

DHCP Commands

This chapter describes the Cisco IOS XR software commands used to configure and monitor Dynamic Host Configuration Protocol (DHCP) features.

For detailed information about DHCP concepts, configuration tasks, and examples, refer to the *IP Addresses and Services Configuration Guide for Cisco NCS 5000 Series Routers*.

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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 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 5	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 4	Clears all client bindings in server.

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 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 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*]]

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.

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
```

database (DHCPv6 Binding)

To enable Dynamic Host Configuration Protocol IPv6 (DHCPv6) binding database write to the system persistent memory, use the **database** command in the DHCP IPv6 configuration mode. To disable the DHCPv6 binding table write and to delete the binding table write files from the file system, use the **no** form of this command.

database [**proxy**] [**relay**] [**full-write-interval** *full-write-interval*] [**incremental-write-interval** *incremental-write-interval*]
no database

Syntax Description

proxy	(Optional) Enables DHCPv6 proxy binding database write to the system file system.
relay	(Optional) Enables DHCPv6 relay binding database write to the system file system.
full-write-interval	Sets the interval for a full file write.
full-write-interval	Full file write interval in minutes. The range is from 0 to 1440. The default value is 10.
incremental-write-interval	Sets the interval for an incremental file write.
incremental-write-interval	Incremental file write interval in minutes. The range is from 0 to 1440. The default value is 1.

Command Default

If the command is executed without the keywords **full-write-interval** or **incremental-write-interval**, then the default values of these write intervals are used.

Command Modes

DHCP IPv6 configuration

DHCP IPv6 profile relay configuration

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

All instances of the previous files are deleted after a full persistent binding file write.

The files are written to the file system even if DHCP has no bindings. The incremental file is written even if no new bindings are found in the binding table.

The incremental file does not track deleted bindings. If a binding is deleted and then a system reload occurs before the next full file write, then that binding may reappear when the binding table is recovered from the file system. In this case, the user has to reapply the command to delete the binding. If the binding was deleted because of lease expiry, then it is again deleted when the binding table is recovered from the file system.

The selection of the file system to be used is fixed and not configurable. The file cannot be stored to an external system. Only one file system is used, and if access to this file system fails, then the DHCP binding table backup to file system does not function and an error is logged.

Task ID

Task ID	Operation
ip-services	read, write

This example shows how to enable DHCPv6 binding database write to the system persistent memory:

```
Router# configure
Router# dhcp ipv6
Router(config-dhcpv6)# database proxy full-write-interval 15 incremental-write-interval 5
```

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
```

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:

```
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)# 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:

```
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)# 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 14	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 14	Enables DHCP for IPv4 and enters DHCP IPv4 configuration mode.

Command	Description
helper-address, on page 22	Configures the DHCP relay agent to relay packets to a specific DHCP Server.
interface (DHCP), on page 26	Configures DHCP profile on an interface.
profile (DHCP), on page 34	Configures a relay profile for the DHCP IPv4 component.
relay information check , on page 36	Configures a DHCP server to validate the relay agent information option in forwarded BOOTREPLY messages.
relay information option , on page 38	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 40	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.

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 15	Enables Dynamic Host Configuration Protocol (DHCP) for IPv6.

interface (DHCP)

To enable Dynamic Host Configuration Protocol (DHCP) for IPv4 or IPv6 on an interface, use the **interface** command in the appropriate configuration mode. To disable DHCPv4 or DHCPv6 on an interface, use the **no** form of the command.

interface *type* *interface-path-id* { **base** | **proxy** | **relay** | **server** | **snoop** }
profile *profile-name*

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.
server	Attaches a server profile for the specified interface.
relay	Attaches a relay profile for the specified interface.
snoop	Attaches a snoop profile for the specified interface.
proxy	Attaches the proxy profile to an interface.
base	Attaches a base profile for the specified interface.
profile *profile-name*	Specifies the profile name.

Command Default

None

Command Modes

DHCP IPv6 configuration

DHCP IPv4 configuration

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

The support for **base** profile option for DHCP IPv6 is available in BNG from Release 6.2.1 and later. For more details, refer *PPP Class-based DHCPv6 Mode Selection* feature in *Cisco ASR 9000 Series Aggregation Services Router Broadband Network Gateway Configuration Guide*.

Task ID

Task ID	Operations
ip-services	read, write

Examples

This is an example of attaching a relay profile to an interface:

```
Router(config)# dhcp ipv4
Router(config-dhcpv4)# interface tenGigE 0/4/0/4 relay profile RELAY_PROFILE
```

This is an example of enabling the DHCP interface mode on a Packet over Sonet/SDH (POS) interface using the **interface** command:

```
Router(config)# dhcp ipv6
Router(config-dhcpv6)# interface POS 0/5/0/0 relay
```

This is an example of enabling the DHCP interface mode on a Packet over Sonet/SDH (POS) interface using the **interface** command:

```
Router(config)# dhcp ipv4
Router(config-dhcpv4)# interface POS 0/5/0/0 server profile TEST
```

This example shows how to attach a base profile to an interface, in DHCPv6 mode:

```
Router(config)# dhcp ipv6
Router(config-dhcpv6)# interface Bundle-Ether302.2501 base profile base_TEST
```

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
```

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 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.

subnet-mask

To configure subnet mask that DHCP clients should use, use the **subnet-mask** command in DHCP IPv4 server profile configuration mode.

subnet-mask *number*

Syntax Description

number	Specify DHCP server's subnet mask number.

Command Default

None

Command Modes

DHCP IPv4 Server Profile configuration

DHCP IPv4 Server Profile Class submode

Command History

Release	Modification
Release 6.0.1	This command was introduced.

Usage Guidelines

If subnet-mask is not configured, then the DHCP server will send subnet mask of an access interface to the client.

Task ID

Task ID	Operation
ip-services	read, write

This example shows how to configure subnet mask for DHCP server:

```
Router# config
Router(config)# dhcp ipv4
Router(config-dhcpv4)# profile DHCP_SERVER_PROFILE server
Router(config-dhcpv4-server-profile)# subnet-mask 255.255.255.0
```

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 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 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 relay binding

To display DHCPv6 client bindings for relay, use the **show dhcp ipv6 relay binding** command in XR EXEC mode.

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

Syntax Description

client-duid *client-duid-number*	(Optional) Displays 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.
detail	(Optional) Displays detailed DHCPv6 relay client binding information for all clients.
interface *type interfac-path-id*	(Optional) Displays DHCPv6 relay client binding by 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.
location *node-id*	(Optional) Displays detailed DHCPv6 relay client binding information for a specified node. The *node-id* argument is entered in the *rack/slot/module* notation.
summary	(Optional) Displays the summary of DHCPv6 relay client binding.
vrf *vrf-name*	(Optional) Displays DHCPv6 relay client binding information for a VPN routing and forwarding (VRF) instance.

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 the sample output for show dhcp ipv6 relay binding command:

```
Router# show dhcp ipv6 relay binding
Summary:
Total number of clients: 1

IPv6 Address: fc00:35:0:ef5c:a932:239f:1b0e:e4ed/128 (BVI3500)
    Client DUID: 000100011b626e6f0000cae2da26
    IAID: 0x0
    VRF: default
    Lifetime: 172800 secs (2d00h)
    Expiration: 172766 secs (1d23h)
```

show dhcp ipv6 relay statistics

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

show dhcp ipv6 relay statistics [**debug** [**all** | **include-zeroes** | **location** *node-id*]] [**vrf** *vrf-name*] [**location** *nide-id*]

Syntax Description

debug	(Optional) Displays DHCPv6 relay debug statistics information.
all	(Optional) Displays DHCPv6 relay debug statistics information for all location.
include-zeroes	(Optional) Displays DHCPv6 relay debug statistics information that are zero.
location *node-id*	(Optional) Displays DHCPv6 relay debug statistics information for for a specified node. The *node-id* argument is entered in the *rack/slot/module* notation.
vrf *vrf-name*	(Optional) Displays DHCPv6 relay statistics information for a VPN routing and forwarding (VRF) instance.
location *node-id*	(Optional) Displays detailed DHCPv6 relay statistics 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	read

This is the sample output for **show dhcp ipv6 relay statistics** command:

```
Router# show dhcp ipv6 relay statistics
                  VRF                        |       RX        |       TX        |        DR
|
-------------------------------------------------------------------------------------------------
default                                      |           241   |             5   |           236   |
**nVSatellite                                |             0   |             0   |             0   |
red4                                         |             0   |             0   |             0   |
red6                                         |             0   |             0   |             0   |
**eint                                       |             0   |             0   |             0   |
```

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 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#
```

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 24	Configures the Dynamic Host Configuration Protocol (DHCP) IPv6 relay agent for prefix delegation.