DHCP Commands

Note All commands applicable for the Cisco NCS 5500 Series Router are also supported on the Cisco NCS 540 Series Router that is introduced from Cisco IOS XR Release 6.3.2. References to earlier releases in Command History tables apply to only the Cisco NCS 5500 Series Router.

Note

- Starting with Cisco IOS XR Release 6.6.25, all commands applicable for the Cisco NCS 5500 Series Router are also supported on the Cisco NCS 560 Series Routers.
- Starting with Cisco IOS XR Release 6.3.2, all commands applicable for the Cisco NCS 5500 Series Router are also supported on the Cisco NCS 540 Series Router.
- References to releases before Cisco IOS XR Release 6.3.2 apply to only the Cisco NCS 5500 Series Router.
- Cisco IOS XR Software Release 7.0.1 specific updates are not applicable for the following variants of Cisco NCS 540 Series Routers:
  - N540-28Z4C-SYS-A
  - N540-28Z4C-SYS-D
  - N540X-16Z4G8Q2C-A
  - N540X-16Z4G8Q2C-D
  - N540X-16Z8Q2C-D
  - N540-12Z20G-SYS-A
  - N540-12Z20G-SYS-D
  - N540X-12Z16G-SYS-A
  - N540X-12Z16G-SYS-D

This chapter describes the commands used to configure and monitor the Direct Host Control Protocol (DHCP) on Cisco NCS 5500 Series routers.

For detailed information about ARP concepts, configuration tasks, and examples, refer to the *IP Addresses and Services Configuration Guide for Cisco NCS 5500 Series RoutersIP Addresses and Services Configuration Guide for Cisco NCS 540 Series RoutersIP Addresses and Services Configuration Guide for Cisco NCS 560 Series Routers*.

allow-client-id-change

To ensure the client has only one binding with the DHCP IPv4 server, use the **allow-client-id-change** command in DHCP IPv4 Server Profile mode.

allow-client-id-change

Command Default No default behaviour or values

Command Modes DHCP IPv4 Serevr Profile Configuration Mode

Command History

Release	Modification
Release 5.3.1	This command was introduced.

Usage Guidelines Not applicable

The following example shows how to use the **allow-client-id-change** command:

```
Router# configure

Router(config)# dhcp ipv4
Router(config-dhcpv4)# profile ISP1 server
Router(config-dhcpv4-server-profile)# allow-client-id-change
Router(config-dhcpv4-server-profile)# commit
Router(config-dhcpv4--server-profile)# exit
```

clear dhcp ipv4 client

To clear the DHCP client binding information configured on a given interface and set the binding information again, use the **clear dhcp ipv4 client** command in XR EXEC mode.

clear dhcp ipv4 client *interface-name interface-number*

Syntax Description

interface-name	Specifies DHCP IPv4 client enabled interface name.
interface-number	Specifies DHCP IPv4 client enabled interface number.

Command Default

No default behavior or values

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

Use the **clear dhcp ipv4 client** command to clear the DHCP client binding information for the specified interface.

Task ID

Task ID	Operations
IP-Services	Execution

Examples

The following example shows how to clear the DHCP client binding information:

```
Router# clear dhcp ipv4 client mgmtEth 0/0/CPU0/0
Fri Jun  6 08:24:14.558 UTC
RP/0/0/CPU0:ios#show dhcp ipv4 client
Fri Jun  6 08:24:17.377 UTC

    Interface name         IP Address      Binding State         Lease Time Rem
----------------------    ------------    ---------------    ----------------------
MgmtEth0/0/CPU0/0          11.11.11.5       BOUND             3598 secs (00:59:58)

RP/0/0/CPU0:ios#show dhcp ipv4 client mgmtEth 0/0/CPU0/0 statistics
Fri Jun  6 08:24:19.397 UTC

Client Interface name           : MgmtEth0/0/CPU0/0
-------------------------------------------------
     CLIENT COUNTER(s)          |        VALUE
-------------------------------------------------
Num discovers sent              :          1
Num requests sent               :          1
Num releases sent               :          1
Num offers received             :          1
Num acks received               :          1
-------------------------------------------------
```

clear dhcp ipv4 client statistics

To clear DHCP client binding statistics information for a given interface, use the **clear dhcp ipv4 client statistics** command in XR EXEC mode.

clear dhcp ipv4 client <*interface-name*> *interface-number* **statistics**

Syntax Description

interface-name	Specifies DHCP IPv4 client enabled interface name.
interface-number	Specifies DHCP IPv4 client enabled interface number.
statistics	Clears DHCP IPv4 statistical information for the specified interface.

Command Default

No default behavior or values

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

Use the **clear dhcp ipv4 client statistics** command to clear the DHCP client binding statistics information for the specified interface.

Task ID

Task ID	Operations
IP-Services	Execution

Examples

The following example shows how to clear the DHCP client binding statistics information:

```
RP/0/0/CPU0:ios#show dhcp ipv4 client mgmtEth 0/0/CPU0/0 statistics
Fri Jun  6 08:23:04.822 UTC

Client Interface name           : MgmtEth0/0/CPU0/0
-----------------------------------------------
     CLIENT COUNTER(s)          |        VALUE
-----------------------------------------------
Num discovers sent              :         11
Num requests sent               :          3
Num releases sent               :          2
Num offers received             :          3
Num acks received               :          3
-----------------------------------------------

RP/0/0/CPU0:ios#clear dhcp ipv4 client mgmtEth 0/0/CPU0/0 statistics
Fri Jun  6 08:23:11.852 UTC
RP/0/0/CPU0:ios#show dhcp ipv4 client mgmtEth 0/0/CPU0/0 statistics
Fri Jun  6 08:23:13.682 UTC

Client Interface name           : MgmtEth0/0/CPU0/0
```

```
-------------------------------------------------
     CLIENT COUNTER(s)          |        VALUE
-------------------------------------------------
-------------------------------------------------

RP/0/0/CPU0:ios#show dhcp ipv4 client
Fri Jun  6 08:23:16.862 UTC

    Interface name         IP Address      Binding State         Lease Time Rem
----------------------    ------------    ---------------    ----------------------
MgmtEth0/0/CPU0/0          11.11.11.5       BOUND             3562 secs (00:59:22)
```

Related Commands

Commands	Description
show dhcp ipv4 client	This command displays DHCP IPv4 client information.
clear dhcp ipv4 proxy statistics	This command clears DHCP proxy binding statistics information for a given interface.
clear dhcp ipv4 proxy statistics	This command clears DHCP server binding statistics information for a given interface.

clear dhcp ipv4 server binding

To clear all client bindings in server, use the **clear dhcp ipv4 server binding** command in XR EXEC mode.

clear dhcp ipv4 server binding [**location** *node-ID*] [**interface** *type interface-path-ID*] [**mac-address** *address*]

Syntax Description

location *node-ID*	Clears detailed client binding information for a specified node.
interface *type interface-path-ID*	Clears client binding by interface. Specifies the interface type. For more information, use the question mark (?) online help function. Physical interface or virtual interface. Use the show interfaces command to see a list of all interfaces currently configured on the router. **Note** For more information about the syntax for the router, use the question mark (?) online help function.
mac-address *address*	Clears detailed client binding information per mac-address.

Command Default

None

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
ip-services	execute

Example

This is a sample output from the **clear dhcp ipv4 server binding** command:

```
Router# clear dhcp ipv4 server binding
```

Related Commands

Command	Description
clear dhcp ipv4 server statistics, on page 9	Clears DHCP server statistics.

clear dhcp ipv4 server statistics

To clear DHCP server statistics, use the **clear dhcp ipv4 server statistics** command in XR EXEC mode.

clear dhcp ipv4 server statistics [[**raw** [**all**] [**location** *node-ID*]]

Syntax Description

raw	Clears debug statistics.
all	Clears debug statistics for base mode.
include-zeroes	Clears debug statistics that are zero.
location *node-ID*	Clears DHCP server statistics information for a specified node.

Command Default

None

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
ip-services	execute
root-system	read, write

Example

This is a sample output from the **clear dhcp ipv4 server statistics** command:

```
Router# clear dhcp ipv4 server statistics
```

Related Commands

Command	Description
clear dhcp ipv4 server binding, on page 8	Clears all client bindings in server.

clear dhcp ipv6 client

To clear the DHCPv6 client binding information configured on a given interface and set the binding information again, use the **clear dhcp ipv6 client** command in XR EXEC mode.

clear dhcp ipv6 client **interface-type** <*interfaceName*> { **binding** | **statistics** }

Syntax Description

interface-type <*interfaceName*>	Clears and restarts the DHCP IPv6 information of the specified interface.
binding	Clears client binding.
statistics	Clears client binding statistics.

Command Default

No default behavior or values

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 7.2.1	This command was introduced.

Usage Guidelines

Use the **clear dhcp ipv6 client** command to clear the DHCP client binding information for the specified interface.

Task ID

Task ID	Operations
IP-Services	Execution

Examples

The following example shows how to clear the DHCP client binding information:

```
Router# clear dhcp ipv6 client mgmtEth 0/0/CPU0/0 binding
Fri Jun  6 08:24:14.558 UTC
Router# show dhcp ipv6 client
Fri Jun  6 08:24:17.377 UTC

    Interface name         IP Address      Binding State         Lease Time Rem
----------------------    ------------    ---------------    ----------------------
MgmtEth0/0/CPU0/0          2001:DB8::1       BOUND             3598 secs (00:59:58)

RP/0/0/CPU0:ios# show dhcp ipv6 client mgmtEth 0/0/CPU0/0 statistics
Fri Jun  6 08:24:19.397 UTC

Client Interface name           : MgmtEth0/0/CPU0/0
-------------------------------------------------
     CLIENT COUNTER(s)          |        VALUE
-------------------------------------------------
Num discovers sent              :          1
Num requests sent               :          1
Num releases sent               :          1
Num offers received             :          1
Num acks received               :          1
```

Related Commands

Command	Description
show dhcp ipv6 client, on page 75	This command displays the DHCP IPv6 client binding information on a given interface.

clear dhcp ipv6 relay binding

To clear DHCPv6 relay binding, use the **clear dhcp ipv6 relay binding** command in XR EXEC mode.

clear dhcp ipv6 relay binding [**client-duid** *client-duid-number*] [**interface** *type interface-path-id*] [**vrf** *vrf-name*] [**location** *node-id*]

Syntax Description

client-duid *client-duid-number*	(Optional) Clears DHCPv6 relay client binding information. The argument *client-duid-number* is the client's DHCP Unique Identifier (DUID) number. **Note** Use the **show dhcp ipv6 relay binding** command to see the client DUID number.
interface *type interfac-path-id*	(Optional) Clears DHCPv6 relay client binding information for an interface. Specifies a physical interface or a virtual interface. **Note** Use the **show interfaces** command to see a list of all possible interfaces currently configured on the router.
vrf *vrf-name*	(Optional) Clears DHCPv6 relay client binding information for a VPN routing and forwarding (VRF) instance.
location *node-id*	(Optional) Clears DHCPv6 relay client binding information for a specified node. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

None.

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
ip-services	execute
root-system	read, write

This example shows how to clear DHCPv6 relay binding:

```
Router# clear dhcp ipv6 relay binding
```

clear dhcp ipv6 proxy binding

To clear Dynamic Host Configuration Protocol (DHCP) relay bindings for prefix delegation, use the **clear dhcp ipv6 proxy binding** command in XR EXEC mode.

clear dhcp ipv6 proxy binding {*client-duid* | *interface* | *location*}

Syntax Description

client-duid	Specifies the DHCP unique identifier.
interface	Specifies the interface.
location	Specifies the node location.

Command Default

No default behavior or values

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
ip-services	execute

Example

This is a sample output from the **clear dhcp ipv6 proxy binding** command:

```
Router# clear dhcp ipv6 proxy binding
```

clear dhcp ipv6 relay statistics

To clear DHCPv6 relay statistics, use the **clear dhcp ipv6 relay statistics** command in XR EXEC mode.

clear dhcp ipv6 relay statistics [**vrf** *vrf-name*][**location** *node-id*][**debug** {*all* | *location*}]

Syntax Description

vrf *vrf-name*	(Optional) Clears DHCPv6 relay statistics information for a VPN routing and forwarding (VRF) instance.
location *node-id*	(Optional) Clears DHCPv6 relay statistics information for a specified node. The *node-id* argument is entered in the *rack/slot/module* notation.
debug {*all* | *location*} *node-id*	(Optional) Clears DHCPv6 relay statistics information for base mode or a specified location.

Command Default

None.

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
ip-services	execute
root-system	read, write

This example shows how to clear DHCPv6 relay statistics:

```
Router# clear dhcp ipv6 relay statistics
```

client-mac-mismatch

To enable DHCP MAC address verification.

client-mac-mismatch action drop

Syntax Description

action	Specifies an action for the router when the DHCP MAC address is a not a match.
drop	Drops the packet with the mismatched DHCP MAC address.

Command Default

None

Command Modes

DHCP Relay Profile Configuration Mode

Command History

Release	Modification
Release 6.3.2	This command was introduced.

Usage Guidelines

Enables MAC address verification. If MAC address in the DHCPv4 protocol header does not match the L2 header source MAC address in the DHCPv4 relay profile, the frame is dropped.

Example

Use the following example to configure DHCP MAC address verification.

```
Router# configure

Router(config)# dhcp ipv4
/* Configures DHCP for IPv4 and enters the DHCPv4 configuration submode. */

Router(config-dhcpv4)# profile client relay
/* Enables DHCP relay profile */

Router(config-dhcpv4)# client-mac-mismatch action drop
/* Enables MAC address verification. If MAC address in the DHCPv4 protocol header does not
 match the L2 header source MAC address in the DHCPv4 relay profile,
 the frame is dropped  */

Router(config-dhcpv4-relay-profile)# commit

Router(config-dhcpv4-relay-profile)# exit
```

default-router

To configure the default-router, use the **default-router** command in the DHCPv4 server profile sub-mode. To deconfigure the name of the default-router or the IP address, use the **no** form of this command.

default-router *address1address2...address8*
no default-router *address1address2...address8*

Syntax Description

address1address2...address8	Name of the router or IP address. Upto 8 routers can be configured.

Command Default

None

Command Modes

DHCPv4 Server Profile

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
ip-services	read, write

Example

This is a sample output from the **default-router** command:

```
Router# config
Router(config)# dhcp ipv4
Router(config-dhcpv4)# profile DHCP_SERVER_PROFILE server
Router(config-dhcpv4-server-profile)# default-router 10.20.1.2
```

relay-response-on-src-intf

To ensure that the server always sends the OFFER back through the same interface that received the DISCOVER, use the **relay-response-on-src-intf** command in DHCP IPv4 Server Profile Class Configuration submode.

relay-response-on-src-intf

Command Default

No default behaviour or values

Command Modes

DHCP IPv4 Server Profile Class Configuration submode

Command History

Release	Modification
Release 24.3.1	This command was introduced.

Usage Guidelines

When a relay sends a DISCOVER message to the server, the server usually picks the best route to send the OFFER reply. This means the OFFER might go out through a different interface than the one where the DISCOVER came in.

If you want the server to always send the OFFER back through the same interface that received the DISCOVER, enable this command. With this command, the OFFER will always be sent out on the same interface that receives the DISCOVER.

The following example shows how to use the **relay-response-on-src-intf** command:

```
Router# configure
Router(config)# dhcp ipv4
Router(config-dhcpv4)# profile profile-test server
Router(config-dhcpv4-server-profile)# relay-response-on-src-intf
Router(config-dhcpv4-server-profile)# commit
```

delete-binding-on-discover disable

To ensure old binding is reassigned to the same client, when using **allow-client-id-change** command, use the **delete-binding-on-discover disable** command in DHCP IPv4 Server Profile Class Configuration submode.

delete-binding-on-discover disable

Command Default

No default behaviour or values

Command Modes

DHCP IPv4 Server Profile Class Configuration submode

Command History

Release	Modification
Release 6.5.2	This command was introduced.

Usage Guidelines

You must also configure the **allow-client-id-change** command so that DHCP IPv4 server allows changing the client id on new discovery request for **delete-binding-on-discover disable** command to operate.

The following example shows how to use the **delete-binding-on-discover disable** command:

```
Router# configure
Router(config)# dhcp ipv4
Router(config-dhcpv4)# profile ISP1 server
Router(config-dhcpv4-server-profile)# allow-client-id- change
Router(config-dhcpv4-server-profile)# class ISP1_CLASS
Router(config-dhcpv4-server-profile-class)# lease 0 1 0
Router(config-dhcpv4-server-profile-class)# pool ISP1_CLASS_POOL
Router(config-dhcpv4-server-profile-class)# delete-binding-on-discover disable
Router(config-dhcpv4-server-profile-class)# exit
Router(config-dhcpv4-server-profile)# commit
```

dhcp ipv4

To enable Dynamic Host Configuration Protocol (DHCP) for IPv4 and to enter DHCP IPv4 configuration mode, use the **dhcp ipv4** command in Global Configuration mode. To disable DHCP for IPv4 and exit the DHCP IPv4 configuration mode, use the **no** form of this command.

dhcp ipv4
no dhcp ipv4

Syntax Description

This command has no keywords or arguments.

Command Modes

None

Command Modes

Global Configuration mode

Command History

Release	Modification
Release 6.1.2	This command was introduced.

Usage Guidelines

Use the **dhcp ipv4** command to enter DHCP IPv4 configuration mode.

Task ID

Task ID	Operations
ip-services	read, write

Examples

This example shows how to enable DHCP for IPv4:

```
RP0/CPU0:Router# dhcp ipv4
RP0/CPU0:Router# (config-dhcpv4)#
```

dhcp ipv6

To enable Dynamic Host Configuration Protocol (DHCP) for IPv6 and to enter DHCP IPv6 configuration mode, use the **dhcp ipv6** command in XR Config mode. To disable the DHCP for IPv6, use the **no** form of this command.

dhcp ipv6

Syntax Description

This command has no keywords or arguments.

Command Modes

XR Config mode

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

Use the **dhcp ipv6** command to enter DHCP IPv6 configuration mode.

Task ID

Task ID	Operations
ip-services	read, write

Examples

This example shows how to enable DHCP for IPv6:

```
Router(config)# dhcp ipv6
Router(config-dhcpv6)#
```

dns-server

To configure the Domain Name System (DNS) servers, use the **dns-server** command in DHCPv4 server profile configuration and DHCPv4 server profile class sub-mode. To remove the DNS servers use the no form of this command.

dns-server *address1 address2 .....address8*
no dns-server *address1 address2.....address8*

Syntax Description

address1, address2...address8	Specifies the server IPv4 address. Upto 8 server addresses can be configured. The servers are listed in order of preference *address1* is the most preferred server, *address2* is the next most preferred server, and so on.

Command Default

None.

Command Modes

DHCPv4 Server Profile

DHCPv4 Server Profile Class Sub-mode

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
ip-services	read, write

This example shows how to configure DNS server address:

```
Router# config
Router(config)# dhcp ipv4
Router(config-dhcpv4)# profile DHCP_SERVER_PROFILE server
Router(config-dhcpv4-server-profile)# dns-server 192.168.155.9
```

domain-name

To configure domain name that DHCP clients will use to resolve DNS names, use the **domain-name** command in DHCP IPv4 server profile configuration mode.

domain-name *domain-name*

Syntax Description

domain-name	Specify DHCP server domain name for the client.

Command Default

None

Command Modes

DHCP IPv4 Server Profile configuration

DHCP IPv4 Server Profile Class sub-mode

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
ip-services	read, write

This example shows how to define cisco.com as domain name for DHCP server:

```
Router# config
Router(config)# dhcp ipv4
Router(config-dhcpv4)# profile DHCP_SERVER_PROFILE server
Router(config-dhcpv4-server-profile)# domain-name cisco.com
```

duplicate-mac-allowed

To allow duplicate client MAC addresses across different VLANs and interfaces, use the **duplicate-mac-allowed** command in the DHCP IPv4 configuration mode. To disallow duplicate client MAC addresses, use the **no** form of this command.

duplicate-mac-allowed [**exclude-vlan** | **include-giaddr**]

Syntax Description

exclude-vlan	Excludes VLANs from the client key; only MAC address and interface form the client key.
include-giaddr	Enables support for duplicate sessions having the same MAC address but different *gi-address* values, mainly in the case of routed sessions.

Command Default

By default, duplicate MAC address support is disabled.

Command Modes

DHCP IPv4 configuration

Command History

Release	Modification
Release 6.3.2	Modified the command to include **include-giaddr** option as part of DHCP L3 snooping feature in BNG.
Release 6.1.2	This command was introduced in BNG, with an addition of **exclude-vlan** option to exclude VLANs from the client key.

Usage Guidelines

You can enable duplicate MAC addresses on relay, proxy, server, and snoop DHCP modes.

Do not enable the **duplicate-mac-allowed** command for mobile subscribers.

With **exclude-vlan** option enabled, both inner and outer VLANs get excluded. You cannot exclude just one of them.

The **include-giaddr** option is used for DHCP L3 snooping feature in BNG. It is supported only on Cisco IOS XR 64-bit operating system.

Task ID

Task ID	Operation
ip-services	read, write

Example

This examples shows how to allow duplicate client MAC addresses across different VLANs and interfaces, using the **duplicate-mac-allowed** command:

```
Router# configure
Router(config)# dhcp ipv4
Router(config-dhcpv4)# duplicate-mac-allowed exclude-vlan
```

This examples shows how to enable support for duplicate sessions having the same MAC address but different *gi-address* values, for DHCP L3 snooping in BNG:

```
Router# configure
Router(config)# dhcp ipv4
Router(config-dhcpv4)# duplicate-mac-allowed include-giaddr
```

Related Commands

Command	Description
dhcp ipv4 , on page 20	Enables Dynamic Host Configuration Protocol (DHCP) for IPv4 and enters DHCP IPv4 configuration mode.

giaddr policy

To configure how Dynamic Host Configuration Protocol (DHCP) IPv4 Relay processes BOOTREQUEST packets that already contain a nonzero giaddr attribute, use the **giaddr policy** command in DHCP IPv4 profile relay configuration submode. To restore the default giaddr policy, use the **no** form of this command.

giaddr policy {**replace** | **drop**}
no giaddr policy {**replace** | **drop**}

Syntax Description

replace	Replaces the existing giaddr value with a value that it generates.
drop	Drops the packet that has an existing nonzero giaddr value.

Command Default

DHCP IPv4 relay retains the existing nonzero giaddr value in the DHCP IPv4 packet received from a client value.

Command Modes

DHCP IPv4 profile relay configuration

DHCP IPv4 profile proxy configuration

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

The **giaddr policy** command affects only the packets that are received from a DHCP IPv4 client that have a nonzero giaddr attribute.

Task ID

Task ID	Operations
ip-services	read, write

Examples

The following example shows how to use the **giaddr policy** command:

```
Router# config
Router(config)# dhcp ipv4
Router(config-dhcpv4)# profile client relay
Router(config-dhcpv4-relay-profile)# giaddr policy drop
```

Related Commands

Command	Description
dhcp ipv4 , on page 20	Enables DHCP for IPv4 and enters DHCP IPv4 configuration mode.

Command	Description
helper-address, on page 29	Configures the DHCP relay agent to relay packets to a specific DHCP Server.
profile (DHCP), on page 45	Configures a relay profile for the DHCP IPv4 component.
relay information check , on page 49	Configures a DHCP server to validate the relay agent information option in forwarded BOOTREPLY messages.
relay information option , on page 51	Enables the system to insert a DHCP relay agent information option in forwarded BOOTREQUEST messages to a DHCP server.
relay information option allow-untrusted , on page 53	Configures the DHCP component to not drop BOOTREQUEST messages that have the relay information option set and the giaddr set to zero.
relay information policy	Configures how a relay agent processes BOOTREQUEST messages that already contain a relay information option.

handle-jumbo-packet

To enable the router to process incoming DHCPv6 packets greater than 1280 bytes and upto 12800 bytes, use the **handle-jumbo-packet** command in **DHCP IPv6** configuration mode. If the incoming DHCPv6 packet size is greater that 12800 bytes, the router drops the packet.

handle-jumbo-packet

Syntax Description

This command has no keywords or arguments.

Command Default

Disabled.

Command Modes

DHCP IPv6 configuration mode

Command History

Release	Modification
Release 7.4.1	This command was introduced.

Usage Guidelines

Task ID

Task ID	Operation
ip-services	read, write

Example

This example shows how to use this command to process packets upto 12800 bytes:

```
Router# config
Router(config)# dhcp ipv6
Router(config-dhcpv6)# handle-jumbo-packet
Router(config-dhcpv6)# commit
```

helper-address

To configure the Dynamic Host Configuration Protocol (DHCP) IPv4 relay agent to relay DHCP packets to a specific DHCP server, use the **helper-address** command in an DHCP IPv4 relay profile configuration mode. Use the **no** form of this command to clear the address.

helper-address [**vrf** *vrf-name*] [*address*] [**giaddr** *gateway-address*]
no helper-address [**vrf** *vrf-name*] [*address*] [**giaddr** *gateway-address*]

Syntax Description

vrf-name	(Optional) Specifies the name of a particular VRF.
address	IPv4 in four part, dotted decimal format.
giaddr *gateway-address*	(Optional) Specifies the gateway address to use in packets relayed to server. This keyword is applicable for IPv4 helper address.

Command Default

Helper address is not configured.

Command Modes

DHCP IPv4 relay profile configuration

Command History

Release	Modification
Release 6.1.2	This command was introduced.

Usage Guidelines

A maximum of upto eight helper addresses can be configured.

Task ID

Task ID	Operations
ip-services	read, write

Examples

This example shows how to set the helper-address for a VRF using the **helper address** command in DHCP IPv4 relay profile class configuration mode:

```
RP/0/CPU0:router(config)#  dhcp ipv4
RP/0/CPU0:router(config-dhcpv4)# profile profile1 relay
RP/0/CPU0:router(config-dhcpv4-relay-profile)# helper-address vrf my-server-vrf 10.1.1.1
```

Related Commands

Command	Description
dhcp ipv4	Enables Dynamic Host Configuration Protocol (DHCP) for IPv4 and enters DHCP IPv4 configuration mode.
relay information check	Configures a DHCP server to validate the relay agent information option in forwarded BOOTREPLY messages.

Command	Description
relay information option	Enables the system to insert a DHCP relay agent information option in forwarded BOOTREQUEST messages to a DHCP server.
relay information option allow-untrusted	Configures the DHCP component to not drop BOOTREQUEST messages that have the relay information option set and the giaddr set to zero.

helper-address (ipv6)

To configure the Dynamic Host Configuration Protocol (DHCP) IPv6 relay agent for prefix delegation to relay DHCP packets to a specific DHCP server, use the **helper-address** command in the DHCP IPv6 profile configuration submode. Use the **no** form of this command to clear the address.

helper-address *ipv6-address* [**interface** *type interface-path-id dhcpv6 relay source address*]
no helper-address *ipv6-address* [**interface** *type interface-path-id dhcpv6 relay source address*]

Syntax Description

ipv6-address	The IPv6 address assigned to the interface. This argument must be in the form documented in RFC 2373 where the address is specified in hexadecimal format using 16-bit values between colons.
interface *type*	Interface type. For more information, use the question mark (?) online help function.

interface-path-id	(Optional) Either a physical interface instance or a virtual interface instance as follows:
	• Physical interface instance. Naming notation is *rack/slot/module/port* and a slash between value s is required as part of the notation.
	  • *rack*: Chassis number of the rack.
	  • *slot*: Physical slot number of the modular services card or line card.
	  • *module*: Module number. A physical layer interface module (PLIM) is always 0.
	  • *port*: Physical port number of the interface.
	Note
	In references to a Management Ethernet interface located on a route processor card, the physical slot number is alphanumeric (RSP0) and the module is CPU0. Example: interface MgmtEth0/RSP0/CPU0/0.
	• Virtual interface instance. Number range varies depending on interface type.
	For more information about the syntax for the router, use the question mark (?) online help function.

Command Default

No default behavior or values

Command Modes

DHCP IPv6 profile configuration

Command History

Release	Modification
Release 6.1.2	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
ip-services	read, write

Example

This is a sample output that shows how to set the helper-address using the **helper-address** command

```
Router# config
Router(config)# dhcp ipv6
Router(config-dhcpv6)# profile p1 proxy
Router(config-dhcpv6-profile)# helper-address 2001:db8::3 GigabitEthernet 0/2/0/0
```

Related Commands

Command	Description
dhcp ipv6, on page 21	Enables Dynamic Host Configuration Protocol (DHCP) for IPv6.

hop-count-seed

To configure the hop-count in relay-forward message for a DHCP relay agent as zero, use the `hop-count-seed` command in the DHCP IPv6 configuration mode. By default, hop-count in relay-forward message for DHCP relay agents is set to one.

hop-count-seed
no hop-count-seed

Syntax Description

This command has no keywords or arguments.

Command Default

If this command is not configured, by default, hop-count in relay-forward message for DHCP relay agents is set to one.

Command Modes

DHCP IPv6 configuration

Command History

Release	Modification
Release 7.0.1	This command was introduced.

Usage Guidelines

Use this command only on routers that are configured as DHCP relay agents. You can only configure this command in the DHCP IPv6 mode and not on DHCP IPv4 mode.

Task ID

Task ID	Operations
ip-services	read, write

The following is an example of the **hop-seed-count** command:

```
Router# config
Router(config)# dhcp ipv6
Router(dhcp-ipv6)# hop-count-seed
```

iana-route-add

To enable route addition for identity association for non temporary address (IANA), use the **iana-route-add** command in DHCPv6 relay profile configuration submode. To disable route addition to IANA, use the **no** form of this command.

iana-route-add
no iana-route-add

Syntax Description

This command has no keywords or arguments.

Command Default

Disabled.

Command Modes

DHCP IPv6 relay profile configuration submode

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

The DHCPv6 relay is capable of installing routes for multiple identity association for prefix delegation (IAPD) options within a DHCPv6 message. The route addition for IAPD is enabled by default. The DHCPv6 relay is capable of installing routes for IANA as well, but this feature is disabled by default. Users can enable the route addition to IANA feature by using **iana-route-add** command in DHCPv6 relay profile configuration submode.

Task ID

Task ID	Operation
ip-services	read, write

Example

This example shows how to enable route addition to IANA:

```
Router# config
Router(config)# dhcp ipv6
Router(config-dhcpv6)# profile client relay
Router(config-dhcpv6-relay-profile)# iana-route-add
```

ipv6 address dhcp-client-options

To configure the DHCPv6 client options, use the **ipv6 address dhcp-client-options** command in the interface configuration submode.

ipv6 address dhcp-client-options { **duid linked-layer-address** | **options** { **15** *user-class-id* | **16** *vendor-id* | **23** | **24** } | **rapid-commit** | **timers** { **release-timeout** *release-timeout-value* | **req-max-rt** *req-max-rt-value* | **req-timeout** *req-timeout-value* | **sol-max-delay** *sol-max-delay-value* | **sol-max-rt** *sol-max-rt-value* | **sol-time-out** *sol-time-out-value* } }

Syntax Description

duid	Enables DHCPv6 client to communicate with the DHCPv6 server through the link layer address.
rapid-commit	Obtains configuration parameters from the DHCPv6 server through a rapid two-step exchange (solicit and reply) instead of the default four-step exchange (solicit, advertise, request, and reply).
options	Configures DHCPv6 options that can be configured on a DHCPv6 client other than **duid** or **rapid-commit** options.
timers	Configures the different timer values for DHCP client configurations.
release-timeout *release-timeout-value*	Configures the retransmission timeout value for the initial release message in seconds.
req-max-rt *req-max-rt-value*	Configures the maximum retransmission timeout value for the request message.
req-timeout *req-timeout-value*	Configures the initial request timeout value of the request message.
sol-max-delay *sol-max-delay-value*	Configures the maximum delay time of the first solicit message.
sol-max-rt *sol-max-rt-value*	Configures the maximum solicit retransmission time.
sol-max-rt *sol-max-rt-value*	Configures the intial timeout value of the solicit message.

Command Default

None

Command Modes

Interface Configuration

Command History

Release	Modification
Release 7.2.1	This command was introduced.

Task ID

Task ID	Operation
ipv6	read, write

Task ID	Operation
network	read, write

Example

The following example shows you how to configure the **release-timeout** timer option:

```
Router# configure
Router(config)# interface BVI 10
Router(config-if)# ipv6 address dhcp-client-options
Router(config-dhcpv6-client)# timers release-timeout 3
Router(config-dhcpv6-client)# commit
```

Related Commands

Command	Descrip
clear dhcp ipv6 client, on page 10	Clears the DHCPv6 client binding information configured on a given interface and sets the binding information again.
show dhcp ipv6 client, on page 75	Displays DHCP IPv6 client binding information.
show tech-support dhcp ipv6 client, on page 89	Retrieves the DHCP client show tech support information.

lease (DHCPv4 Server)

To configure the lease for an IP address assigned from the pool, use the **lease** command in the DHCPv4 server profile submode. To deconfigure, use the **no** form of this command.

lease { **infinite** | *days* }
no lease { **infinite** | *days* }

Syntax Description

infinite	Configures an infinite lease.
days	Configures lease for the specified number of days. The number of days can range from 0 to 365.

Command Default

None

Command Modes

DHCPv4 Server Profile

Command History

Release	Modification
Release 6.1.2	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
ip-services	read, write

Example

This is a sample output from the **lease** command:

```
Router# config
Router#(config)# dhcp ipv4
Router#(config-dhcpv4)# profile P1 server
Router#(config-dhcpv4-server-profile)# lease infinite
```

limit lease

To configure the limit on a lease per-circuit-id, per-interface, or per-remote-id, use the **limit lease** command in the DHCPv4 server profile submode. To deconfigure, use the **no** form of this command.

limit lease {**per-circuit-id** | **per-interface** | **per-remote-id** }*value*
no limit lease {**per-circuit-id** | **per-interface** | **per-remote-id** }*value*

Syntax Description

per-circuit-id	Inserts the limit lease type circuit-id.
per-interface	Inserts the limit lease type interface.
per-remote-id	Inserts the limit lease type remote-id.
value	Value of limit lease count. Range is from 1 to 240000.

Command Default

None

Command Modes

DHCPv4 Server Profile

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
ip-services	read, write

Example

This is a sample output from the **limit lease** command:

```
Router# config
Router(config)# dhcp ipv4
Router(config-dhcpv4)# profile P1 server
Router(config-dhcpv4-server-profile)# limit lease per-circuit-id 23
```

netbios-name-server

To configure net bios name servers, use the **netbios-name-server** command in the DHCPv4 server profile submode. To deconfigure, use the **no** form of this command.

netbios-name server *address1address2...address8*
no netbios-name server *address1address2...address8*

Syntax Description

address1address2...address8	Name of the server or IP address.

Command Default

None

Command Modes

DHCPv4 Server Profile

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
ip-services	read, write

Example

This is a sample configuration for the **netbios-name-server** command:

```
Router# config
Router(config)# dhcp ipv4
Router(config-dhcpv4)# profile DHCP_SERVER_PROFILE server
Router(config-dhcpv4-server-profile)# netbios-name-server 10.20.3.5
```

netbios-node-type

To configure the type of net bios node, use the **netbios-node-type** command in the DHCPv4 server profile submode. To deconfigure, use the **no** form of this command.

netbios-node-type {*number* | *b-node* | *h-node* | *m-node* | *p-node* }

Syntax Description

number	Hexadecimal number.
b-node	broadcast node.
h-node	hybrid node.
m-node	mixed node.
p-node	peer-to-peer node.

Command Default

None

Command Modes

DHCPv4 Server Profile

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

No manually configured prefix delegations exist.

Task ID

Task ID	Operation
ip-services	read, write

Example

This is a sample output from the **bootfile** command:

```
RP/0/RP0/CPU0:router# config
RP/0/RP0/CPU0:router(config)# dhcp ipv4
RP/0/RP0/CPU0:router(config-dhcpv4)# profile DHCP_SERVER_PROFILE server
RP/0/RP0/CPU0:router(config-dhcpv4-server-profile)# netbios-node-type p-node
```

option

To configure the DHCP option code, use the **option** command in the DHCPv4 server profile submode. To deconfigure, use the **no** form of this command.

The DHCP options which are not commonly used are configured in a raw format using **option** command.

option *option-code* { **ascii** *string* | **hex** *string* | **ip** *address* }
no option *option-code* { **ascii** *string* | **hex** *string* | **ip** *address* }

Syntax Description

option-code	Specifies the DHCP option code.
ascii *string*	Specifies the data as an NVT ASCII string.
hex *string*	Specifies the data as a hex string.
ip *address*	Specifes the hostname or the IP Address.

Command Default

None

Command Modes

DHCPv4 Server Profile

DHCPv4 Server Profile Class Sub-mode

Command History

Release	Modification
Release 6.1.2	This command was introduced.

Usage Guidelines

DHCP server profile class sub-mode supports configuring DHCP options except few that are listed in the table below:

Table 1: Not Supported DHCP Options under DHCPv4 Server Profile Class Sub-mode

Pad	10
Hostname	12
Requested Address	50
Over Load	52
Message Type	53
Server Identifier	54
Renewal Time	58
Rebind Time	59
Client Identifier	61

Relay Information	82
End	255

Task ID

Task ID	Operation
ip-services	read, write

Example

This is a sample output from the **option** command:

```
Router# config
Router(config)# dhcp ipv4
Router(config-dhcpv4)# profile DHCP_SERVER_PROFILE server
Router(config-dhcpv4-server-profile)# option 23 ip 10.20.34.56
Router(config-dhcpv4-server-profile)# option 16 hex 20187634
Router(config-dhcpv4-server-profile)# option 17 ascii /users/cisco/
```

pool

To enable distributed address pool service on IPv4 or IPv6 profile and to enter the pool IPv4 or IPv6 configuration submode, use the **pool ipv4** or **pool ipv6** command in the Global Configuration mode. To disable this feature, use the **no** form of this command.

pool {[**ipv4***pool-name* {*address-range* | **exclude** | **network***utilization-mark*}] | [**ipv6** {*address-range* | | **exclude** | | **network** | *prefix-length* | *prefix-range* | *utilization-mark*} | [**vrf** {[**all ipv6** *ipv6-pool-name*] | [*vrf-name* {[**ipv4** *ipv4-pool-name* {*address-range* | **exclude** | **network***utilization-mark*}] | [**ipv6** *ipv6-pool-name* {*address-range* | **exclude** | **network***prefix-lengthprefix-rangeutilization-mark*}}]}]}
no pool ipv4

Syntax Description

address-range	Specifies the address-range of the pool.
exclude	Specifies the address to be excluded from the pool.
network	Specifies the network of the pool.
utilization-mark	Specifies the utilization-mark of the pool.
prefix-length	Specifies the prefix-length to be used for the pool.
prefix-range	Specifies the prefix-range to be used for the pool.

Command Default

None

Command Modes

Global Configuration

Command History

Release	Modification
Release 6.1.2	This command was introduced.

Usage Guidelines

Use the **pool ipv4** command to enter IPv4 pool configuration submode.

Task ID

Task ID	Operation
ip-services	read, write

This is an example of configuring the **pool ipv4** command in the Global Configuration mode:

```
Router# configure
Router(config)# pool ipv4 pool1
Router(config-pool-ipv4)# address-range 10.10.10.1 10.10.10.254
```

Related Commands

Commands	Description
pool vrf	Enables distributed address pool service on vrf, ipv4, and ipv6.
exclude	Specifies a range of IP addresses that distributed address pool service should not assign to clients.
address-range	Specifies a range of IP addresses.

profile (DHCP)

To configure a DHCP relay profile, DHCP snooping profile, DHCP base profile or a DHCP proxy profile for the Dynamic Host Configuration Protocol (DHCP) IPv4 or IP6 component and to enter the profile mode, use the **profile** command in DHCP IPv4 or DHCP IPv6 configuration mode. To disable this feature and exit the profile mode, use the **no** form of this command.

profile *name* **relay**
no profile *name* **relay**

Syntax Description

name	Name that uniquely identifies the relay or snoop profile.
relay	Configures a DHCP relay profile. A DHCP relay agent is a host that forwards DHCP packets between clients and servers. When the clients and servers are not on the same physical subnet, the relay agents are used to forward requests and replies between them. A DHCP relay agent is any host that forwards DHCP packets between clients and servers. Relay agents are used to forward requests and replies between clients and servers when they are not on the same physical subnet. Relay agent forwarding is distinct from the normal forwarding of an IP router, where IP datagrams are switched between networks rather transparently. By contrast, relay agents receive DHCP messages and then generate a new DHCP message to send out on another interface. The relay agent sets the gateway IP address (giaddr field of the DHCP packet) and, if configured, adds the relay agent information option (option82) in the packet and forwards it to the DHCP server. The reply from the server is forwarded back to the client after removing option 82.

Command Default

None

Command Modes

DHCP IPv4 configuration

DHCP IPv6 configuration

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
ip-services	read, write

Examples

This example shows how to use the **profile** command to configure DHCP IPv6 relay profile:

```
RP/0/RP0/CPU0:router(config)# dhcp ipv6
RP/0/RP0/CPU0:router(config-dhcpv6)# profile client relay
RP/0/RP0/CPU0:router(config-dhcpv6-relay-profile)#
```

This example shows how to use the **profile** command to configure DHCP IPv4 relay profile:

```
RP/0/RP0/CPU0:router(config)# dhcp ipv4
RP/0/RP0/CPU0:router(config-dhcpv4)# profile client relay
RP/0/RP0/CPU0:router(config-dhcpv4-relay-profile)#
```

relay information authenticate

To specify relay agent information option to the policy plane for authentication purposes, use the **relay information authenticate** command in the DHCP IPv4 proxy profile configuration mode. To disable the relay option, use the **no** form of this command.

relay information authenticate {**received** | **inserted**}

Syntax Description

received	Authenticate using received relay agent information option.
inserted	Authenticate using inserted relay agent information option.

Command Default

None

Command Modes

DHCP IPv4 proxy profile configuration

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
ip-services	read, write

Examples

This example shows how to specify the received relay agent information option for authentication using the **relay information authenticate** command in DHCP IPv4 proxy profile configuration mode:

```
Router# config
Router(config)# dhcp ipv4
Router(config-dhcpv4)# profile myprofile proxy
Router(config-dhcpv4-proxy-profile)# relay information authenticate received
```

Related Commands

Command	Description
dhcp ipv4	Enables Dynamic Host Configuration Protocol (DHCP) for IPv4 and enters DHCP IPv4 configuration mode.

Command	Description
relay information check	Configures a DHCP server to validate the relay agent information option in forwarded BOOTREPLY messages.
relay information option	Enables the system to insert a DHCP relay agent information option in forwarded BOOTREQUEST messages to a DHCP server.
relay information option allow-untrusted	Configures the DHCP component to not drop BOOTREQUEST messages that have the relay information option set and the giaddr set to zero.
relay information option circuit-id	Enables the system to insert a circuit-id information option in forwarded BOOTREQUEST messages to a DHCP server.
relay information option remote-id	Enables the system to insert a remote-id information option in forwarded BOOTREQUEST messages to a DHCP server.
relay information option vpn	Enables the system to insert vpn information option in forwarded BOOTREQUEST messages to a DHCP server.
relay information option vpn-mode	Enables the system to insert a vpn-mode information option in forwarded BOOTREQUEST messages to a DHCP server.
relay information policy	Configures how a relay agent processes BOOTREQUEST messages that already contain a relay information option.

relay information check

To configure a Dynamic Host Configuration Protocol (DHCP) IPv4 Relay to validate the relay agent information option in forwarded BOOTREPLY messages, use the **relay information check** command in DHCP IPv4 relay profile configuration submode. To disable this feature, use the **no** form of this command.

relay information check
no relay information check

Syntax Description

This command has no keywords or arguments.

Command Default

DHCP validates the relay agent information option.

Command Modes

DHCP IPv4 relay profile configuration

Command History

Release	Modification
Release 6.1.2	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
ip-services	read, write
basic-services	read, write

This example shows how to use the **relay information check** command:

```
RP/0/CPU0:router# config
RP/0/CPU0:router(config)# dhcp ipv4
RP/0/CPU0:router(config-dhcpv4)# profile client relay
RP/0/CPU0:router(config-dhcpv4-relay-profile)# relay information check
```

Related Commands

Command	Description
dhcp ipv4	Enables Dynamic Host Configuration Protocol (DHCP) for IPv4 and enters DHCP IPv4 configuration mode.
helper-address	Configures the DHCP relay agent to relay packets to a specific DHCP Server.
relay information check	Configures a DHCP server to validate the relay agent information option in forwarded BOOTREPLY messages.
relay information option	Enables the system to insert a DHCP relay agent information option in forwarded BOOTREQUEST messages to a DHCP server.

Command	Description
relay information option allow-untrusted	Configures the DHCP component to not drop BOOTREQUEST messages that have the relay information option set and the giaddr set to zero.

relay information option

To configure Dynamic Host Configuration Protocol (DHCP) IPv4 relay to insert relay agent information option in forwarded BOOTREQUEST messages to a DHCP server, use the **relay information option** command in DHCP IPv4 relay profile relay configuration. To disable inserting relay information into forwarded BOOTREQUEST messages, use the **no** form of this command.

relay information option
no relay information option

Syntax Description

This command has no keywords or arguments.

Command Default

None

Command Modes

DHCP IPv4

relay

profile

configuration

Command History

Release	Modification
Release 6.1.2	This command was introduced.

Usage Guidelines

The **relay information option** command automatically adds the circuit identifier suboption and the remote ID suboption to the DHCP relay agent information option.

The **relay information option** command enables a DHCP server to identify the user (for example, cable access router) sending the request and initiate appropriate action based on this information. By default, DHCP does not insert relay information.

The upstream DHCP server or DHCP relay interface must be configured to accept this type of packet using the **relay information option allow-untrusted** configuration. This configuration prevents the server or relay from dropping the DHCP message.

Task ID

Task ID	Operations
ip-services	read, write
basic-services	read, write

This example shows how to use the **relay information option** command:

```
RP/0/CPU0:router# config
RP/0/CPU0:router(config)# dhcp ipv4
RP/0/CPU0:router(config-dhcpv4)# profile client relay
RP/0/CPU0:router(config-dhcpv4-relay-profile)# relay information option
```

Related Commands

Command	Description
dhcp ipv4	Enables DHCP for IPv4 and enters DHCP IPv4 configuration mode.
helper-address	Configures the DHCP relay agent to relay packets to a specific DHCP Server.
relay information check	Configures a DHCP server to validate the relay agent information option in forwarded BOOTREPLY messages.
relay information option allow-untrusted	Configures the DHCP component to not drop BOOTREQUEST messages that have the relay information option set and the giaddr set to zero.

relay information option allow-untrusted

To configure the Dynamic Host Configuration Protocol (DHCP) IPv4 relay not to drop discard BOOTREQUEST packets that have the relay information option set and the giaddr set to zero, use the **relay information option allow-untrusted** command in DHCP IPv4 relay profile configuration submode. To restore the default behavior, which is to discard the BOOTREQUEST packets that have the relay information option and set the giaddr set to zero, use the **no** form of this command.

relay information option allow-untrusted
no relay information option allow-untrusted

Syntax Description

This command has no keywords or arguments.

Command Default

The packet is dropped if the relay information is set and the giaddr is set to zero.

Command Modes

DHCP IPv4

relay

profile

configuration

Command History

Release	Modification
Release 6.1.2	This command was introduced.

Usage Guidelines

According to RFC 3046, relay agent receiving a DHCP packet from an untrusted circuit with giaddr set to zero but with a relay agent information option already present in the packet shall discard the packet and increment an error count. This configuration prevents relay from dropping the DHCP message.

Task ID

Task ID	Operations
ip-services	read, write
basic-services	read, write

Examples

This example shows how to use the **relay information option allow-untrusted** command:

```
RP/0/CPU0:router# config
RP/0/CPU0:router(config)# dhcp ipv4
RP/0/CPU0:router(config-dhcpv4)# profile client relay
RP/0/CPU0:router(config-dhcpv4-relay-profile)# relay information option allow-untrusted
```

Related Commands

Command	Description
dhcp ipv4	Enables Dynamic Host Configuration Protocol (DHCP) for IPv4 and enters DHCP IPv4 configuration mode.
helper-address	Configures the DHCP relay agent to relay packets to a specific DHCP Server.
relay information check	Configures a DHCP server to validate the relay agent information option in forwarded BOOTREPLY messages.
relay information option	Enables the system to insert a DHCP relay agent information option in forwarded BOOTREQUEST messages to a DHCP server.

secure-arp

To allow DHCP to add an ARP cache entry when DHCP assigns an IP address to a client in IP subscriber sessions, use the **secure-arp** command in DHCP IPv4 profile proxy configuration or DHCP IPv4 server profile mode. To disallow DHCP to add an ARP cache entry when DHCP assigns an IP address to a client, use the **no** form of this command.

secure-arp
no secure-arp

Syntax Description

This command has no keywords or arguments.

Command Default

By default, secure ARP support is disabled.

Command Modes

DHCP IPv4 proxy profile configuration

DHCP IPv4 Server Profile

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

In standalone DHCP sessions, the DHCP server adds an ARP entry when it assigns an IP address to a client. However, for IP subscriber sessions, DHCP server does not add an ARP entry. Although ARP establishes correspondences between network addresses, an untrusted device can spoof IP an address not assigned to it posing a security threat for IP subscriber sessions.

Secure ARP allows DHCP to add an ARP cache entry when DHCP assigns an IP address to a client in IP subscriber sessions. This is to prevent untrusted devices from spoofing IP addresses not assigned to them. Secure ARP is disabled by default.

Task ID

Task ID	Operation
ip-services	read, write

Example

This examples shows how to allow DHCP to add an ARP cache entry when DHCP assigns an IP address to a client using the **secure-arp** command in DHCP IPv4 server profile configuration:

```
Router# configure
Router(config)# dhcp ipv4
Router(config-dhcpv4)# profile profile1 server
Router(config-dhcpv4-server-profile)# secure-arp
Router(config-dhcpv4-server-profile)#
```

show dhcp ipv4 client

To display DHCP client binding information, use the **show dhcp ipv4 client** command in XR EXEC mode.

show dhcp ipv4 client <*interfaceName*> [**detail**] [**debug**]

Syntax Description

interfaceName	Displays the DHCP IPv4 address of the specified interface.
detail	(Optional) Specifies detailed results.
debug	(Optional) Displays internal debugging information.

Command Default

No default behavior or values

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

Use the **show dhcp ipv4 client** command to display the DHCP IPv4 for the specified client.

Task ID

Task ID	Operations
IP-Services	read

Examples

The following example shows how to display DHCP IPv4 binding information:

```
Router# show dhcp ipv4  client
Mon May  6 16:35:32.581 UTC

    Interface name                    IP Address           Binding State         Lease
Time Rem
----------------------               ------------         ---------------
----------------------
MgmtEth0_0_CPU0_0                   192.168.190.130           BOUND           1688 secs
(00:28:08)

Router#
Router# show dhcp ipv4  client binding ?
  MgmtEth          Ethernet/IEEE 802.3 interface(s)
  detail           Show detailed client binding information
  |                Output Modifiers
  <cr>
Router# show dhcp ipv4  client   detail
Mon May  6 16:35:56.579 UTC

-----------------------------------------------------
Client Interface name         : MgmtEth0_0_CPU0_0
Client Interface handle       : 0x1280
Client Interface VRF name     : default
Client ChAddr                 : 000c.292f.950e
```

```
Client ID                     : MgmtEth0_0_CPU0_0
Client State                  : BOUND
Client IP Address (Dhcp)      : 192.168.190.130
Client IP Address Mask        : 255.255.255.0
Client Lease Time Allocated   : 1800 secs (00:30:00)
Client Lease Time Remaining   : 1664 secs (00:27:44)
Client Selected Server Addr   : 192.168.190.254
-------------------------------------------------------

Router#
Router# show dhcp ipv4  client binding detail ?
  MgmtEth          Ethernet/IEEE 802.3 interface(s)
  debug            Show detailed debug level client binding information
  |                Output Modifiers
  <cr>
Router# show dhcp ipv4  client detail debug
Mon May  6 16:36:43.836 UTC

-------------------------------------------------------
Client Interface name         : MgmtEth0_0_CPU0_0
Client Interface handle       : 0x1280
Client Interface VRF name     : default
Client ChAddr                 : 000c.292f.950e
Client ID                     : MgmtEth0_0_CPU0_0
Client State                  : BOUND
Client IP Address (Dhcp)      : 192.168.190.130
Client IP Address Mask        : 255.255.255.0
Client Lease Time Allocated   : 1800 secs (00:30:00)
Client Lease Time Remaining   : 1617 secs (00:26:57)
Client Selected Server Addr   : 192.168.190.254
Client Interface VRF id       : 0x60000000
Client Interface VRF Table id : 0xe0000000
Client XID                    : 0xa7f
Client Timers Running         : 0x2 (T1_RENEW_TIMER)
Client Renew Time Allocated   : 900 secs (00:15:00)
Client Renew Time Adjusted    : 900 secs (00:15:00)
Client Rebind Time Allocated  : 1575 secs (00:26:15)
Client Rebind Time Adjusted   : 1575 secs (00:26:15)
Client Checkpoint object id   : 0x80002fd8
Client IPv4 MA configured     : TRUE
-------------------------------------------------------

Router#
Router# show dhcp ipv4 client  mgmtEth 0/0/CPU0/0
Mon May  6 16:49:54.382 UTC

    Interface name         IP Address      Binding State         Lease Time Rem
----------------------    ------------    ---------------    ----------------------
MgmtEth0_0_CPU0_0          192.168.190.130  BOUND             1727 secs (00:28:47)
RP/0/0/CPU0:ios#
```

show dhcp ipv4 client statistics

To display DHCP client statistical information, use the **show dhcp ipv4 client statistics** command in XR EXEC mode.

show dhcp ipv4 client *interfaceName interface-number* **statistics**

Syntax Description

interfaceName	Displays the DHCP IPv4 statistical information of the specified interface.
statistics	Applies a statistics template and enable statistics collection.

Command Default

No default behavior or values

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

Use the **show dhcp ipv4 client statistics** command to display the DHCP IPv4 statistical information for the specified client.

Task ID

Task ID	Operations
IP-Services	read

Examples

The following example shows how to display the DHCP IPv4 statistics information:

```
RP/0/0/CPU0:ios#show dhcp ipv4 client binding mgmtEth 0/0/CPU0/0 statistics
Mon May  6 16:49:46.402 UTC

-----------------------------------------------------
Client Interface name         : MgmtEth0_0_CPU0_0
Client State                  : BOUND
-----------------------------------------------------
               TOTAL STATISTICS
-----------------------------------------------------
DISCOVERS SENT                : 1
OFFERS    SENT                : 1
OFFERS    RECEIVED            : 1
ACKS      RECEIVED            : 1
RELEASE   SENT                : 1
RESYNC    SENT TO IM          : 1
IPV4_MA   CFG SENT            : 1
IPV4_MA   CFG SUCCESS         : 1
INIT      TIMER STARTED       : x
T1-RENEW  TIMER STARTED       : x
T2_REBIND TIMER STARTED       : x
LEASE     TIMER STARTED       : x
INIT      TIMER STOPPED       : x
T1-RENEW  TIMER STOPPED       : x
T2_REBIND TIMER STOPPED       : x
```

```
LEASE     TIMER STOPPED       : x

-----------------------------------------------------
               ERROR COUNTERS
-----------------------------------------------------
OFFERS    IGNORED             : 1
ACK       IGNORED             : 1
DECLINE   SENT                : 1
NACK      RECEIVED            : 1
INVALID   OFFERS RECEIVED     : 1
INVALID   ACKS RECEIVED       : 1
IPV4_MA   CFG FAILED          : 0
IPV4_MA   CFG FAILED REASON   : "..."
IM        RESYNC ERROR REASON : "..."
```

show dhcp ipv4 proxy interface

To display the proxy interface information for Dynamic Host Configuration Protocol (DHCP) IPv4, use the **show dhcp ipv4 proxy interface** command in XR EXEC mode.

show dhcp ipv4 proxy interface [*interface-type interface-name*] [**detail**]

Syntax Description

interface-type	Type of the proxy interface.
interface-name	Name of the proxy interface.
detail	Displays the detailed information of proxy interface.

Command Default

None

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 6.0.1	This command was supported for BNG.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
ip-services	read

This is a sample output from the **show dhcp ipv4 proxy interface** command:

```
Router# show dhcp ipv4 proxy interface bundle-Ether 70.16 detail
Sat Jan  5 14:25:53.484 UTC

Interface:          Bundle-Ether70.16
VRF:                default
Mode:               Proxy
Profile Name:       proxy1
Lease Limit:        per circuit id from AAA 2

Lease Count Details:
Circuit id from AAA                                          Count
c2                                                           1
```

This table describes the significant fields shown in the display.

Table 2: show dhcp ipv4 proxy interface Command Field Descriptions

Field	Description
Lease Limit	Specifies the lease limit value sent from AAA server.

Field	Description
Count	Specifies the number of sessions on the router having the specific Circuit-ID received from the AAA server.

show dhcp ipv4 proxy statistics

To display DHCP proxy statistics, use the **show dhcp ipv4 proxy statistics** command in EXEC mode.

show dhcp ipv4 proxy statistics {**raw** | **include-zeroes** | **details**}

Syntax Description

raw	Displays debug statistics.
include-zeroes	Displays debug statistics that are zero.
details	Displays DHCP server statistics details.

Command Default

None.

Command Modes

EXEC

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
ip-services	read

Example

This is a sample output from the **show dhcp ipv4 proxy statistics** command:

```
RP/0/CPU0:router# show dhcp ipv4 proxy statistics
           VRF          |     RX      |       TX       |       DR       |
------------------------------------------------------------------------------------
          default       |      0      |        0       |        0       |
```

Related Commands

Command	Description
show dhcp ipv4 server binding	Displays DHCP client bindings for server.
show dhcp ipv4 server profile	Displays DHCP server profile information.

show dhcp ipv4 relay profile

To display Dynamic Host Configuration Protocol (DHCP) relay agent status, use the **show dhcp ipv4 relay profile** command in EXEC mode.

show dhcp ipv4 relay profile

Syntax Description

This command has no keywords or arguments.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 6.1.2	This command was introduced.

Usage Guidelines

This command displays the relay profiles created for DHCP IPv4.

Task ID

Task ID	Operations
ip-services	read

Examples

The following is sample output from the **show dhcp ipv4 relay profile** command:

```
Router# show dhcp ipv4 relay profile

DHCP IPv4 Relay Profiles
------------------------
r1
r2
```

Related Commands

Command	Description
show dhcp ipv4 relay profile name	Displays Dynamic Host Configuration Protocol (DHCP) relay agent status, specific to a relay profile.

show dhcp ipv4 relay profile name

To display Dynamic Host Configuration Protocol (DHCP) relay agent status, specific to a relay profile, use the **show dhcp ipv4 relay profile name** command in EXEC mode.

show dhcp ipv4 relay profile [**name** *profile-name*]

Syntax Description

name *profile-name*	(Optional) Name that uniquely identifies the relay profile.

Command Default

If *name* is not specified, displays a list of configured DHCP profile names.

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 6.1.2	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
ip-services	read

Examples

The following is sample output from the **show dhcp ipv4 relay profile name** command:

```
Router# show dhcp ipv4 relay profile name r1

DHCP IPv4 Relay Profile r1:

Helper Addresses:
10.10.10.1, vrf default
Information Option: Disabled
Information Option Allow Untrusted: Disabled
Information Option Policy: Replace
Information Option Check: Disabled
Giaddr Policy: Keep
Broadcast-flag Policy: Ignore

VRF References:
default
Interface References:
FINT0_RP0_CPU0
MgmtEth0_RP0_CPU0_0
```

show dhcp ipv4 relay statistics

To display the Dynamic Host Configuration Protocol (DHCP) IPv4 relay agent packet statistics information for VPN routing and forwarding (VRF) instances, use the **show dhcp ipv4 relay statistics** command in EXEC mode.

show dhcp [**vrf** {*vrf-name* | **default**}] **ipv4 relay statistics**

Syntax Description

vrf *vrf-name*	(Optional) Name that uniquely identifies the VRF.
default	(Optional) Displays the relay statistics information for the default VRF.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 6.1.2	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
ip-services	read

Examples

The following is sample output from the **show dhcp ipv4 relay statistics** command when none of the optional keywords or arguments are used command :

```
Router#  show dhcp ipv4 relay statistics

                  VRF                  |       RX       |       TX       |       DR       |
-------------------------------------------------------------------------------------------
                default                |             0  |             0  |             0  |
```

The following is sample output from the show dhcp ipv4 relay statistics command using the **vrf** and **default** keywords:

```
Router#  show dhcp vrf default ipv4 relay statistics
01 Sep 6 07:10:35.873 UTC

DHCP IPv4 Relay Statistics for VRF default:

     TYPE          |    RECEIVE    |    TRANSMIT   |     DROP      |
-------------------------------------------------------------------
DISCOVER           |             0  |             0  |             0  |
OFFER              |             0  |             0  |             0  |
REQUEST            |             0  |             0  |             0  |
DECLINE            |             0  |             0  |             0  |
ACK                |             0  |             0  |             0  |
NAK                |             0  |             0  |             0  |
```

```
RELEASE           |            0  |            0  |            0  |
INFORM            |            0  |            0  |            0  |
LEASEQUERY        |            0  |            0  |            0  |
LEASEUNASSIGNED   |            0  |            0  |            0  |
LEASEUNKNOWN      |            0  |            0  |            0  |
LEASEACTIVE       |            0  |            0  |            0  |
BOOTP-REQUEST     |            0  |            0  |            0  |
BOOTP-REPLY       |            0  |            0  |            0  |
BOOTP-INVALID     |            0  |            0  |            0  |
```

show dhcp ipv4 server binding

To display DHCP client bindings for server, use the **show dhcp ipv4 server binding** command in EXEC mode.

show dhcp ipv4 server binding { **detail** | **location** *node-ID* | **interface** *type interface-path-ID* | **vrf** *vrf-name* | **ip-address** *address* | **mac-address** *address* | **srg** | **srg-master** | **srg-slave** | **summary**}

Syntax Description

detail	Displays detailed client binding information for all clients.
location *node-ID*	Displays detailed client binding information for a specified node.
interface *type interface-path-ID*	Displays client binding by interface. Specifies the interface type. For more information, use the question mark (?) online help function. Physical interface or virtual interface. Use the show interfaces command to see a list of all interfaces currently configured on the router. **Note** For more information about the syntax for the router, use the question mark (?) online help function.
vrf *vrf-name*	Displays client binding by vrf name.
ip-address *address*	Displays detailed client binding information per IP address or mac-address.
mac-address *address*	Displays detailed client binding information per mac-address.
srg	Displays client binding by SRG group.
srg-master	Displays client binding by SRG master.
srg-slave	Displays client binding by SRG slave.

Command Default

None.

Command Modes

EXEC

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
ip-services	read

Example

This is a sample output from the **show dhcp ipv4 server binding** command:

```
Router# show dhcp ipv4 server binding detail

Thu Aug  1 11:37:34.784 IST
MAC Address:                 ca01.4b16.0000
VRF:                         default
IP Address:                  10.10.10.7
Server IP Address:           10.10.10.2
ReceivedCircuit ID:          -
InsertedCircuit ID:          -
ReceivedRemote ID:           -
InsertedRemote ID:           -
ReceivedVSISO:               -
Auth. on received relay info:TRUE
ParamRequestOption:          -
SavedOptions:                -
Profile:                     TEST
Selected Profile:            TEST
State:                       BOUND
Lease:                       1800 secs (00:30:00)
Lease remaining:             1744 secs (00:29:04)
Client ID:
0x00-0x63-0x69-0x73-0x63-0x6F-0x2D-0x63-0x61-0x30-0x31-0x2E-0x34-0x62-0x31-0x36-0x2E-0x30-0x30-0x30-0x30-0x2D-0x50-0x6F-0x31-0x30-0x2E-0x31
Access Interface:            Bundle-Ether10.1
Access VRF:                  default
VLAN Id:                     100
Subscriber Label:            0x41
Subscriber Interface:        Bundle-Ether10.1.ip2
Srg State:                   NONE
Srg Group Id:                0
Event History:
Session Start:               Aug  1 10:38:05.426
PACKET_DISCOVER              :     0.001s
DPM_SUCCESS                  :     0.114s
DAPS_SUCCESS                 :     0.118s
PACKET_REQUEST               :     0.818s
LEASE_DPM_SUCCESS            :     1.181s
OTHER                        :    45.005s
```

Related Commands

Command	Description
show dhcp ipv4 server profile	Displays DHCP server profile information.
show dhcp ipv4 server statistics	Display DHCP server statistics.

show dhcp ipv4 server disconnect-history

To display DHCP server profile information with ipv4 binding for disconnect history, use the **show dhcp ipv4 server interface** command in EXEC mode.

show dhcp ipv4 server interface {**detail** | **location** | **mac-address**}

Syntax Description

detail	Displays detailed DHCP server profile information for server.
location	Displays detailed DHCP server profile information for node location.
mac-address	Displays detailed DHCP server profile information for client disconnect history information.

Command Default

None.

Command Modes

EXEC

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
ip-services	read

Example

This is a sample output from the **show dhcp ipv4 server interface** command:

```
RP/0/0/CPU0:ios#show dhcp ipv4 server disconnect-history
Thu Aug 15 16:24:51.736 IST
Codes: Amb - Ambiguous VLAN, B - Base, R - Relay, P - Proxy,
       SR - Server, S - Snoop, C - Client, INV - Invalid
       CID - Circuit Id, RID - Remote Id, INTF - Interface

Interface             Mode Profile Name                          Amb Lease Limit
------------------------------------------------------------------------------
```

show dhcp ipv4 server interface

To display DHCP server profile information with ipv4 binding for interfaces, use the **show dhcp ipv4 server interface** command in EXEC mode.

show dhcp ipv4 server interface { **Bundle-Ether** | **FastEthernet** | **FiftyGigE** | **FortyGigE** | **GigabitEthernet** | **HundredGigE** | **MgmtEth** | **PW-Ether** | **TenGigE** | **TwentyFiveGigE** }

Syntax Description

BVI	Displays Bridge-Group Virtual Interface.
Bundle-Ether	Displays aAggregated Ethernet interface(s).
FastEthernet	Displays detailed DHCP server profile information for FastEthernet/IEEE 802.3 interface(s).
FiftyGigE	Displays detailed DHCP server profile information for FiftyGigabitEthernet/IEEE 802.3 interface(s).
FortyGigE	Displays detailed DHCP server profile information for FortyGigabitEthernet/IEEE 802.3 interface(s).
GigabitEthernet	Displays detailed DHCP server profile information for GigabitEthernet/IEEE 802.3 interface(s).
HundredGigE	Displays detailed DHCP server profile information for HundredGigabitEthernet/IEEE 802.3 interface(s)e.
MgmtEth	Displays detailed DHCP server profile information for Ethernet/IEEE 802.3 interface(s).
PW-Ether	Displays detailed DHCP server profile information for PWHE ethernet interface.
TenGigE	Displays detailed DHCP server profile information for TenGigabitEthernet/IEEE 802.3 interface(s).
TwentyFiveGigE	Displays detailed DHCP server profile information for TwentyFiveGigabitethernet/IEEE 802.3 interface(s).

Command Default

None.

Command Modes

EXEC

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
ip-services	read

Example

This is a sample output from the **show dhcp ipv4 server interface** command:

```
RP/0/0/CPU0:ios#show dhcp ipv4 server interface
Thu Aug 15 16:24:51.736 IST
Codes: Amb - Ambiguous VLAN, B - Base, R - Relay, P - Proxy,
       SR - Server, S - Snoop, C - Client, INV - Invalid
       CID - Circuit Id, RID - Remote Id, INTF - Interface

Interface              Mode Profile Name                           Amb Lease Limit
-------------------------------------------------------------------------------------
```

show dhcp ipv4 server profile

To display DHCP server profile information with ipv4 binding, use the **show dhcp ipv4 server profile** command in EXEC mode.

show dhcp ipv4 server profile name *profile-name* [**location** *node-ID*]

Syntax Description

profile-name	Name of the profile.
location *node-ID*	Displays detailed DHCP server profile information for a specified node.

Command Default

None.

Command Modes

EXEC

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
ip-services	read

Example

This is a sample output from the **show dhcp ipv4 server profile** command:

```
Router# show dhcp ipv4 server profile name foo

Profile:   foo
VRF References:
Interface References: GigabitEthernet0/2/0/0
```

Related Commands

Command	Description
show dhcp ipv4 server binding	Displays DHCP client bindings for server.
show dhcp ipv4 server statistics	Displays DHCP server statistics.
show dhcp ipv4 server interface	Displays DHCP client bindings for server with respect to interfaces.
show dhcp ipv4 server disconnect-history	

show dhcp ipv4 server statistics

To display DHCP server statistics, use the **show dhcp ipv4 server statistics** command in EXEC mode.

show dhcp ipv4 server statistics [[**raw** {[| **all**] [| **include-zeroes**] [| **location** *node-ID*]]}

Syntax Description

raw	Displays debug statistics.
all	Displays debug statistics for base mode.
include-zeroes	Displays debug statistics that are zero.
location *node-ID*	Displays DHCP server statistics information for a specified node.

Command Default

None.

Command Modes

EXEC

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
ip-services	read

Example

This is a sample output from the **show dhcp ipv4 server statistics** command:

```
Router# show dhcp ipv4 server statistics
              VRF         |       RX       |      TX      |        DR       |
-------------------------------------------------------------------------------------
             default      |        0       |       0      |         0       |
```

Related Commands

Command	Description
show dhcp ipv4 server binding	Displays DHCP client bindings for server.
show dhcp ipv4 server profile	Displays DHCP server profile information.
show dhcp ipv4 server interface	Displays DHCP server profile information for interface.

Command	Description
show dhcp ipv4 server disconnect-history	Displays DHCP server profile information with respect to disconnect-history.

show dhcp ipv6 client

To display DHCP IPv6 client binding information, use the **show dhcp ipv6 client** command in XR EXEC mode.

show dhcp ipv6 client <*interfaceName*> [**detail**] [**debug**]

Syntax Description

interfaceName	Displays the DHCP IPv6 address of the specified interface.
detail	(Optional) Specifies detailed results.
debug	(Optional) Displays internal debugging information.

Command Default

No default behavior or values

XR EXEC mode

Command History

Release	Modification
Release 7.2.1	This command was introduced.

Usage Guidelines

Use the **show dhcp ipv6 client** command to display the DHCP IPv6 for the specified client.

Task ID

Task ID	Operations
IP-Services	read

Examples

The following example shows how to display DHCP IPv6 binding information:

```
RP/0/0/CPU0:ios#show dhcp ipv6  client
Mon May  6 16:35:32.581 UTC

    Interface name          IP Address        Binding State         Lease Time Rem
----------------------     ------------      ---------------   ----------------------
MgmtEth0_0_CPU0_0          2001:DB8::1        BOUND             1688 secs (00:28:08)

RP/0/0/CPU0:ios#
RP/0/0/CPU0:ios# show dhcp ipv6  client binding ?
  MgmtEth          Ethernet/IEEE 802.3 interface(s)
  detail           Show detailed client binding information
  |                Output Modifiers
  <cr>
Router# show dhcp ipv6  client   detail
Mon May  6 16:35:56.579 UTC

-----------------------------------------------------
Client Interface name         : MgmtEth0_0_CPU0_0
Client Interface handle       : 0x1280
Client Interface VRF name     : default
Client ChAddr                 : 000c.292f.950e
Client ID                     : MgmtEth0_0_CPU0_0
Client State                  : BOUND
```

```
Client IP Address (Dhcp)      : 2001:DB8::1
Client IP Address Mask        : 2001:db8:abcd:0012::0/64
Client Lease Time Allocated   : 1800 secs (00:30:00)
Client Lease Time Remaining   : 1664 secs (00:27:44)
Client Selected Server Addr   : 2001:DB8::2
-------------------------------------------------------

Router#
Router# show dhcp ipv6  client binding detail ?
  MgmtEth          Ethernet/IEEE 802.3 interface(s)
  debug            Show detailed debug level client binding information
  |                Output Modifiers
  <cr>
Router# show dhcp ipv6  client detail debug
Mon May  6 16:36:43.836 UTC

-------------------------------------------------------
Client Interface name         : MgmtEth0_0_CPU0_0
Client Interface handle       : 0x1280
Client Interface VRF name     : default
Client ChAddr                 : 000c.292f.950e
Client ID                     : MgmtEth0_0_CPU0_0
Client State                  : BOUND
Client IP Address (Dhcp)      : 2001:DB8::1
Client IP Address Mask        : 2001:db8:abcd:0012::0/64
Client Lease Time Allocated   : 1800 secs (00:30:00)
Client Lease Time Remaining   : 1617 secs (00:26:57)
Client Selected Server Addr   : 2001:DB8::2
Client Interface VRF id       : 0x60000000
Client Interface VRF Table id : 0xe0000000
Client XID                    : 0xa7f
Client Timers Running         : 0x2 (T1_RENEW_TIMER)
Client Renew Time Allocated   : 900 secs (00:15:00)
Client Renew Time Adjusted    : 900 secs (00:15:00)
Client Rebind Time Allocated  : 1575 secs (00:26:15)
Client Rebind Time Adjusted   : 1575 secs (00:26:15)
Client Checkpoint object id   : 0x80002fd8
Client IPv6 MA configured     : TRUE
-------------------------------------------------------

Router#
Router# show dhcp ipv6 client  mgmtEth 0/0/CPU0/0
Mon May  6 16:49:54.382 UTC

    Interface name         IP Address      Binding State         Lease Time Rem
----------------------    ------------    ---------------    ----------------------
MgmtEth0_0_CPU0_0          2001:DB8::1     BOUND             1727 secs (00:28:47)
Router#
```

Related Commands

Command	Description
clear dhcp ipv6 client, on page 10	This command clears the DHCPv6 client binding information configured on a given interface.

show dhcp ipv6 database

To display the Dynamic Host Configuration Protocol (DHCP) for IPv6 binding database information, use the **show dhcp ipv6 database** command in XR EXEC mode.

show dhcp ipv6 database *[agent-URL]* [**location** *location*]

Syntax Description

agent-URL	(Optional) Flash, NVRAM, FTP, TFTP, or Remote Copy Protocol (RCP) uniform resource locator.
location	Displays the database information of the DHCPv6 node.
location	Name of the DHCPv6 node.

Command Default

None

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

Each permanent storage to which the binding database is saved is called the *database agent*. An agent can be configured using the **dhcp ipv6 database** command. Supported database agents include FTP and TFTP servers, RCP, Flash file system, and NVRAM.

The **show dhcp ipv6 database** command displays DHCP for IPv6 binding database agent information. If the *agent-URL* argument is specified, only the specified agent is displayed. If the *agent-URL* argument is not specified, all database agents are shown.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
ip-services	read

Examples

This is a sample output from the **show dhcp ipv6 database** command:

```
Router# show dhcp ipv6 database location 0/0/CPU0

Database:
Current file version:               1
Full file:
  write interval:                   5 minutes
  last file name:                   /disk0:/dhcp/dhcpv6_srpb_0_odd
  last write time:                  Feb-27-2013-11:45:06
  write count:                      5
  failed write count:               0
  record count:                     0
  last write error:                 -
```

```
  last write error timestamp:        -
Incremental file:
  write interval:                    2 minutes
  last file name:                    /disk0:/dhcp/dhcpv6_srpb_0_odd_inc
  last write time:                   Feb-27-2013-11:49:06
  write count:                       10
  failed write count:                0
  record count:                      0
  last write error:                  -
  last write error timestamp:        -
```

Related Commands

Command	Description
show dhcp ipv6 database full-write-interval	This command displays DHCP for IPv6 binding database information at full file write interval. The defalult interval is 10 minutes.
show dhcp ipv6 database incremental-write-interval	This command displays DHCP for IPv6 binding database information at incremental file write interval. The default interval is 1 minute.
show dhcp ipv6 database proxy	This command enable DHCP proxy binding database storage to file system.
show dhcp ipv6 database relay	This command enables DHCP relay binding database storage to file system.
show dhcp ipv6 database server	This command enables DHCP server binding database storage to file system.

show dhcp ipv6 proxy

To display DHCP proxy profile information with ipv6 binding, use the **show dhcp ipv6 profile** command in EXEC mode.

show dhcp ipv6 proxy {**binding** | **disconnect-history** | **interface** | **profile** | **statistics**}

Syntax Description

binding	Displays client bindings for the proxy.
disconnect-history	Displays disconect history for the proxy.
interface	Displays proxy interface information.
profile	Displays proxy profile information.
statistics	Displays proxy statistics.

Command Default

None.

Command Modes

EXEC

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
ip-services	read

Example

This is a sample output from the **show dhcp ipv4 proxy** command:

```
Router# show dhcp ipv4 proxy name foo

Profile:   foo
VRF References:
Interface References: GigabitEthernet0/2/0/0
```

show dhcp ipv6 proxy binding

To display the client bindings for Dynamic Host Configuration Protocol (DHCP) proxy, use the **show dhcp ipv6 proxy binding** command in XR EXEC mode.

show dhcp ipv6 proxy binding {**detail** | **duid** | **interface** | **interface-id** | **location** | **mac-address** | **remote-id** | **srg** | **srg-master** | **srg-slave** | **state** | **summary** | **vrf**}

Syntax Description

detail	Displays detailed bindings for proxy.
duid	Displays client bindings for DUID.
interface	Displays client bindings by Interface.
interface-id	Displays client bindings by Interface ID.
location	Specifies the node location.
mac-address	Displays detailed client binding information.
remote-id	Displays client binding by Remote ID.
srg	Displays client Bbnding by SRG group.
srg-master	Displays client Bbnding by SRG master.
srg-slave	Displays client Bbnding by SRG slave.
summary	Displays summary bindings for proxy.
vrf	Displays client bindings by VRF name.

Command Default

None

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
ip-services	read

This is a sample output from the **show dhcp ipv6 proxy binding** command:

```
Router# show dhcp ipv6 proxy binding
```

```
Summary:
  Total number of Proxy bindings = 1
Prefix: 2001::/60 (Gi0/0/0/1)
  DUID: 00030001ca004a2d0000
  IAID: 00020001
  lifetime: 2592000
  expiration: Nov 25 2010 16:47

Router# show dhcp ipv6 proxy binding summary

Total number of clients: 2

     STATE              |              COUNT             |
                        |     IA-NA      |    IA-PD      |
-------------------------------------------------------------
  INIT                  |             0  |            0  |
  SUB VALIDATING        |             0  |            0  |
  ADDR/PREFIX ALLOCATING|             0  |            0  |
  REQUESTING            |             0  |            0  |
  SESSION RESP PENDING  |             2  |            0  |
  ROUTE UPDATING        |             0  |            0  |
  BOUND                 |             0  |            0  |
```

show dhcp ipv6 proxy interface

To display the proxy interface information for Dynamic Host Configuration Protocol (DHCP), use the **show dhcp ipv6 proxy interface** command in XR EXEC mode.

show dhcp ipv6 proxy interface {*typeinterface-path-id*} {**location***location*}

Syntax Description

type	Interface type. For more information, use the question mark (?) online help function.
interface-path-id	Physical interface or virtual interface. **Note** Use the **show interfaces** command to see a list of all interfaces currently configured on the router. For more information about the syntax for the router, use the question mark (**?**) online help function.
location	Displays the node location by Interface.
location	Displays the fully qualified location specification of an interface.

Command Default

None

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
ip-services	read

This is a sample output from the **show dhcp ipv6 proxy interface** command:

```
Router# show dhcp ipv6 proxy interface

Tue Sep  4 19:14:54.056 UTC
Codes: Amb - Ambiguous VLAN, B - Base, R - Relay, P - Proxy,
       SR - Server, S - Snoop, C - Client, INV - Invalid
       CID - Circuit Id, RID - Remote Id, INTF - Interface

Interface             Mode Profile Name                          Amb Lease Limit
------------------------------------------------------------------------------
BE1.100               P    pxy1                                  No  None
BE1.200               P    pxy1                                  No  None
```

```
BE1.250                 P    pxy1                                  Yes None
BE1.400                 P    pxy1                                  Yes None
```

show dhcp ipv6 server

To display DHCP server profile information with ipv6 binding, use the **show dhcp ipv6 server profile** command in EXEC mode.

show dhcp ipv6 server { | **binding** | **disconnect-history** | **interface** | **profile** | **statistics**}

Syntax Description

binding	Displays client bindings for the server.
disconnect-history	Displays disconect history for the server.
interface	Displays server interface information.
profile	Displays server profile information.
statistics	Displays server statistics.

Command Default

None.

Command Modes

EXEC

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
ip-services	read

Example

This is a sample output from the **show dhcp ipv4 server profile** command:

```
Router# show dhcp ipv4 server profile name foo

Profile:   foo
VRF References:
Interface References: GigabitEthernet0/2/0/0
```

show dhcp vrf ipv4 server statistics

To display DHCP server statistics for the default vrf or a specific vrf, use the **show dhcp vrf ipv4 server statistics** command in XR EXEC mode.

show dhcp vrf { **default** | *vrf-name* } [**location** *node-ID*]

Syntax Description

default	Display DHCP server statistics for the default vrf.
vrf-name	Display DHCP server statistics for a specific vrf.
location *node-ID*	Displays DHCP server statistics information for a specified node.

Command Default

None

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
ip-services	read

Example

This is a sample output from the **show dhcp vrf default ipv4 server statistics** command:

```
Router# show dhcp vrf default ipv4 server statistics
Thu Aug  1 11:41:48.255 IST

DHCP IPv4 Proxy/Server Statistics for VRF default:

     TYPE          |    RECEIVE    |    TRANSMIT   |     DROP      |
-----------------------------------------------------------------------
 DISCOVER          |             5  |             0  |             0  |
 OFFER             |             0  |             3  |             0  |
 REQUEST           |            15  |             0  |             0  |
 DECLINE           |             0  |             0  |             0  |
 ACK               |             0  |            15  |             0  |
 NAK               |             0  |             0  |             0  |
 RELEASE           |             0  |             0  |             0  |
 INFORM            |             0  |             0  |             0  |
```

```
 LEASEQUERY       |            0  |            0  |            0  |
 LEASEUNASSIGNED  |            0  |            0  |            0  |
 LEASEUNKNOWN     |            0  |            0  |            0  |
 LEASEACTIVE      |            0  |            0  |            0  |
 BOOTP-REQUEST    |            0  |            0  |            0  |
 BOOTP-REPLY      |            0  |            0  |            0  |
RP/0/0/CPU0:server#
```

show tech support dhcp ipv4 client

To retrieve the DHCP client show tech support information, use the **show tech dhcp ipv4 client** command in XR EXEC mode.

show tech-support dhcp ipv4 client <show-tech-options>

Syntax Description

show-tech-options	Displays the DHCP IPv4 client show tech-support options.

Command Default

No default behavior or values

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

Use the **show tech-support dhcp ipv4 client** command to retrieve the DHCP show-tech options for the specified interface.

Task ID

Task ID	Operations
IP-Services	Execution

Examples

The following example shows how to clear the DHCP client binding statistics information:

```
Router# show tech-support dhcp ipv4 client ?
  file      Specify a valid file name (e.g. disk0:tmp.log)(cisco-support)
  terminal  Send output to terminal(cisco-support)
Router# show tech-support dhcp ipv4 client file ?
  WORD        Send to file
  bootflash:  Send to bootflash: file system(cisco-support)
  disk0:      Send to disk0: file system(cisco-support)
  disk0a:     Send to disk0a: file system(cisco-support)
  disk1:      Send to disk1: file system(cisco-support)
  disk1a:     Send to disk1a: file system(cisco-support)
  ftp:        Send to ftp: file system(cisco-support)
  nvram:      Send to nvram: file system(cisco-support)
  rcp:        Send to rcp: file system(cisco-support)
  tftp:       Send to tftp: file system(cisco-support)
Router# show tech-support dhcp ipv4 client file disk0?
WORD  disk0:  disk0a:
Router# show tech-support dhcp ipv4 client file disk0:/dhcpv4-client-showtech.tgz
Fri Jun  6 08:25:24.793 UTC
Router# dir disk0:
Fri Jun  6 08:25:47.321 UTC

Directory of disk0:

2           drwx  1024        Thu Mar 13 06:12:03 2014  .boot
…
```

```
3           -rw-  83337       Fri Jun  6 08:25:26 2014  dhcpv4-client-showtech.tgz

1911537664 bytes total (1838081024 bytes free)
Router#
```

Related Commands

show dhcp ipv4 client statistics	Displays the statistics of the DHCP client.
show tech support dhcp ipv4 server	Displays the tech support for DHCP ipv4 server profile.
show tech support dhcp ipv4 proxy	Displays the tech support for DHCP ipv4 proxy profile.
show tech support dhcp ipv4 relay	Displays the tech support for DHCP ipv4 relay profile.
show tech support dhcp ipv6 server	Displays the tech support for DHCP ipv6 server profile.
show tech support dhcp ipv6 proxy	Displays the tech support for DHCP ipv6 proxy profile.
show tech support dhcp ipv6 relay	Displays the tech support for DHCP ipv6 relay profile.

show tech-support dhcp ipv6 client

To retrieve the DHCP client show tech support information, use the **show tech dhcp ipv6 client** command in XR EXEC mode.

show tech-support dhcp ipv6 client <show-tech-options>

Syntax Description

show-tech-options	Displays the DHCP IPv6 client show tech-support options.

Command Default

No default behavior or values

Command Modes

XR EXEC mode

Command History

Release	Modification
Release 7.2.1	This command was introduced.

Usage Guidelines

Use the **show tech-support dhcp ipv6 client** command to retrieve the DHCP show-tech options for the specified interface.

Task ID

Task ID	Operations
IP-Services	Execution

Examples

The following example shows how to display the DHCP IPv6 client binding statistics information:

```
Router# show tech-support dhcp ipv6 client ?
  file      Specify a valid file name (e.g. disk0:tmp.log)(cisco-support)
  terminal  Send output to terminal(cisco-support)
Roiuter# show tech-support dhcp ipv6 client file ?
  WORD        Send to file
  bootflash:  Send to bootflash: file system(cisco-support)
  disk0:      Send to disk0: file system(cisco-support)
  disk0a:     Send to disk0a: file system(cisco-support)
  disk1:      Send to disk1: file system(cisco-support)
  disk1a:     Send to disk1a: file system(cisco-support)
  ftp:        Send to ftp: file system(cisco-support)
  nvram:      Send to nvram: file system(cisco-support)
  rcp:        Send to rcp: file system(cisco-support)
  tftp:       Send to tftp: file system(cisco-support)
Router# show tech-support dhcp ipv4 client file disk0?
WORD  disk0:  disk0a:
Router# show tech-support dhcp ipv6 client file disk0:/dhcpv4-client-showtech.tgz
Fri Jun  6 08:25:24.793 UTC
Router# dir disk0:
Fri Jun  6 08:25:47.321 UTC

Directory of disk0:

2           drwx  1024        Thu Mar 13 06:12:03 2014  .boot
…
```

```
3           -rw-  83337       Fri Jun  6 08:25:26 2014  dhcpv6-client-showtech.tgz

1911537664 bytes total (1838081024 bytes free)
Router#
```

Related Commands

Command	Description
show dhcp ipv4 client, on page 56	Displays DHCP IPv4 client information.
show dhcp ipv4 client statistics, on page 58	Displays the statistics of the DHCP client.

trust relay-reply

To configure a DHCP IPv6 profile to enable processing relay-replies, use the **trust relay-reply** command in DCHP IPv6 profile configuration mode. To restore the interface to the default behavior, use the **no** form of the command.

trust relay-reply
no trust relay-reply

This command has no keywords or arguments.

Command Default

By default, all interfaces are trusted.

Command Modes

DHCP IPv6 profile configuration

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
ip-services	read, write

Example

```
Router# configure
Router(config)# dhcp ipv6
Router(config-dhcpv6)# profile downstream proxy
Router(config-dhcpv6-profile)# helper-address ff05::1:3
Router(config-dhcpv6-profile)# exit
Router(config-dhcpv6)# profile upstream proxy
Router(config-dhcpv6-profile)# trust relay-reply
```

Related Commands

Command	Description
helper-address (ipv6), on page 31	Configures the Dynamic Host Configuration Protocol (DHCP) IPv6 relay agent for prefix delegation.