHCPv6 relay agent.
clear ipv6 dhcp server statistics	Clear statistics of different types of packets on a DHCPv6 server.
dns-server	Configure the Domain Name System (DNS) server address to be assigned from a DHCPv6 server to a DHCPv6 client.
domain-name	Configure the domain name to be assigned from a DHCPv6 server to a DHCPv6 client.
excluded-address	Configure excluded network segments on a DHCPv6 server.
iana-address prefix	Configure the IA_NA address prefix to be assigned from a DHCPv6 server to a DHCPv6 client.
ipv6 dhcp pool	Create a DHCPv6 address pool and enter the DHCPv6 address pool configuration mode.
ipv6 dhcp relay destination	Enable the DHCPv6 Relay function and specify a destination address.
ipv6 dhcp relay option interface-id format user-defined	Configure the Interface ID option on a DHCPv6 relay agent.
ipv6 dhcp relay option mac-str-format	Configure the format of the MAC address in the user-defined Option on a DHCPv6 relay agent.
ipv6 dhcp relay option remote-id enable	Add the Remote ID option to DHCPv6 relay packets.
ipv6 dhcp relay option remote-id format user-defined	Configure the value of Remote ID in DHCPv6 relay packets.

<u>ipv6 dhcp relay source</u>	Configure the source interface of a DHCPv6 relay agent.
<u>ipv6 dhcp server</u>	Enable the DHCPv6 Server function on an interface.
<u>ipv6 local pool</u>	Configure a local prefix pool for the PD service of a DHCPv6 server.
<u>option52</u>	Configure the IPv6 address of a Control and Provisioning of Wireless Access Points (CAPWAP) access controller (AC) specified on a DHCPv6 server.
<u>prefix-delegation</u>	Configure prefixes for statically bound addresses on a DHCPv6 server.
<u>prefix-delegation pool</u>	Configure a local prefix pool on a DHCPv6 server.
<u>show ipv6 dhcp</u>	Display the DUID of a DHCPv6 device.
<u>show ipv6 dhcp binding</u>	Display address bindings on a DHCPv6 server.
<u>show ipv6 dhcp conflict</u>	Display conflicted addresses on a DHCPv6 server.
<u>show ipv6 dhcp interface</u>	Display DHCPv6 interfaces.
<u>show ipv6 dhcp pool</u>	Display DHCPv6 address pools.
<u>show ipv6 dhcp relay agent</u>	Display source interfaces on a DHCPv6 relay agent.
<u>show ipv6 dhcp relay destination</u>	Display destination addresses on a DHCPv6 relay agent.
<u>show ipv6 dhcp relay source</u>	Display the source interface definition configuration on a DHCPv6 relay agent.
<u>show ipv6 dhcp relay statistics</u>	Display statistics of different types of packets on a DHCPv6 relay agent.
<u>show ipv6 dhcp server statistics</u>	Displays DHCPv6 server statistics.
<u>show ipv6 local pool</u>	Display local prefix pool configuration and usage on the current device.

1.1 bootfile-url

Function

Run the **bootfile-url** command to configure the boot file Uniform Resource Locator (URL) that a Dynamic Host Configuration Protocol for IPv6 (DHCPv6) server assigns to a DHCPv6 client.

Run the **no** form of this command to remove this configuration.

No boot file URL is configured by default.

Syntax

bootfile-url *url-string*

no bootfile-url

Parameter Description

url-string: Boot file URL. The value is a case-sensitive string of 1 to 256 characters.

Command Modes

DHCPv6 address pool configuration mode

Default Level

14

Usage Guidelines

When this command is run on a DHCPv6 address pool multiple times, the last configuration prevails.

Examples

The following example sets the boot file URL in DHCPv6 address pool pool1 to tftp://1000::1/boot.bin.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ipv6 dhcp pool pool1
Hostname(config-dhcp)# bootfile-url tftp://1000::1/boot.py
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

- [show ipv6 dhcp pool](#)

1.2 clear ipv6 dhcp binding

Function

Run the **clear ipv6 dhcp binding** command to clear bindings on a DHCPv6 server.

Syntax

```
clear ipv6 dhcp binding [ ipv6-address ]
```

Parameter Description

ipv6-address: IPv6 address or prefix.

Command Modes

Privileged EXEC mode

Default Level

14

Usage Guidelines

If the *ipv6-address* parameter is not configured, all bindings on a DHCPv6 server are cleared. If the *ipv6-address* parameter is configured, only bindings of the specified address or prefix are cleared.

Examples

The following example clears all bindings on a DHCPv6 server.

```
Hostname> enable
Hostname# clear ipv6 dhcp binding
```

Notifications

When binding information of the specified address or prefix cannot be found, the following notification will be displayed:

```
Failed to clear DHCPv6 binding x:x:x:x:x:x:x,x, please try again
```

Platform Description

N/A

1.3 clear ipv6 dhcp conflict

Function

Run the **clear ipv6 dhcp conflict** command to clear conflicted addresses on a DHCPv6 server.

Syntax

```
clear ipv6 dhcp conflict { ipv6-address | * }
```

Parameter Description

ipv6-address: IPv6 address or prefix.

*: All IPv6 addresses or prefixes.

Command Modes

Privileged EXEC mode

Default Level

14

Usage Guidelines

To clear all conflicted addresses when the *ipv6-address* parameter is not configured, add an asterisk (*) after this command, which represents all IPv6 addresses or prefixes. If the *ipv6-address* parameter is configured, only conflict information of the specified address is cleared.

When a DHCPv6 client detects that the assigned IPv6 address is in conflict, it sends a DECLINE packet to the DHCPv6 server. The DHCPv6 server adds the address to the address conflict queue.

Examples

The following example clears conflicted addresses on a DHCPv6 server.

```
Hostname> enable
Hostname# clear ipv6 dhcp conflict 2008:50::2
```

Notifications

N/A

Platform Description

N/A

1.4 clear ipv6 dhcp relay statistics

Function

Run the **clear ipv6 dhcp relay statistics** command to clear statistics of different types of packets on a DHCPv6 relay agent.

Syntax

```
clear ipv6 dhcp relay statistics
```

Parameter Description

N/A

Command Modes

Privileged EXEC mode

Default Level

14

Usage Guidelines

N/A

Examples

The following example clears statistics of different types of packets on a DHCPv6 relay agent.

```
Hostname> enable
Hostname# clear ipv6 dhcp relay statistics
```

Notifications

N/A

Platform Description

N/A

1.5 clear ipv6 dhcp server statistics

Function

Run the **clear ipv6 dhcp server statistics** command to clear statistics of different types of packets on a DHCPv6 server.

Syntax

```
clear ipv6 dhcp server statistics
```

Parameter Description

N/A

Command Modes

Privileged EXEC mode

Default Level

14

Usage Guidelines

N/A

Examples

The following example clears statistics of different types of packets on a DHCPv6 server.

```
Hostname> enable
Hostname# clear ipv6 dhcp server statistics
```

Notifications

N/A

Platform Description

N/A

1.6 dns-server

Function

Run the **dns-server** command to configure the Domain Name System (DNS) server address to be assigned from a DHCPv6 server to a DHCPv6 client.

Run the **no** form of this command to remove this configuration.

No DNS server address is configured by default.

Syntax

dns-server *ipv6-address*

no dns-server *ipv6-address*

Parameter Description

ipv6-address: DNS server address to be assigned to a DHCPv6 client.

Command Modes

DHCPv6 address pool configuration mode

Default Level

14

Usage Guidelines

You can run this command multiple times to create multiple DNS server addresses. New DNS server addresses do not overwrite old one. A maximum of 10 DNS server addresses can be configured.

Examples

The following example sets the DNS server address in DHCPv6 address pool pool1 to **2008:1::1**.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ipv6 dhcp pool pool1
Hostname(config-dhcp)# dns-server 2008:1::1
```

Notifications

When the number of configured DNS server addresses exceeds the limit, the following notification will be displayed:

```
Reach dhcpv6 dns limit for each pool, 10.
```

When the configured DNS server address is incorrect, the following notification will be displayed:

```
Configure dhcpv6 dns-server with an invalid unicast ipv6 address.
```

When the DNS server address configuration fails, the following notification will be displayed:

```
Failed to configure DNS address, please try again.
```

Common Errors

N/A

Platform Description

N/A

Related Commands

- [show ipv6 dhcp pool](#)

1.7 domain-name

Function

Run the **domain-name** command to configure the domain name to be assigned from a DHCPv6 server to a DHCPv6 client.

Run the **no** form of this command to remove this configuration.

No domain name is configured by default.

Syntax

domain-name *domain*

no domain-name *domain*

Parameter Description

domain: Domain name to be assigned to a DHCPv6 client. The value is a case-sensitive string of 1 to 255 characters.

Command Modes

DHCPv6 address pool configuration mode

Default Level

14

Usage Guidelines

You can run this command multiple times to create multiple domain names. New domain names do not overwrite old ones. A maximum of 10 domain names can be configured.

Examples

The following example sets the domain name in DHCPv6 address pool pool1 to **example.com**.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ipv6 dhcp pool pool1
Hostname(config-dhcp)# domain-name example.com
```

Notifications

When the number of configured domain names exceeds the limit, the following notification will be displayed:

```
Reach dhcpv6 domain name limit for each pool, 10.
```

When domain name configuration fails, the following notification will be displayed:

```
Failed to configure domain name, please try again.
```


Common Errors

N/A

Platform Description

N/A

Related Commands

- [show ipv6 dhcp pool](#)

1.8 excluded-address

Function

Run the **excluded-address** command to configure excluded network segments on a DHCPv6 server.

Run the **no** form of this command to remove this configuration.

After an address pool is created, no excluded network segment is configured on a DHCPv6 server by default.

Syntax

excluded-address *start-ipv6-address* [*end-ipv6-address*]

no excluded-address *start-ipv6-address* [*end-ipv6-address*]

Parameter Description

start-ipv6-address: Start IPv6 address in an excluded network segment.

end-ipv6-address: End IPv6 address in an excluded network segment. If this parameter is not configured or is the same as the start IPv6 address, a single IPv6 address is excluded.

Command Modes

DHCPv6 address pool configuration mode

Default Level

14

Usage Guidelines

You can run this command multiple times to create multiple excluded network segments.

Before creating an excluded network segment, you need to configure the corresponding identity association non-temporary address (IA_NA) network segment, and the excluded network segment must belong to the IA_NA network segment. After an IA_NA network segment is deleted, excluded network segments belonging to this segment are deleted automatically. After an excluded network segment is created, online entries of users in this network segment are deleted automatically.

Examples

The following example excludes addresses in the network segment from 1000::100 to 1000::200 in DHCPv6 address pool pool1.

```
Hostname> enable
Hostname# configure terminal
```

```
Hostname(config)# ipv6 dhcp pool pool1
Hostname(dhcp-config)# excluded-address 1000::100 1000::200
```

Notifications

When the number of configured excluded network segments exceeds the limit, the following notification will be displayed:

```
Reach dhcpv6 exclude address limit for each pool, 1000.
```

When a configured excluded network segment does not belong to any IA_NA network segment, the following notification will be displayed:

```
Configure dhcpv6 iana address first before the exclude range.
```

When a configured excluded network segment conflicts with another excluded network segment, the following notification will be displayed:

```
Configure dhcpv6 exclude conflict with other exclude range.
```

When an excluded network segment fails to be configured, the following notification will be displayed:

```
Failed to configure exclude address, please try again.
```

Common Errors

No IA_NA network segment is configured before excluded addresses are configured.

Platform Description

N/A

Related Commands

N/A

1.9 iana-address prefix

Function

Run the **iana-address prefix** command to configure the IA_NA address prefix to be assigned from a DHCPv6 server to a DHCPv6 client.

Run the **no** form of this command to remove this configuration.

No IA_NA address prefix is configured by default.

Syntax

```
iana-address prefix ipv6-address/prefix-length [ lifetime { valid-lifetime | infinite } { preferred-lifetime | infinite } ]
```

```
no iana-address prefix
```

Parameter Description

ipv6-address/prefix-length: IPv6 address or prefix length.

lifetime: Specifies the valid time of an address to be assigned to a DHCPv6 client.

valid-lifetime: Valid time for a DHCPv6 client to use an assigned address, in seconds. The range is from 60 to 4294967295. The default value is **3600**.

preferred-lifetime: Time during which an address is still preferentially assigned to a client, in seconds. The range is from 60 to 4294967295. The default value is **3600**.

infinite: Indicates that an IA_NA address prefix is permanently valid.

Command Modes

DHCPv6 address pool configuration mode

Default Level

14

Usage Guidelines

After an IA_NA address prefix is configured by running this command, a DHCPv6 server can assign an IA_NA address with this prefix to a DHCPv6 client.

When receiving an IA_NA address request from a DHCPv6 client, the DHCPv6 server selects an available address based on the IA_NA address prefix and assigns the address to the client. When the client no longer needs this address, the DHCPv6 server marks this address as available for other clients.

Examples

The following example configures an IA_NA address prefix 2008:50::/64 in DHCPv6 address pool pool1, sets the valid time for a client to use an assigned address with this prefix to 2000s, and sets the time during which the address is still preferentially assigned to the client to 1000s.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)#ipv6 dhcp pool pool1
Hostname(config-dhcp)# iana-address prefix 2008:50::/64 lifetime 2000 1000
```

Notifications

When the value of *valid-lifetime* is smaller than that of *preferred-lifetime*, the following notification will be displayed:

```
Preferred lifetime must not exceed valid lifetime.
```

When the number of configured address prefixes exceeds the limit, the following notification will be displayed:

```
iana range number has reached the max 20.
```

Common Errors

N/A

Platform Description

N/A

Related Commands

- [show ipv6 dhcp pool](#)

1.10 ipv6 dhcp pool

Function

Run the **ipv6 dhcp pool** command to create a DHCPv6 address pool and enter the DHCPv6 address pool configuration mode.

Run the **no** form of this command to remove this configuration.

No DHCPv6 address pool is configured by default.

Syntax

```
ipv6 dhcp pool pool-name
```

```
no ipv6 dhcp pool pool-name
```

Parameter Description

pool-name: DHCPv6 address pool name.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

This command is used to create a DHCPv6 address pool. After configuring this command, you can enter the DHCPv6 address pool configuration mode, so as to configure address pool parameters such as the prefix and DNS server address.

After a DHCPv6 address pool is created, you can run the **ipv6 dhcp server** command on an interface to associate the address pool with the DHCPv6 server on the interface.

Examples

The following example creates a DHCPv6 address pool named **pool1**.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ipv6 dhcp pool pool1
Hostname(config-dhcp)#
```

Notifications

When the number of configured address pools exceeds the limit, the following notification will be displayed:

```
Reach dhcpv6 pool limit 256.
```

When address pool configuration fails, the following notification will be displayed:

```
Failed to configure dhcpv6 pool xxx, please try again.
```

Common Errors

N/A

Platform Description

N/A

Related Commands

- [show ipv6 dhcp pool](#)

1.11 ipv6 dhcp relay destination

Function

Run the **ipv6 dhcp relay destination** command to enable the DHCPv6 Relay function and specify a destination address.

Run the **no** form of this command to disable this feature.

The DHCPv6 Relay function is disabled by default.

Syntax

```
ipv6 dhcp relay destination [ vrf vrf-name ] ipv6-address [ interface-type interface-number ]
```

```
no ipv6 dhcp relay destination [ vrf vrf-name ] ipv6-address [ interface-type interface-number ]
```

Parameter Description

vrf *vrf-name*: Specifies a virtual routing and forwarding (VRF) instance.

ipv6-address: Destination address on a DHCPv6 relay agent.

interface-type interface-number: Type and number of the interface over which packets are routed to the destination address. When the destination address is a multicast address, this parameter is mandatory.

Command Modes

Interface configuration mode

Default Level

14

Usage Guidelines

This command can be configured only on layer 3 (L3) interfaces.

The total number of destination addresses is 20 at most on all interfaces configured with the DHCPv6 Relay function.

After this function is configured on an interface, all packets received from DHCPv6 clients on this interface are encapsulated and then forwarded to each configured destination address.

Examples

The following example enables the DHCPv6 Relay service on Switch Virtual Interface (SVI) 1 and sets the destination address to **3001::2**.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# interface vlan 1
```

```
Hostname(config-if-VLAN 1)# ipv6 dhcp relay destination 3001::2
```

Notifications

When the configured relay address is a local address, the following notification will be displayed:

```
Cannot relay to this relay agent itself.
```

When the DHCPv6 Relay function is configured on an interface that already works in another mode (DHCPv6 server or client), the following notification will be displayed:

```
Interface is in DHCP xxx mode.
```

When the DHCPv6 Relay function fails to be configured, the following notification will be displayed:

```
Failed to configure DHCPv6 relay, please try again.
```

Common Errors

N/A

Platform Description

N/A

Related Commands

- [show ipv6 dhcp relay destination](#)

1.12 ipv6 dhcp relay option interface-id format user-defined

Function

Run the **ipv6 dhcp relay option interface-id format user-defined** command to configure the **Interface ID** option on a DHCPv6 relay agent.

Run the **no** form of this command to remove this configuration.

The interface name is the value of **Interface ID** on a DHCPv6 relay agent by default.

Syntax

```
ipv6 dhcp relay option interface-id format user-defined text
```

```
no ipv6 dhcp relay option interface-id format user-defined
```

Parameter Description

text: Value of user-defined **Interface ID**. The value is a string of 1 to 255 characters.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

When customizing the format of an option, you can use keywords described in the following table. The format string behind the keywords can be set to the hexadecimal encapsulation format, ASCII encapsulation format, or hexadecimal and ASCII hybrid encapsulation format.

Table 1-1 User-Defined Option Keywords

Keyw ord	Name	Format			Description
		AS CII	Hexadeci mal	Number of Occupied Hexadecimal Bytes	
hostname	Host name	√	x	-	Example: Hostname
devicename	Device model	√	x	-	Example: S5750C-48GT4XS-H
portname	Interface name	√	x	-	Example: GigabitEthernet 0/1
portsname	Interface name abbreviation	√	x	-	Example: Te0/2.5
porttype	Interface type	√	√	1 B	Example: <ul style="list-style-type: none"> When ASCII is used to represent 1, the padding value is 0x31. When hexadecimal is used to represent 1, the padding value is 0x01.
sysmac	Interface MAC address	√	√	6 B	Example: <ul style="list-style-type: none"> ASCII: 2222.2222.2222 Hexadecimal: 0x22 0x22 0x22 0x22 0x22 0x22
slot	Slot ID	√	√	1 B	Example: <ul style="list-style-type: none"> When ASCII is used to represent 0, the padding value is 0x30. When hexadecimal is used to

Keyw ord	Name	Format			Description
		AS CII	Hexadeci mal	Number of Occupied Hexadecimal Bytes	
					represent 0, he padding value is 0x00 .
port	Port number	√	√	1 B	Example: <ul style="list-style-type: none"> ● When ASCII is used to represent 2, the padding value is 0x32. ● When hexadecimal is used to represent 2, the padding value is 0x02.
svlan	Outer VLAN	√	√	2 B	Example: <ul style="list-style-type: none"> ● When ASCII is used to represent 5, the padding value is 0x35. ● When hexadecimal is used to represent 5, the padding value is 0x0005.
cvlan	Inner VLAN	√	√	2 B	Example: <ul style="list-style-type: none"> ● When ASCII is used to represent 5, the padding value is 0x35. ● When hexadecimal is used to represent 5, the padding value is 0x0005.
length	Length of content following the length keyword	×	√	1 B	Example: When hexadecimal is used to represent 5, the padding value is 0x05.

Note: √ indicates that a keyword supports the corresponding encapsulation format, × indicates that a keyword does not support the corresponding encapsulation format, and - indicates meaningless.

Special characters are described as follows:

- % followed by keywords defined above indicates the format of the keywords. When the percent symbol (%) needs to be contained in the input string, enter %%, which will be converted into a single common percent symbol (%) during parsing.
- The backslash (\) indicates an escape character, and the special character following the backslash (\) indicates the special character itself. For example, \\ indicates the backslash (\) and \" indicates the quotation mark (").
- The double quotation marks ("") indicate that data enclosed is encapsulated in string format. Data without or outside the double quotation marks is encapsulated in hexadecimal format.
- Strings in ASCII format can contain 0 to 9, a to z, A to Z, and the following symbols: !, @, #, \$, %, ^, &, *, (,), _, +, |, -, =, \, [], {}, ;, :, ", /, ?, ., ,, <, >, `.
- For characters %\ in ASCII format, add the prefix (\) in front of the characters. In ASCII format, only keywords and several specific symbols are converted and other data remains unchanged.
- If there is no escape character '%' in front of '%' in configuration commands, the key value in the information field must be added behind. Otherwise, the configuration is incorrect and an error is prompted. If the character '\' needs to be configured, enter "\\".
- For strings in hexadecimal format, digits are encapsulated into the option in hexadecimal notation. When hexadecimal data is used, strings begin with 0X or 0x. When the number of valid characters in the hexadecimal data is an odd, add one 0 to the frontmost. When decimal data is used, the data ranges from 0 to 255 and occupies one byte. You can use spaces to enter multiple pieces of decimal data consecutively.
- Blank characters in hexadecimal notation are ignored.

Examples

The following example sets the value of **Interface ID** to the port name and local host MAC address in ASCII format.

```

Hostname> enable
Hostname# configure terminal
Hostname(config)# ipv6 dhcp relay option interface-id format user-defined
"%portname %sysmac"

```

The following example sets the value of **Interface ID** to the local host MAC address in hexadecimal format.

```

Hostname> enable
Hostname# configure terminal
Hostname(config)# ipv6 dhcp relay option interface-id format user-defined %sysmac

```

Notifications

When the padding format of a keyword is incorrect (for example, **%portname** can be padded only in ASCII format), the following notification will be displayed:

```
% Format of Keyword unmatched.
```

When a keyword fails to be matched, the following notification will be displayed:

```
% User defined string include bad keyword.
```

When a keyword fails to be identified, the following notification will be displayed:

```
% DHCP6 RELAY could not parse the user defined string.
```

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.13 ipv6 dhcp relay option mac-str-format

Function

Run the **ipv6 dhcp relay option mac-str-format** command to configure the format of the MAC address in the user-defined Option on a DHCPv6 relay agent.

Run the **no** form of this command to remove this configuration.

The default MAC address format is H.H.H.

Syntax

```
ipv6 dhcp relay option mac-str-format type
```

```
no ipv6 dhcp relay option mac-str-format
```

Parameter Description

type: Format of the MAC address string. The value range is from 1 to 3, and the default value is **1**. **1** indicates the H.H.H format, **2** indicates the H-H-H format, and **3** indicates the H:H:H:H:H:H format.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

This command is used to configure the format of the MAC address in user-defined options.

Examples

The following example sets the format of the MAC address in user-defined options on a DHCPv6 relay agent to H-H-H.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ipv6 dhcp relay option mac-str-format 2
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

N/A

1.14 ipv6 dhcp relay option remote-id enable

Function

Run the **ipv6 dhcp relay option remote-id enable** command to add the **Remote ID** option to DHCPv6 relay packets.

Run the **no** form of this command to remove this configuration.

DHCPv6 relay packets do not carry **Remote-ID** by default.

Syntax

```
ipv6 dhcp relay option remote-id enable
```

```
no ipv6 dhcp relay option remote-id enable
```

Parameter Description

N/A

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

Remote ID is used to uniquely identify a DHCPv6 client. Based on the value of **Remote ID**, a DHCPv6 server performs address assignment, parameter configuration, and prefix delegation (PD). The value of **Remote ID** is customized by the vendor. Generally, this option carries the DHCP Unique Identifier (DUID) and name of the access device.

Examples

The following example adds **Remote ID** to DHCPv6 relay packets.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ipv6 dhcp relay option remote-id enable
```

Notifications

N/A

Common Errors

N/A

Platform Description

N/A

Related Commands

- [ipv6 dhcp relay option remote-id format user-defined](#)

1.15 ipv6 dhcp relay option remote-id format user-defined

Function

Run the **ipv6 dhcp relay option remote-id format user-defined** command to configure the value of **Remote ID** in DHCPv6 relay packets.

Run the **no** form of this command to remove this configuration.

The device DUID is specified in **Remote ID** in DHCPv6 relay packets by default.

Syntax

```
ipv6 dhcp relay option remote-id format user-defined text
```

```
no ipv6 dhcp relay option remote -id format user-defined
```

Parameter Description

text: Value of **Remote ID**. The value is a string of 1 to 255 characters.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

When customizing the format of an option, you can use keywords described in the following table. The format string behind the keywords can be set to the hexadecimal encapsulation format, ASCII encapsulation format, or hexadecimal and ASCII hybrid encapsulation format.

Table 1-1 User-Defined Option Keywords

Keyword	Name	Format			Description
		ASCII	Hexadecimal	Number of Occupied Hexadecimal Bytes	
hostname	Host name	√	×	-	Example: Hostname
devicename	Device model	√	×	-	Example: S5750C-48GT4XS-H
portname	Interface name	√	×	-	Example: GigabitEthernet 0/1
portsname	Interface name abbreviation	√	×	-	Example: Te0/2.5
porttype	Interface type	√	√	1 B	Example: <ul style="list-style-type: none"> When ASCII is used to represent 1, the padding value is 0x31. When hexadecimal is used to represent 1, the padding value is 0x01.
sysmac	Interface MAC address	√	√	6 B	Example: <ul style="list-style-type: none"> ASCII: 2222.2222.2222 Hexadecimal: 0x22 0x22 0x22 0x22 0x22 0x22
slot	Slot ID	√	√	1 B	Example: <ul style="list-style-type: none"> When ASCII is used to represent 0, the padding value is 0x30. When hexadecimal is used to represent 0, the padding value is 0x00.
port	Port number	√	√	1 B	Example: <ul style="list-style-type: none"> When ASCII is used to represent 2, the padding value is 0x32. When hexadecimal is used to represent 2, the padding value is 0x02.
svlan	Outer VLAN	√	√	2 B	Example: <ul style="list-style-type: none"> When ASCII is used to represent 5, the

Keyword	Name	Format			Description
		ASCII	Hexadecimal	Number of Occupied Hexadecimal Bytes	
					padding value is 0x35 . <ul style="list-style-type: none"> When hexadecimal is used to represent 5, the padding value is 0x0005.
cvlan	Inner VLAN	√	√	2 B	Example: <ul style="list-style-type: none"> When ASCII is used to represent 5, the padding value is 0x35. When hexadecimal is used to represent 5, the padding value is 0x0005.
length	Length of content following the length keyword	x	√	1 B	Example: When hexadecimal is used to represent 5, the padding value is 0x05 .

Note: √ indicates that a keyword supports the corresponding encapsulation format, x indicates that a keyword does not support the corresponding encapsulation format, and - indicates meaningless.

Special characters are described as follows:

- % followed by keywords defined above indicates the format of the keywords. When the percent symbol (%) needs to be contained in the input string, enter %, which will be converted into a single common percent symbol (%) during parsing.
- The backslash (\) indicates an escape character, and the special character following the backslash (\) indicates the special character itself. For example, \\ indicates the backslash (\) and \" indicates the quotation mark (").
- The double quotation marks (") indicate that data enclosed is encapsulated in string format. Data without or outside the double quotation marks is encapsulated in hexadecimal format.
- Strings in ASCII format can contain 0 to 9, a to z, A to Z, and the following symbols: !, @, #, \$, %, ^, &, *, (,), _, +, |, -, =, \, [], {}, ;, :, ", /, ?, ., ,, <, >, `.
- For characters \% in ASCII format, add the prefix (\) in front of the characters. In ASCII format, only keywords and several specific symbols are converted and other data remains unchanged.
- If there is no escape character '%' in front of '%' in configuration commands, the key value in the information field must be added behind. Otherwise, the configuration is incorrect and an error is prompted. If the character \ needs to be configured, enter "\\".

- For strings in hexadecimal format, digits are encapsulated into the option in hexadecimal notation. When hexadecimal data is used, strings begin with 0X or 0x. When the number of valid characters in the hexadecimal data is an odd, add one 0 to the frontmost. When decimal data is used, the data ranges from 0 to 255 and occupies one byte. You can use spaces to enter multiple pieces of decimal data consecutively.
- Blank characters in hexadecimal notation are ignored.

Examples

The following example sets the value of **Remote ID** to the device name and local host MAC address in ASCII format.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ipv6 dhcp relay option remote-id format user-defined
"%devicename %sysmac"
```

The following example sets the value of **Remote ID** to the local host MAC address in hexadecimal format.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ipv6 dhcp relay option remote-id format user-defined %sysmac
```

Notifications

When the padding format of a keyword is incorrect (for example, **%portname** can be padded only in ASCII format), the following notification will be displayed:

```
% Format of Keyword unmatched.
```

When a keyword fails to be matched, the following notification will be displayed:

```
% User defined string include bad keyword.
```

When a keyword fails to be identified, the following notification will be displayed:

```
% DHCP6 RELAY could not parse the user defined string.
```

Common Errors

N/A

Platform Description

N/A

Related Commands

- [ipv6 dhcp relay option remote-id enable](#)

1.16 ipv6 dhcp relay source

Function

Run the **ipv6 dhcp relay source** command to configure the source interface of a DHCPv6 relay agent.

Run the **no** form of this command to remove this configuration.

No source interface is configured for a DHCP relay agent by default.

Syntax

```
ipv6 dhcp relay source { source-ip-address | gateway-address } { ipv6-address | interface-type interface-number }
```

```
no ipv6 dhcp relay source
```

Parameter Description

source-ip-address: Sets the source IP address.

gateway-address: Sets the gateway address.

ipv6-address: IPv6 address of the source interface.

interface-type interface-number: Source interface type and number.

Command Modes

Global configuration mode

Interface configuration mode

Default Level

14

Usage Guidelines

The source interface definition function supports the following types of addresses:

- Source IP address: The source IP address field in DHCPv6 relay packets is changed.
- Gateway address: The source IP address and link address fields in DHCPv6 relay packets are changed.

The source interface definition function can be configured in global configuration mode and interface configuration mode. The source interface definition type in interface configuration mode is prior to that in global configuration mode. In the same configuration mode, the last configured source interface definition type prevails.

⚠ Caution

- When the source interface definition parameter uses IPv6 address, it cannot be set to a multicast address, local link address, site address, unconfigured address (with all 0s), or local loopback address.
 - When the source interface definition parameter is the interface index, the interface must be an L3 interface. When the specified interface changes to a non-L3 interface, the configuration of the source interface definition function is deleted from this interface.
 - When the source interface definition parameter is the interface index, if multiple IPv6 addresses are configured for the specified interface, the minimum global unicast address is used. If no global unicast address is configured for the interface, the current configuration does not take effect and packets are forwarded in default manner.
-

Examples

The following example enables the source interface definition function on SVI 1, sets the definition type to gateway address, and sets the definition parameter type to IPv6 address.

```
Hostname> enable
```



```
Hostname# configure terminal
Hostname(config)# interface vlan 1
Hostname(config-if-VLAN 1)# ipv6 dhcp relay source gateway-address 1000::1
```

The following example enables the source interface definition function on all interfaces, sets the definition type to source IP address, and sets the definition parameter type to interface index.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ipv6 dhcp relay source source-ip-address loopback 0
```

Notifications

When the source interface definition parameter is IPv6 address, but a multicast address, site address, unconfigured address, loopback address, or local link address is configured, the following notification will be displayed:

```
input invalid ipv6 address.
```

When the source interface definition parameter is interface index, but the specified interface is a non-L3 interface, the following notification will be displayed:

```
The specify interface(ifx_id) is not in layer3.
```

Common Errors

N/A

Platform Description

N/A

Related Commands

- [show ipv6 dhcp relay source](#)

1.17 ipv6 dhcp server

Function

Run the **ipv6 dhcp server** command to enable the DHCPv6 Server function on an interface.

Run the **no** form of this command to disable this feature.

The DHCPv6 Server function is disabled by default.

Syntax

```
ipv6 dhcp server pool-name [ rapid-commit ] [ preference preference-value ]
```

```
no ipv6 dhcp server
```

Parameter Description

pool-name: DHCPv6 address pool name.

rapid-commit: Allows two-way message exchanges.

preference *preference-value*: Configures the priority of the ADVERTISE message. The range is from 0 to 255, and the default value is 0.

Command Modes

Interface configuration mode

Default Level

14

Usage Guidelines

This function can be configured only on L3 interfaces.

After the **rapid-commit** parameter is configured, a DHCPv6 server can use the two-way message exchange mechanism to assign an address prefix and other configurations to a DHCPv6 client. That is, if the SOLICIT message from a client contains the **Rapid-Commit** option, the DHCPv6 server directly returns a REPLY message.

If **preference** is set to a non-zero value, the ADVERTISE message sent by the DHCPv6 server contains the **Preference** option. The **Preference** option affects DHCPv6 server selection of a client. A larger *preference-value* value indicates a higher priority. If a client receives an ADVERTISE message in which the **Preference** option is set to **255**, the client immediately sends a REQUEST message to the DHCPv6 server to obtain configurations.

The DHCPv6 Server, DHCPv6 Client, and DHCPv6 Relay functions are mutually exclusive, and only one function can be configured on an interface at a time.

Examples

The following example enables the DHCPv6 Server function on GigabitEthernet 0/1 and creates a DHCPv6 address pool named **pool1**.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# interface gigabitethernet 0/1
Hostname(config-if-GigabitEthernet 0/1)# ipv6 dhcp server pool1
```

Notifications

When the DHCPv6 Server function fails to be enabled, the following notification will be displayed:

```
Failed to start DHCPv6 interface, please try again.
```

When the configured address pool name is too long, the following notification will be displayed:

```
Pool name length should not be larger than 31.
```

When initialization is not completed due to insufficient memory, the following notification will be displayed:

```
Failed to initiate DHCPv6 interface, please try again
```

Common Errors

N/A

Platform Description

N/A

Related Commands

- [show ipv6 dhcp interface](#)

1.18 ipv6 local pool

Function

Run the **ipv6 local pool** command to configure a local prefix pool for the PD service of a DHCPv6 server.

Run the **no** form of this command to remove this configuration.

No local prefix pool is configured for the PD service of a DHCPv6 server by default.

Syntax

```
ipv6 local pool pool-name prefix/prefix-length assigned-length
```

```
no ipv6 local pool pool-name
```

Parameter Description

pool-name: Name of local prefix pool.

prefix/prefix-length: Prefix and prefix length.

assigned-length: Length of the prefix assigned to a DHCPv6 client. The range is from 0 to 128.

Command Modes

Global configuration mode

Default Level

14

Usage Guidelines

This command is used to create a local prefix pool. If a DHCPv6 server needs to implement local PD, run the **prefix-delegation pool** command to specify a local prefix pool. Then, the DHCPv6 server assigns prefixes from the specified local prefix pool.

Examples

The following example sets the name of the local prefix pool for PD of a DHCPv6 server to **client-prefix-pool**, sets the prefix to **2001::db8::/64**, and sets the length of prefixes to be assigned to clients to **80**.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ipv6 local pool client-prefix-pool 2001::db8::/64 80
```

Notifications

When the length of the specified prefix pool name exceeds the limit, the following notification will be displayed:

```
Maximum pool name length is 31.
```

When the length of the specified prefix exceeds the limit, the following notification will be displayed:

```
Prefix length must be in the range [1,128] or [128, 128].
```

When the length of a prefix assigned to a client exceeds the limit (less than the prefix length of the local prefix pool or greater than the address length), the following notification will be displayed:

```
Assign length must be in the range [x,128] or [128,128].
```

When the difference between the length of the specified prefix and that of a prefix assigned to a client exceeds 16 bits, the following notification will be displayed:

```
Assign length minus prefix length must be not more than 16.
```

Common Errors

N/A

Platform Description

N/A

Related Commands

- [show ipv6 local pool](#)
- [prefix-delegation pool](#)

1.19 option52

Function

Run the **option52** command to configure the IPv6 address of a Control and Provisioning of Wireless Access Points (CAPWAP) access controller (AC) specified on a DHCPv6 server.

Run the **no** form of this command to remove this configuration.

The AC IPv6 address information is not configured by default.

Syntax

```
option52 ipv6-address
```

```
no option52 ipv6-address
```

Parameter Description

ipv6-address: IPv6 address of a CAPWAP AC.

Command Modes

DHCPv6 address pool configuration mode

Default Level

14

Usage Guidelines

You can run this command multiple times to specify multiple IPv6 addresses for a CAPWAP AC. A new CAPWAP AC IPv6 address does not overwrite an old one. A maximum of 10 IPv6 addresses can be configured.

Examples

The following example sets the IPv6 address of the CAPWAP AC specified on a DHCPv6 server to **2008:1::1**.

```
Hostname> enable
Hostname# configure terminal
```

```
Hostname(config)# ipv6 dhcp pool pool1
Hostname(config-dhcp)# option52 2008:1::1
```

Notifications

When the number of configured addresses in Option 52 exceeds the limit, the following notification will be displayed:

```
Reach dhcpv6 option52 address limit for each pool, 10.
```

When Option 52 address configuration fails, the following notification will be displayed:

```
Failed to configure option52 address, please try again.
```

Common Errors

N/A

Platform Description

N/A

Related Commands

- [show ipv6 dhcp pool](#)

1.20 prefix-delegation

Function

Run the **prefix-delegation** command to configure prefixes for statically bound addresses on a DHCPv6 server.

Run the **no** form of this command to remove this configuration.

No prefix is configured for a statically bound address on a DHCPv6 server by default.

Syntax

```
prefix-delegation ipv6-address/prefix-length client-DUID [ lifetime { valid-lifetime | infinite } { preferred-lifetime | infinite } ]
```

```
no prefix-delegation ipv6-prefix/prefix-length client-DUID [ lifetime { valid-lifetime | infinite } { preferred-lifetime | infinite } ]
```

Parameter Description

ipv6-address/prefix-length: IPv6 address or prefix length.

client-DUID: DUID of a client.

lifetime: Sets the valid time of an address prefix to be assigned to a client.

valid-lifetime: Valid time of a prefix to be assigned to a client, in seconds. The range is from 60 to 4294967295. The default value is **3600**, that is, 1 hour.

preferred-lifetime: Time during which a prefix is still preferentially assigned to a client, in seconds. The range is from 60 to 4294967295. The default value is **3600**, that is, 1 hour.

infinite: Configures permanent lease.

Command Modes

DHCPv6 address pool configuration mode

Default Level

14

Usage Guidelines

You can run this command to manually configure a prefix list for an IA_PD of a client and specify the valid time of these prefixes.

The *client-DUID* parameter specifies the client to which an address prefix is to be assigned. The address prefix will be assigned to the first IA_PD of the client.

After receiving a REQUEST message for an address prefix from the client, the DHCPv6 server checks whether a static binding is available. If yes, the DHCPv6 server directly returns the static binding. If not, the DHCPv6 server assigns an address prefix from another prefix source.

Examples

The following example sets the address prefix to be assigned to a client (with the DUID of 0003000100d0f82233ac) in DHCPv6 address pool pool1 to **2008:2::/64**.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)#ipv6 dhcp pool pool1
Hostname(config-dhcp)# prefix-delegation 2008:2::/64 0003000100d0f82233ac
```

Notifications

When the specified DUID is incorrect, the following notification will be displayed:

```
DUID string length must not be odd number or exceed 128.
```

When the number of configured prefixes for statically bound addresses on a DHCPv6 server exceeds the limit, the following notification will be displayed:

```
Reach dhcpv6 static IAPD binding limit 1024.
```

When prefixes for statically bound addresses fail to be configured, the following notification will be displayed:

```
Failed to configure prefix delegation, please try again.
```

Common Errors

N/A

Platform Description

N/A

Related Commands

- [show ipv6 dhcp pool](#)

1.21 prefix-delegation pool

Function

Run the **prefix-delegation pool** command to configure a local prefix pool on a DHCPv6 server.

Run the **no** form of this command to remove this configuration.

No local prefix pool is configured for a DHCPv6 server by default.

Syntax

```
prefix-delegation pool pool-name [ lifetime { valid-lifetime | infinite } { preferred-lifetime | infinite } ]
```

```
no prefix-delegation pool pool-name
```

Parameter Description

pool-name: User-defined name of a local prefix pool.

lifetime: Sets the valid time of a prefix to be assigned to a client.

valid-lifetime: Valid time of a prefix to be assigned to a client, in seconds. The range is from 60 to 4294967295. The default value is **3600**, that is, 1 hour.

preferred-lifetime: Time during which a prefix is still preferentially assigned to a client, in seconds. The range is from 60 to 4294967295. The default value is **3600**, that is, 1 hour.

infinite: Configures permanent lease.

Command Modes

DHCPv6 address pool configuration mode

Default Level

14

Usage Guidelines

This command is used to configure a prefix pool for a DHCPv6 server to assign prefixes to clients. You can run the **ipv6 local pool** command to create a prefix pool.

When receiving a prefix request from a client, the DHCPv6 server selects an available prefix from the prefix pool and assigns the prefix to the client. When the client no longer needs this prefix, the DHCPv6 server reclaims it.

Examples

The following example configures a local prefix pool named **client-prefix-pool** for clients in DHCPv6 address pool pool1, sets the valid time for a client to use an assigned prefix to 2000s, and sets the time during which a prefix is still preferentially assigned to a client to 1000s.

```
Hostname> enable
Hostname# configure terminal
Hostname(config)# ipv6 dhcp pool pool1
Hostname(config-dhcp)# prefix-delegation pool client-prefix-pool lifetime 2000
1000
```

Notifications

When the value of *valid-lifetime* is smaller than that of *preferred-lifetime*, the following notification will be displayed:

```
Preferred lifetime must not exceed valid lifetime.
```

When prefixes for statically bound addresses fail to be configured, the following notification will be displayed:

```
Failed to configure prefix delegation, please try again.
```

Common Errors

N/A

Platform Description

N/A

Related Commands

- [show ipv6 dhcp pool](#)

1.22 show ipv6 dhcp

Function

Run the **show ipv6 dhcp** command to display the DUID of a DHCPv6 device.

Syntax

```
show ipv6 dhcp
```

Parameter Description

N/A

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

The DHCPv6 server, client, and relay on the same device share one DUID.

Examples

The following example displays the DUID of the current device.

```
Hostname> enable
Hostname# show ipv6 dhcp
This device's DHCPv6 unique identifier(DUID): 00:03:00:01:00:d0:f8:22:33:b0
```

Table 1-1 Output Fields of the **show ipv6 dhcp** Command

Field	Description
-------	-------------

This device's DHCPv6 unique identifier (DUID)	Unique identifier of a DHCPv6 device
---	--------------------------------------

Notifications

N/A

Platform Description

N/A

1.23 show ipv6 dhcp binding

Function

Run the **show ipv6 dhcp binding** command to display address bindings on a DHCPv6 server.

Syntax

```
show ipv6 dhcp binding [ ipv6-address ]
```

Parameter Description

ipv6-address: IPv6 address or prefix.

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

If the *ipv6-address* parameter is not configured, all bindings between prefixes and IA_NA addresses dynamically assigned to clients and clients are displayed. If the *ipv6-address* parameter is configured, only bindings of the specified address are displayed.

Examples

The following example displays all address bindings on a DHCPv6 server.

```

Hostname> enable
Hostname# show ipv6 dhcp binding
Client  DUID: 00:03:00:01:00:d0:f8:22:33:ac
      IAPD: iaid 0, T1 1800, T2 2880
      Prefix: 2001:20::/72
      preferred lifetime 3600, valid lifetime 3600
      expires at Jan 1 2008 2:23 (3600 seconds)

```

Table 1-1 Output Fields of the show ipv6 dhcp binding Command

Field	Description
Client DUID	DUID of a client.

IAPD	Bound IA type, which can also be IA_NA. It includes the following information: <ul style="list-style-type: none"> ● Iaid: IA ID. ● T1: T1 value of the IA. A client needs to send a RENEW message to update the address lease after T1. ● T2: T2 value of the IA. If the update is not complete within T2, the client needs to send another RENEW message.
Prefix	Prefix assigned to a client.
preferred lifetime	Time during which the prefix is still preferentially assigned to a client.
valid lifetime	Valid time of the prefix.
expires at	Time when the prefix expires.

Notifications

N/A

Platform Description

N/A

1.24 show ipv6 dhcp conflict**Function**

Run the **show ipv6 dhcp conflict** command to display conflicted addresses on a DHCPv6 server.

Syntax

```
show ipv6 dhcp conflict
```

Parameter Description

N/A

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

This command is used to display all conflicted addresses on a DHCPv6 server.

Examples

The following example displays conflicted addresses on a DHCPv6 server.

```

Hostname> enable
Hostname# show ipv6 dhcp conflict
2008:50::2    declined
2108:50::2    declined

```

```
2008:50::3    declined
2008:50::4    declined
2108:50::4    declined
2008:50::5    declined
```

Table 1-1 Output Fields of the show ipv6 dhcp conflict Command

Field	Description
2008:50::2 declined	Conflict address

Notifications

N/A

Platform Description

N/A

1.25 show ipv6 dhcp interface

Function

Run the **show ipv6 dhcp interface** command to display DHCPv6 interfaces.

Syntax

```
show ipv6 dhcp interface [ interface-type interface-number ]
```

Parameter Description

interface-type interface-number: Interface type and number.

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

If the *interface-type interface-number* parameter is not configured, all DHCPv6 interfaces are displayed. If the *interface-type interface-number* parameter is configured, only the specified interface is displayed.

Examples

The following example displays all interfaces on a DHCPv6 server.

```
Hostname> enable
Hostname# show ipv6 dhcp interface
VLAN 1 is in server mode
  Server pool: dhcp-pool
  Rapid-Commit: disable
```

Table 1-1 Output Fields of the show ipv6 dhcp interface Command

Field	Description
xxx is in yyy mode	The xxx interface works in yyy mode. The values of yyy include: <ul style="list-style-type: none"> ● Client: The interface works in client mode. ● Relay: The interface works in relay mode. ● Server: The interface works in server mode.
Server pool	When the DHCPv6 Server function is enabled on an interface, the address pool name of the interface is displayed.
Rapid-Commit	Indicates whether the Rapid-Commit option is enabled. The values include: <ul style="list-style-type: none"> ● enable: Two-way message exchange is enabled. ● disable: Two-way message exchange is disabled.

Notifications

N/A

Platform Description

N/A

1.26 show ipv6 dhcp pool

Function

Run the **show ipv6 dhcp pool** command to display DHCPv6 address pools.

Syntax

```
show ipv6 dhcp pool [ pool-name ]
```

Parameter Description

pool-name: User-defined name of a DHCPv6 address pool.

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

If the *pool-name* parameter is not configured, all DHCPv6 address pools are displayed. If the *pool-name* parameter is configured, only the specified address pool is displayed.

Examples

The following example displays all DHCPv6 address pools.

```
Hostname> enable
```

```

Hostname# show ipv6 dhcp pool
DHCPv6 pool: dhcp-pool
  DNS server: 2011:1::1
  DNS server: 2011:1::2
  Domain name: example.com

```

Table 1-1 Output Fields of the show ipv6 dhcp pool Command

Field	Description
DHCPv6 pool	User-defined name of DHCPv6 address pool
DNS Server	DNS server address to be assigned to a client
Domain name	Domain name to be assigned to a client

Notifications

N/A

Platform Description

N/A

1.27 show ipv6 dhcp relay agent

Function

Run the **show ipv6 dhcp relay agent** command to display source interfaces on a DHCPv6 relay agent.

Syntax

```
show ipv6 dhcp relay agent { ipv6-address | * }
```

Parameter Description

ipv6-address: IPv6 address or prefix. When this parameter is configured, the source interface of a specified link address is displayed.

*: All source interfaces and the corresponding link addresses.

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

This command is used to display the source interfaces and the corresponding link addresses in request packets received by a DHCPv6 relay agent.

Examples

The following example displays all source interfaces and corresponding link addresses on a DHCPv6 relay agent.

```

Hostname> enable
Hostname# show ipv6 dhcp relay agent *
Link local address          12 interface
-----

```

Table 1-1 Output Fields of the `show ipv6 dhcp relay agent` Command

Field	Description
Link local address	Link address
12 interface	Index of an L2 interface that receives request packets

Notifications

N/A

Platform Description

N/A

1.28 show ipv6 dhcp relay destination

Function

Run the **show ipv6 dhcp relay destination** command to display destination addresses on a DHCPv6 relay agent.

Syntax

```
show ipv6 dhcp relay destination { all | interface-type interface-number }
```

Parameter Description

all: Displays all configured destination addresses and interfaces.

interface-type interface-number: Type and number of the interface whose configured destination addresses and interfaces are displayed.

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

This command is used to display the destination address and interface for forwarding DHCPv6 packets received from clients on an interface with the DHCPv6 Relay service enabled.

Examples

The following example displays the destination addresses of all DHCPv6 relay agents.

```

Hostname> enable
Hostname# show ipv6 dhcp relay destination all
Interface:VLAN 1
Destination address(es)          Output Interface
3001::2
ff02::1:2                       VLAN 2

```

Table 1-1 Output Fields of the `show ipv6 dhcp relay destination` Command

Field	Description
Interface	Interface on which the DHCPv6 Relay service is enabled
Destination address(es)	Destination address
Output Interface	Outbound interface of packets

Notifications

N/A

Platform Description

N/A

1.29 show ipv6 dhcp relay source

Function

Run the **show ipv6 dhcp relay source** command to display the source interface definition configuration on a DHCPv6 relay agent.

Syntax

```
show ipv6 dhcp relay source
```

Parameter Description

N/A

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

N/A

Examples

The following example displays the source interface definition configuration of the DHCPv6 relay on the current device.

```

Hostname> enable
Hostname#show ipv6 dhcp relay source
Interface-Name          Source-Intf-Type      Source-Intf-Parameter
Global                  Source Address       VLAN 10
VLAN 1                  Gateway Address      1000::1
GigabitEthernet 0/7    Source Address       3000::1:1

```

Table 1-1 Output Fields of the show ipv6 dhcp relay source Command

Field	Description
Interface-Name	Name of the interface that is configured with the source interface definition function. It is fixed to Global in global configuration mode.
Source-Intf-Type	Source interface definition type.
Source-Intf-Parameter	Source interface definition parameter.

Notifications

N/A

Platform Description

N/A

1.30 show ipv6 dhcp relay statistics

Function

Run the **show ipv6 dhcp relay statistics** command to display statistics of different types of packets on a DHCPv6 relay agent.

Syntax

```
show ipv6 dhcp relay statistics
```

Parameter Description

N/A

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

N/A

Examples

The following example displays statistics of different types of packets on a DHCPv6 relay agent.

```

Hostname> enable
Hostname# show ipv6 dhcp relay statistics
Packets dropped          : 2
  Error                  : 2
  Excess of rate limit   : 0
Packets received        : 28
  SOLICIT                : 0
  REQUEST                : 0
  CONFIRM                : 0
  RENEW                  : 0
  REBIND                 : 0
  RELEASE                : 0
  DECLINE                : 0
  INFORMATION-REQUEST   : 14
  RELAY-FORWARD          : 0
  RELAY-REPLY            : 14
Packets sent             : 16
  ADVERTISE              : 0
  RECONFIGURE            : 0
  REPLY                  : 8
  RELAY-FORWARD          : 8
  RELAY-REPLY            : 0

```

Table 1-1 Output Fields of the show ipv6 dhcp relay statistics Command

Field	Description
Packets dropped	Total number of unprocessed packets discarded
Error	Number of error packets discarded
Excess of rate limit	Number of packets discarded due to an insufficient processing capacity of the device
Packets received	Total number of normal DHCPv6 packets received
SOLICIT	Number of SOLICIT packets
REQUEST	Number of REQUEST packets
CONFIRM	Number of CONFIRM packets
RENEW	Number of RENEW packets
REBIND	Number of REBIND packets
RELEASE	Number of RELEASE packets
DECLINE	Number of DECLINE packets

Field	Description
INFORMATION-REQUEST	Number of INFORMATION-REQUEST packets
RELAY-FORWARD	Number of RELAY-FORWARD packets
RELAY-REPLY	Number of RELAY-REPLY packets
Packets sent	Total number of normal DHCPv6 packets sent
ADVERTISE	Number of ADVERTISE packets
RECONFIGURE	Number of RECONFIGURE packets
REPLY	Number of REPLY packets
RELAY-FORWARD	Number of RELAY-FORWARD packets
RELAY-REPLY	Number of RELAY-REPLY packets

Notifications

N/A

Platform Description

N/A

1.31 show ipv6 dhcp server statistics

Function

Run the **show ipv6 dhcp server statistics** command to displays DHCPv6 server statistics.

Syntax

```
show ipv6 dhcp server statistics
```

Parameter Description

N/A

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

N/A

Examples

The following example displays DHCPv6 server statistics.

```

Hostname> enable
Hostname# show ipv6 dhcp server statistics
DHCPv6 server statistics:
Packet statistics:
DHCPv6 packets received:          7
Solicit received:                  7
Request received:                  0
Confirm received:                  0
Renew received:                    0
Rebind received:                   0
Release received:                  0
Decline received:                  0
Relay-forward received:            0
Information-request received:      0
Unknown message type received:    0
Error message received:            0
DHCPv6 packet sent:               0
Advertise sent:                    0
Reply sent:                        0
Relay-reply sent:                  0
Send reply error:                  0
Send packet error:                0
Binding statistics:
Bindings generated:                0
IAPD assigned:                    0
IANA assigned:                     0
Configuration statistics:
DHCPv6 server interface:          1
DHCPv6 pool:                       0
DHCPv6 iapd binding:              0

```

Table 1-1 Output Fields of the show ipv6 dhcp server statistics Command

Field	Description
Packet statistics	Statistics about the packet quantity
DHCPv6 packets received	Number of packets received
Solicit received	Number of SOLICIT packets received
Request received	Number of REQUEST packets received
Confirm received	Number of CONFIRM packets received
Renew received	Number of RENEW packets received
Rebind received	Number of REBIND packets received
Release received	Number of RELEASE packets received
Decline received	Number of DECLINE packets received

Relay-forward received	Number of RELAY-FORWARD packets received
Information-request received	Number of INFORMATION-REQUEST packets received
Unknown message type received	Number of unknown packets received
Error message received	Number of error packets received
DHCPv6 packet sent	Number of packets sent
Advertise sent	Number of ADVERTISE packets sent
Reply sent	Number of REPLY packets sent
Relay-reply sent	Number of RELAY-REPLY packets sent
Send reply error	Number of error response packets sent
Send packet error	Number of error packets sent
Binding statistics	Statistics about bindings <ul style="list-style-type: none"> ● Bindings generated: Number of generated bindings ● IAPD assigned: Number of assigned IA_PDs ● IANA assigned: Number of assigned IA_NAs
Bindings generated	Number of assigned entries
IAPD assigned	Number of prefix entries
IANA assigned	Number of address entries
Configuration statistics	Statistics about configurations <ul style="list-style-type: none"> ● DHCPv6 Server interface: Number of interfaces enabled with the DHCPv6Server function ● DHCPv6 pool: Number of configured pools ● DHCPv6 iapd binding: Number of configured prefixes for statically bound addresses

Notifications

N/A

Platform Description

N/A

1.32 show ipv6 local pool**Function**

Run the **show ipv6 local pool** command to display local prefix pool configuration and usage on the current device.

Syntax

show ipv6 local pool [*pool-name*]

Parameter Description

pool-name: Name of the local prefix pool.

Command Modes

All modes except the user EXEC mode

Default Level

14

Usage Guidelines

This command is used to display local prefix pool configuration and usage on the current device.

Examples

The following example displays configuration and usage of all local prefix pools.

```

Hostname> enable
Hostname# show ipv6 local pool
Pool                Prefix                Free                In use
client-prefix-pool  2001:db8::/64        65536                0
    
```

Table 1-1Output Fields of the show ipv6 local pool Command

Field	Description
Pool	Name of the local prefix pool
Prefix	Prefix and prefix length
Free	Available prefixes
In use	Prefixes being used

The following example displays the local prefix pool for the address pool client-prefix-pool.

```

Hostname# show ipv6 local pool client-prefix-pool
Prefix is 2001:db8::/64 assign /80 prefix
1 entries in use, 65535 available
Prefix                Interface
2001:db8::/80        GigabitEthernet
0/0
    
```

Table 1-2Output Fields of the show ipv6 local pool Command

Field	Description
Prefix	Assigned prefix and prefix length.
x entries in use	x prefixes are being used.

y available	y prefixes are available.
Interface	Interface over which a prefix is assigned.

Notifications

N/A

Platform Description

N/A