DHCP Commands

This chapter describes the Cisco IOS XR software commands used to configure and monitor Dynamic Host Configuration Protocol (DHCP) features on Cisco ASR 9000 Series Aggregation Services Routers.

For detailed information about DHCP concepts, configuration tasks, and examples, refer to the *IP Addresses and Services Configuration Guide for Cisco ASR 9000 Series Routers*.

bootfile

To configure the boot file, use the **bootfile** command in the DHCPv4 server profile submode. To deconfigure, use the **no** form of this command.

bootfile *boot-file-name*
no bootfile *boot-file-name*

Syntax Description

boot-file-name	Name of the boot file.

Command Default

None

Command Modes

DHCPv4 Server Profile

DHCPv4 Server Profile Class Sub-mode

Command History

Release	Modification
Release 5.1	This command was introduced.
Release 5.2.2	This command is supported in DHCPv4 server profile class sub-mode.

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 of the **bootfile** command:

```
RP/0/RSP0/CPU0:router# config
RP/0/RSP0/CPU0:router(config)# dhcp ipv4
RP/0/RSP0/CPU0:router(config-dhcpv4)# profile DHCP_SERVER_PROFILE server
RP/0/RSP0/CPU0:router(config-dhcpv4-server-profile)# bootfile USERS
```

clear dhcp ipv4 server binding

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

clear dhcp ipv4 server binding [**location** *node-ID*] [**interface** *type interface-path-ID*] [**vrf** *vrf-name*] [**ip-address** *address*] [**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.
vrf *vrf-name*	Clears client binding by vrf name.
ip-address *address*	Clears detailed client binding information per IP address.
mac-address *address*	Clears detailed client binding information per mac-address.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
Release 5.1	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:

```
RP/0/RSP0/CPU0:router# clear dhcp ipv4 server binding
```

Related Commands

Command	Description
clear dhcp ipv4 server statistics, on page 6	Clears DHCP server statistics.

clear dhcp ipv4 server statistics

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

clear dhcp ipv4 server statistics [[**raw** [**all**] [**include-zeroes**] [**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

EXEC mode

Command History

Release	Modification
Release 5.1	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:

```
RP/0/RSP0/CPU0: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 ipv4 snoop binding

To clear snoop bindings, use the **clear dhcp ipv4 snoop binding** command in EXEC mode.

clear dhcp ipv4 snoop binding [**bridge-domain** *name*] [**mac-address** *mac-address*]

Syntax Description

bridge-domain	(Optional) Clears DHCP snoop bindings for a specific bridge domain.
name	(Optional) Bridge domain name
mac-address	(Optional) Clears DHCP snoop bindings for a specified MAC address.
mac-address	(Optional) MAC address.

Command Default

Clears all snoop bindings.

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operations
ip-services	read, write

Examples

The following is an example of the **clear dhcp snoop binding** command removing binding for bridge domain ISP1:

```
RP/0/RSP0/CPU0:router# clear dhcp ipv4 snoop binding bridge-domain ISP1
```

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 EXEC mode.

clear dhcp ipv6 proxy binding [*ipv6-prefix*]

Syntax Description

ipv6-prefix	The IPv6 network 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.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 4.1.1	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:

```
RP/0/RSP0/CPU0:router# clear dhcp ipv6 proxy binding
```

Related Commands

Command	Description
show dhcp ipv6 proxy binding , on page 87	Displays Dynamic Host Configuration Protocol (DHCP) relay bindings for prefix delegation.

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

DHCPv4 Server Profile Class Sub-mode

Command History

Release	Modification
Release 5.1	This command was introduced.
Release 5.2.2	This command is supported in DHCPv4 server profile class sub-mode.

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:

```
RP/0/RSP0/CPU0:router# config
RP/0/RSP0/CPU0:router(config)# dhcp ipv4
RP/0/RSP0/CPU0:router(config-dhcpv4)# profile DHCP_SERVER_PROFILE server
RP/0/RSP0/CPU0:router(config-dhcpv4-server-profile)# default-router 10.20.1.2
```

destination (DHCP IPv6)

To specify a destination address to which client messages are forwarded and to enable Dynamic Host Configuration Protocol (DHCP) for IPv6 relay service on the interface, use the **destination** command in DHCP IPv6 interface relay configuration mode. To remove a relay destination on the interface or delete an output interface for a destination, use the **no** form of this command.

destination *ipv6 address interface-path-id*
no destination *ipv6 address*

Syntax Description

ipv6 address address	IPv6 address in the form documented in RFC 2373, where the address is specified in hexadecimal using 16-bit values between colons.

interface-path-id	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 values 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 (RP0 or RP1) and the module is CPU0. Example: interface MgmtEth0/RP1/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

Relay function is disabled and there is no relay destination on the interface.

Command Modes

DHCP IPv6 interface relay configuration

Command History

Release	Modification
Release 4.1.0	Support for DHCP IPv6 relay service.

Usage Guidelines

The **destination** command specifies a destination address to which client messages are forwarded and enables DHCP for IPv6 relay service on the interface. When relay service is enabled on an interface, a DHCP for IPv6 message received on that interface is forwarded to all configured relay destinations. The incoming DHCP for IPv6 message may have come from a client on that interface, or it may have been relayed by another relay agent.

The relay destination can be a unicast address of a server or another relay agent, or it may be a multicast address. There are the following two types of relay destination addresses:

- A link-scoped unicast or multicast IPv6 address, for which a user must specify an output interface
- A global unicast IPv6 address, for which a user can specify an output interface for this kind of address.
- A global or site-scope multicast IPv6 address, for which a user can specify an output interface for this kind of address if 'mhost ipv6 default-interface' is specified.

If no output interface is configured for a destination, the output interface is determined by routing tables. In this case, it is recommended that a unicast or multicast routing protocol be running on the router.

Multiple destinations can be configured on one interface, and multiple output interfaces can be configured for one destination. When the relay agent relays messages to a multicast address, it sets the hop limit field in the IPv6 packet header to 32.

Unspecified, loopback, and node-local multicast addresses are not acceptable as the relay destination. If any one of them is configured, the message "Invalid destination address" is displayed.

Note that it is not necessary to enable the relay function on an interface for it to accept and forward an incoming relay reply message from servers. By default, the relay function is disabled, and there is no relay destination on an interface. The **no** form of the command removes a relay destination on an interface or deletes an output interface for a destination. If all relay destinations are removed, the relay service is disabled on the interface.

The DHCP for IPv6 client, server, and relay functions is mutually exclusive on an interface. When one of these functions is already enabled and a user tries to configure a different function on the same interface, one of the following messages is displayed: “Interface is in DHCP client mode,” “Interface is in DHCP server mode,” or “Interface is in DHCP relay mode.”

Task ID

Task ID	Operations
ip-services	read, write

Examples

The following is an example of the **destination** command on an interface:

```
RP/0/RSP0/CPU0:router(config)# dhcp ipv6
RP/0/RSP0/CPU0:router(config-dhcpv6)# interface tenGigE 0/5/0/0 relay
RP/0/RSP0/CPU0:router(config-dhcpv6-if)# destination 10:10::10
```

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

Syntax Description

This command has no keywords or arguments.

Command Modes

None

Command Modes

Global Configuration mode

Command History

Release	Modification
Release 3.7.2	This command was introduced.
Release 4.2.0	This command was supported for BNG.

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:

```
RP/0/RSP0/CPU0:router# dhcp ipv4
RP/0/RSP0/CPU0:router(config-dhcpv4)#
```

show dhcp ipv4 client

To display DHCP client binding information, use the **show dhcp ipv4 client** command in 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

EXEC mode

Command History

Release	Modification
Release 5.2.0	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 EXEC mode.

show dhcp ipv4 client <*interfaceName*> **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

EXEC mode

Command History

Release	Modification
Release 5.2.0	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 : "..."
```

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 EXEC mode.

This is a test.

clear dhcp ipv4 client *<interfaceName>*

Syntax Description

interfaceName	Clears and restarts the DHCP IPv4 information of the specified interface.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 5.2.0	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
Router# 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)

Router# 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 EXEC mode.

clear dhcp ipv4 client <*interfaceName*> **statistics**

Syntax Description

interfaceName	DHCP IPv4 client enabled interface.
statistics	Clears DHCP IPv4 statistical information for the specified interface.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 5.2.0	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

Command	Description
show dhcp ipv4 client, on page 16	Displays DHCP IPv4 client information.

show tech support dhcp ipv4 client

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

EXEC mode

Command History

Release	Modification
Release 5.2.0	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

Command	Description
show dhcp ipv4 client statistics, on page 18	Displays the statistics of the DHCP client.

dhcp ipv6

To enable Dynamic Host Configuration Protocol (DHCP) for IPv6 and to enter DHCP IPv6 configuration mode, use the **dhcp ipv6** command in Global Configuration 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

Global Configuration mode

Command History

Release	Modification
Release 4.1.0	This command was introduced.
Release 4.3.0	This command was supported for BNG.

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:

```
RP/0/RSP0/CPU0:router(config)# dhcp ipv6
RP/0/RSP0/CPU0:router(config-dhcpv6)#
```

dhcp ipv4 none

To disable DHCP snooping on a specific port, use the **dhcp ipv4 none** command in l2vpn bridge group bridge-domain interface configuration mode.

dhcp ipv4 none

Syntax Description

This command has no keywords or arguments.

Command Default

No default behavior or values

Command Modes

l2vpn bridge group bridge-domain interface configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
ip-services	read, write

Examples

The following example shows how to disable DHCP snooping on GigabitEthernet interface 0/0/0/0:

```
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd)# interface gigabitethernet 0/0/0/0
RP/0/RSP0/CPU0:router(config-l2vpn-bg-bd-if)# dhcp ipv4 none
```

Related Commands

Command	Description
show dhcp ipv4 snoop binding, on page 79	Displays DHCP relay agent status specific to a relay profile.

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/RSP0/CPU0:router# config
RP/0/RSP0/CPU0:router(config)# dhcp ipv4
RP/0/RSP0/CPU0:router(config-dhcpv4)# profile DHCP_SERVER_PROFILE server
RP/0/RSP0/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/RSP0/CPU0:router# config
RP/0/RSP0/CPU0:router(config)# dhcp ipv4
RP/0/RSP0/CPU0:router(config-dhcpv4)# profile DHCP_SERVER_PROFILE server
RP/0/RSP0/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**}]

Syntax Description

exclude-vlan	Excludes VLANs from the client key; only MAC address and interface form the client key.

Command Default

By default, duplicate MAC address support is disabled.

Command Modes

DHCP IPv4 configuration

Command History

Release	Modification
Release 6.1.2	This command was introduced in BNG, with an addition of **exclude-vlan** option to exclude VLANs from the client key.
Release 4.3.2	This command was introduced.

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.

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:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# dhcp ipv4
RP/0/RSP0/CPU0:router(config-dhcpv4)# duplicate-mac-allowed exclude-vlan
```

Related Commands

Command	Description
dhcp ipv4 , on page 15	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

Command History

Release	Modification
Release 3.7.2	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:

```
RP/0/RSP0/CPU0:router# config
RP/0/RSP0/CPU0:router(config)# dhcp ipv4
RP/0/RSP0/CPU0:router(config-dhcpv4)# profile client relay
RP/0/RSP0/CPU0:router(config-dhcpv4-relay-profile)# giaddr policy drop
```

helper-address

To configure the Dynamic Host Configuration Protocol (DHCP) IPv4 or IPv6 relay agent to relay DHCP packets to a specific DHCP server, use the **helper-address** command in an appropriate configuration mode. Use the **no** form of this command to clear the address.

helper-address [**vrf** *vrf-name*] [*address*] [**giaddr** *gateway-address*]

Syntax Description

vrf-name	(Optional) Specifies the name of a particular VRF.
address	IPv4 and Pv6 address 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 IPv6 proxy profile class configuration

DHCP IPv6 profile relay configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.
Release 4.2.0	This command was supported for BNG.
Release 4.3.0	The support for IPv6 was added in BNG.
Release 5.2.2	This command is supported in DHCPv6 profile relay configuration submode.

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 IPv6 proxy profile class configuration mode:

```
RP/0/RSP0/CPU0:router# config
RP/0/RSP0/CPU0:router(config)# dhcp ipv6
RP/0/RSP0/CPU0:router(config-dhcpv6)# profile myprofile proxy
RP/0/RSP0/CPU0:router(config-dhcpv4-proxy-profile)# class myclass
RP/0/RSP0/CPU0:router(config-dhcpv4-proxy-profile-class)#  helper-address vrf my-server-vrf
 1:1:1::1
```

Related Commands

Command	Description
dhcp ipv4 , on page 15	Enables Dynamic Host Configuration Protocol (DHCP) for IPv4 and enters DHCP IPv4 configuration mode.
relay information check , on page 56	Configures a DHCP server to validate the relay agent information option in forwarded BOOTREPLY messages.
relay information option , on page 58	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 60	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 , on page 62	Configures how a relay agent processes BOOTREQUEST messages that already contain a relay information option.

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

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 4.1.1	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 that shows how to set the helper-address using the **helper-address** command

```
RP/0/RSP0/CPU0:router# config
RP/0/RSP0/CPU0:router(config)# dhcp ipv6
RP/0/RSP0/CPU0:router(config-dhcpv6)# profile p1 proxy
RP/0/RSP0/CPU0:router(config-dhcpv6-profile)# helper-address 2001:db8::3 GigabitEthernet
0/2/0/0
```

Related Commands

Command	Description
dhcp ipv6 , on page 25	Enables Dynamic Host Configuration Protocol (DHCP) for IPv6.

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 5.2.2	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:

```
RP/0/RSP0/CPU0:router# config
RP/0/RSP0/CPU0:router(config)# dhcp ipv6
RP/0/RSP0/CPU0:router(config-dhcpv6)# profile client relay
RP/0/RSP0/CPU0:router(config-dhcpv6-relay-profile)# iana-route-add
```

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** | **cnbng** | **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.
cnbng	Attaches a cloud native BNG (cnBNG) profile for the specified interface.
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 4.1.0	This command was introduced.
Release 4.3.0	The support for IPv6 was added in BNG.
Release 5.1	Support for **server** profile was added.

Release	Modification
Release 5.2.2	Support for DHCP IPv6 relay was added. The keyword **base** was added as part of DHCPv4 Service Based Mode Selection feature.
Release 6.2.1	Support for DHCP IPv6 base profile was added.
Release 7.3.1	Support for DHCP IPv4 and IPv6 cnBNG profile was added.

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 base profile to an interface:

```
RP/0/RSP0/CPU0:router(config)# dhcp ipv4
RP/0/RSP0/CPU0:router(config-dhcpv4)# interface gigabitEthernet 0/0/0/0 base profile
BASE_PROFILE
```

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

```
RP/0/RSP0/CPU0:router(config)# dhcp ipv6
RP/0/RSP0/CPU0: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:

```
RP/0/RSP0/CPU0:router(config)# dhcp ipv4
RP/0/RSP0/CPU0: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:

```
RP/0/RSP0/CPU0:router(config)# dhcp ipv6
RP/0/RSP0/CPU0:router(config-dhcpv6)# interface Bundle-Ether302.2501 base profile base_TEST
```

This example shows how to attach a cnBNG profile to an interface, in DHCPv4 mode:

```
Router(config)#dhcp ipv4
Router(config-dhcpv4)#interface Bundle-Ether1.1 cnbng profile test-cnbng-profile
```

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

Syntax Description

infinite	Configures an infinite lease.
days minutes seconds	Configures lease for the specified number of hours, minutes, and seconds.

Command Default

None

Command Modes

DHCPv4 Server Profile

Command History

Release	Modification
Release 5.1	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 **lease** command:

```
RP/0/RSP0/CPU0:router# config
RP/0/RSP0/CPU0:router(config)# dhcp ipv4
RP/0/RSP0/CPU0:router(config-dhcpv4)# profile P1 server
RP/0/RSP0/CPU0:router(config-dhcpv4-server-profile)# lease infinite
```

Related Commands

Command	Description
#unique_148	Configures the boot file.

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 5.1	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:

```
RP/0/RSP0/CPU0:router# config
RP/0/RSP0/CPU0:router(config)# dhcp ipv4
RP/0/RSP0/CPU0:router(config-dhcpv4)# profile P1 server
RP/0/RSP0/CPU0:router(config-dhcpv4-server-profile)# limit lease per-circuit-id 23
```

Related Commands

Command	Description
#unique_148	Configures the boot file.

netbios-name-server

To configure NetBIOS 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

DHCPv4 Server Profile Class Sub-mode

Command History

Release	Modification
Release 5.1	This command was introduced.
Release 5.2.2	This command is supported in DHCPv4 server profile class sub-mode.

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:

```
RP/0/RSP0/CPU0:router# config
RP/0/RSP0/CPU0:router(config)# dhcp ipv4
RP/0/RSP0/CPU0:router(config-dhcpv4)# profile DHCP_SERVER_PROFILE server
RP/0/RSP0/CPU0:router(config-dhcpv4-server-profile)# netbios-name-server 10.20.3.5
```

netbios-node-type

To configure the type of NetBIOS 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

DHCPv4 Server Profile Class Sub-mode

Command History

Release	Modification
Release 5.1	This command was introduced.
Release 5.2.2	This command is supported in DHCPv4 server profile class sub-mode.

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/RSP0/CPU0:router# config
RP/0/RSP0/CPU0:router(config)# dhcp ipv4
RP/0/RSP0/CPU0:router(config-dhcpv4)# profile DHCP_SERVER_PROFILE server
RP/0/RSP0/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 5.1	This command was introduced.
Release 5.2.2	This command is supported in DHCPv4 server profile class sub-mode.

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

DHCP Option Name	DHCP Option Code
Pad	0
Host Name	12
Requested Address	50
Over Load	52
Message Type	53
Server Identifier	54
Renewal Time	58

DHCP Option Name	DHCP Option Code
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:

```
RP/0/RSP0/CPU0:router# config
RP/0/RSP0/CPU0:router(config)# dhcp ipv4
RP/0/RSP0/CPU0:router(config-dhcpv4)# profile DHCP_SERVER_PROFILE server
RP/0/RSP0/CPU0:router(config-dhcpv4-server-profile)# option 23 ip 10.20.34.56
RP/0/RSP0/CPU0:router(config-dhcpv4-server-profile)# option 16 hex 20187634
RP/0/RSP0/CPU0:router(config-dhcpv4-server-profile)# option 17 ascii /users/cisco/
```

pool (DHCP)

To configure the Distributed Address Pool Service(DAPS) pool name, use the **pool** command in the DHCPv4 server profile submode. To deconfigure, use the **no** form of this command.

pool *pool-name*
no pool *pool-name*

Syntax Description

pool-name	Specifes the DAPS pool name.

Command Default

None

Command Modes

DHCPv4 Server Profile

Command History

Release	Modification
Release 5.1	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 **pool** command:

```
RP/0/RSP0/CPU0:router# config
RP/0/RSP0/CPU0:router(config)# dhcp ipv4
RP/0/RSP0/CPU0:router(config-dhcpv4)# profile P1 server
RP/0/RSP0/CPU0:router(config-dhcpv4-server-profile)# pool pool1
```

Related Commands

Command	Description
#unique_148	Configures the boot file.

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* {**base** | **relay** | **snoop** | **proxy** | **server**}
no profile *name* {**base** | **relay** | **snoop** | **proxy** | **server**}

Syntax Description

name	Name that uniquely identifies the relay or snoop profile.
base	Configures a DHCP base profile.If an interface is configured in the DHCP BASE mode, then the DHCP selects either the DHCP proxy or the DHCP server mode to process the client request by matching option 60 (class-identifier) value of the client request with the configured value under the DHCP base 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.

snoop	Configures a DHCP snoop profile. DHCP snooping is a DHCP security feature that provides security by filtering untrusted DHCP messages and by building and maintaining a DHCP snooping binding table. DHCP snooping is a DHCP security feature that provides security by filtering untrusted DHCP messages and by building and maintaining a DHCP snooping binding table. An untrusted message is a message that is received from outside the network or firewall and that can cause traffic attacks within your network. The DHCP snooping binding table contains the MAC address, IP address, lease time, binding type, VLAN number, and interface information that corresponds to the local untrusted interfaces of a switch. It does not contain information regarding hosts interconnected with a trusted interface. An untrusted interface is an interface that is configured to receive messages from outside the network or firewall. A trusted interface is an interface that is configured to receive only messages from within the network. DHCP snooping acts like a firewall between untrusted hosts and DHCP servers. It also gives you a way to differentiate between untrusted interfaces connected to the end-user and trusted interfaces connected to the DHCP server or another switch.

proxy	Configures a DHCP proxy profile. The DHCP proxy performs all the functions of a relay and also provides some additional functions. The DHCP proxy conceals DHCP server details from DHCP clients. The DHCP proxy modifies the DHCP replies such that the client considers the proxy to be the server. In this state, the client interacts with the proxy as if it is the DHCP server. The DHCP proxy passes IP configuration information between the client and server. It also keeps track of the client's addresses and lease time. It is used when DHCP client and DHCP server are present on different networks. The DHCP proxy supports the use of unnumbered interfaces, including use of proxy forwarding. For DHCP clients connected through the unnumbered interfaces, the DHCP proxy automatically adds a static host route once the DHCP client obtains an address, specifying the unnumbered interface as the outbound interface. The route is automatically removed once the lease time expires or when the client releases the address.

server	Configures a DHCP server profile. DHCP server allocates network addresses and passes IP configuration parameters to dynamically configured hosts. When a client initiates a DHCP Discover request on it local Ethernet segment, the DHCP Server sends a notification to Distributed Address Pool (DAPS) component requesting it allocate addresses to clients from a specified pool. The DAPS selects the client address from the specified pool and returns the address to the DHCP Server. The DHCP Server sends the allocated address through a DHCP OFFER message to the client. The Client chooses one of the OFFER messages for configuration, and responds with a broadcast REQUEST, thereby informing the Server that the OFFER message was acceptable. The Server commits the binding of the Client and its IP Address to persistent storage and responds with an acknowledgement message. The Client commits the IP address and configuration parameters, which includes lease time. The pool is configured under server-profile-mode and server-profile-class-sub-mode. Class based pool selection is always given priority over profile pool selection.

Command Default

None

Command Modes

DHCP IPv4 configuration

DHCP IPv6 configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.
Release 4.0.0	The **proxy** keyword was added.

Release	Modification
Release 5.1	The **server** keyword was added.
Release 5.2.2	Support for DHCP IPv6 relay was added. Support for DHCP IPv4 base was added

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 IPv4 base profile:

```
RP/0/RSP0/CPU0:router(config)# dhcp ipv4
RP/0/RSP0/CPU0:router(config-dhcpv4)# profile DHCP_BASE base
RP/0/RSP0/CPU0:router(config-dhcpv4-base-profile)#
```

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

```
RP/0/RSP0/CPU0:router(config)# dhcp ipv6
RP/0/RSP0/CPU0:router(config-dhcpv6)# profile client relay
RP/0/RSP0/CPU0:router(config-dhcpv6-relay-profile)#
```

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

```
RP/0/RSP0/CPU0:router(config)# dhcp ipv4
RP/0/RSP0/CPU0:router(config-dhcpv4)# profile client relay
RP/0/RSP0/CPU0:router(config-dhcpv4-relay-profile)#
```

This example shows how to use the **profile** command for a **proxy** profile:

```
RP/0/RSP0/CPU0:router(config)# dhcp ipv4
RP/0/RSP0/CPU0:router(config-dhcpv4)# profile profile1 proxy
RP/0/RSP0/CPU0:router(config-dhcpv4-proxy-profile)#
```

This example shows how to use the **profile** command for a **server** profile:

```
RP/0/RSP0/CPU0:router(config)# dhcp ipv4
RP/0/RSP0/CPU0:router(config-dhcpv4)# profile TEST server
(config-dhcpv4-server-profile)#
```

quiet-on-unspec-fail

To disable DHCP IPv6 proxy from sending ADV packet when status code is `UNSPEC-FAIL`, use the **quiet-on-unspec-fail** command in DHCP IPv6 configuration mode. To restore the default DHCP IPv6 proxy behaviour, use the **no** form of this command.

quiet-on-unspec-fail

no quiet-on-unspec-fail

Syntax Description

This command has no keywords or arguments.

Command Default

By default, the DHCP IPv6 proxy sends ADV packets when status code is `UNSPEC-FAIL`.

Command Modes

DHCP IPv6 configuration

Command History

Release	Modification
Release 7.3.2	This command was introduced.

Usage Guidelines

You can use the show running-config dhcp ipv6 command to check if the **quiet-on-unspec-fail** command is configured in the DHCP IPv6 configuration.

Task ID

Task ID	Operations
ip-services	read, write

Examples

The following example shows how to disable DHCP IPv6 Proxy from sending ADV packets when status code is `UNSPEC-FAIL`:

```
Router# configure
Router(config)# dhcp ipv6
Router(config-dhcpv6)# quiet-on-unspec-fail
```

Examples

The following example shows no form of the **quiet-on-unspec-fail** command:

```
Router# configure
Router(config)# dhcp ipv6
Router(config-dhcpv6)# no quiet-on-unspec-fail
```

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 4.3.1	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:

```
RP/0/RSP0/CPU0:router# config
RP/0/RSP0/CPU0:router(config)# dhcp ipv4
RP/0/RSP0/CPU0:router(config-dhcpv4)# profile myprofile proxy
RP/0/RSP0/CPU0:router(config-dhcpv4-proxy-profile)# relay information authenticate received
```

Related Commands

Command	Description
dhcp ipv4 , on page 15	Enables Dynamic Host Configuration Protocol (DHCP) for IPv4 and enters DHCP IPv4 configuration mode.

Command	Description
relay information check , on page 56	Configures a DHCP server to validate the relay agent information option in forwarded BOOTREPLY messages.
relay information option , on page 58	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 60	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 , on page 62	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

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 3.7.2	This command was introduced.
Release 4.2.0	This command was supported for BNG.

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/RSP0/CPU0:router#config
RP/0/RSP0/CPU0:router(config)# dhcp ipv4
RP/0/RSP0/CPU0:router(config-dhcpv4)# profile client relay
RP/0/RSP0/CPU0:router(config-dhcpv4-relay-profile)# relay information check
```

Related Commands

Command	Description
dhcp ipv4 , on page 15	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.
profile (BNG)	Configures a relay profile for the DHCP IPv4 component.

Command	Description
relay information option , on page 58	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 60	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 or DHCP snooping 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 or DHCP IPv4 profile snoop submode. To disable inserting relay information into forwarded BOOTREQUEST messages, use the **no** form of this command.

relay information option

Syntax Description

This command has no keywords or arguments.

Command Default

None

Command Modes

DHCP IPv4
relay
profile
relay
configuration

DHCP IPv4 profile snoop configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.
Release 4.2.0	This command was supported for BNG.

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.

If the **information option** command is enabled, DHCP snooping mode does not set the giaddr field in the DHCP packet.

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/RSP0/CPU0:router# config
RP/0/RSP0/CPU0:router(config)# dhcp ipv4
RP/0/RSP0/CPU0:router(config-dhcpv4)# profile client relay
RP/0/RSP0/CPU0:router(config-dhcpv4-relay-profile)# relay information option
```

Related Commands

Command	Description
dhcp ipv4 , on page 15	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 , on page 56	Configures a DHCP server to validate the relay agent information option in forwarded BOOTREPLY messages.
relay information option allow-untrusted , on page 60	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 or DHCP snooping 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 or DHCP IPv4 profile snoop 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

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
relay
configuration

DHCP IPv4 profile snoop configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.
Release 4.2.0	This command was supported for BNG.

Usage Guidelines

According to RFC 3046, relay agents (and servers) 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 the server or 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/RSP0/CPU0:router# config
RP/0/RSP0/CPU0:router(config)# dhcp ipv4
RP/0/RSP0/CPU0:router(config-dhcpv4)# profile client relay
```

```
RP/0/RSP0/CPU0:router(config-dhcpv4-relay-profile)# relay information option allow-untrusted
```

Related Commands

Command	Description
dhcp ipv4 , on page 15	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 , on page 56	Configures a DHCP server to validate the relay agent information option in forwarded BOOTREPLY messages.
relay information option , on page 58	Enables the system to insert a DHCP relay agent information option in forwarded BOOTREQUEST messages to a DHCP server.

relay information policy

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

relay information policy {**drop** | **keep** | **encapsulate**}

Syntax Description

drop	Directs the DHCP IPv4 Relay to discard BOOTREQUEST packets with the existing relay information option.
keep	Directs the DHCP IPv4 Relay not to discard a BOOTREQUEST packet that is received with an existing relay information option and to keep the existing relay information option value.
encapsulate	Encapsulates the DHCP relay agent information option received from a prior relay agent in forwarded BOOTREQUEST messages.

Command Default

The DHCP IPv4 Relay does not discard a BOOTREQUEST packet that has an existing relay information option. The option and the existing relay information option value is replaced.

Command Modes

DHCP IPv4 relay profile configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.
Release 4.2.0	This command was supported for BNG.
Release 4.3.1	The **encapsulate** keyword was added.

Usage Guidelines

The **encapsulate** keyword allows the second relay agent to encapsulate option 82 information in a message received from the first relay agent, if it is also configured to add its own option 82 information. This configuration allows the DHCP server to use option 82 information from both relay agents.

Task ID

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

Examples

This is sample output from executing the **relay information policy** command:

```
RP/0/RSP0/CPU0:router# config
RP/0/RSP0/CPU0:router(config)# dhcp ipv4
RP/0/RSP0/CPU0:router(config-dhcpv4)# profile client relay
```

```
RP/0/RSP0/CPU0:router(config-dhcpv4-relay-profile)# relay information policy keep
```

This example shows how to encapsulate the DHCP relay agent information option:

```
RP/0/RSP0/CPU0:router# config
RP/0/RSP0/CPU0:router(config)# dhcp ipv4
RP/0/RSP0/CPU0:router(config-dhcpv4)# profile client relay
RP/0/RSP0/CPU0:router(config-dhcpv4-relay-profile)# relay information policy encapsulate
```

Related Commands

Command	Description
dhcp ipv4 , on page 15	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 , on page 56	Configures a DHCP server to validate the relay agent information option in forwarded BOOTREPLY messages.
relay information option , on page 58	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 60	Configures the DHCP component to not drop BOOTREQUEST messages that have the relay information option set and the giaddr set to zero.

requested-ip-address-check

To verify whether a client has inserted Option 50 (Requested-IP-Address), use **requested-ip-address-check** command in the DHCPv4 server profile submode. To disable this feature, use the **no** form of this command.

requested-ip-address-check
no requested-ip-address-check

Syntax Description

This command has no keywords or arguments.

Command Default

By default, requested-ip-address-check is disabled.

Command Modes

DHCPv4 Server Profile

Command History

Release	Modification
Release 5.1	This command was introduced.

Usage Guidelines

If the requested-ip-address-check is enabled, ingress RELEASE/RENEW packets are dropped.

Task ID

Task ID	Operation
ip-services	read, write

Example

This is a sample output from the **requested-ip-address-check** command:

```
RP/0/RSP0/CPU0:router# config
RP/0/RSP0/CPU0:router(config)# dhcp ipv4
RP/0/RSP0/CPU0:router(config-dhcpv4)# profile P1 server
RP/0/RSP0/CPU0:router(config-dhcpv4-server-profile)# requested-ip-address-check disable
```

Related Commands

Command	Description
#unique_148	Configures the boot file.

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
```

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 5.1.1	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:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# dhcp ipv4
RP/0/RSP0/CPU0:router(config-dhcpv4)# profile profile1 server
RP/0/RSP0/CPU0:router(config-dhcpv4-server-profile)# secure-arp
RP/0/RSP0/CPU0:router(config-dhcpv4-server-profile)#
```

sessions mac throttle

To enable DHCP sessions MAC throttling functionality, use the **sessions mac throttle** command in an appropriate DHCP profile configuration mode. To disable DHCP sessions MAC throttling functionality, use the **no** form of this command.

sessions mac throttle *limit request-period block-period*
no sessions mac throttle

Syntax Description

limit	Number of DISCOVER packets or SOLICIT packets at which the sessions are to be throttled. The range is from 1 to 65535.
request-period	Time interval, in seconds, during which DISCOVER packets or SOLICIT packets are allowed. The range is from 1 to 100.
block-period	Time interval during which no more DISCOVER packets or SOLICIT packets from the same MAC address are accepted.

Command Default

Disabled.

Command Modes

DHCP IPv4 server profile submode

DHCP IPv4 proxy profile submode

DHCP IPv6 proxy profile submode

Command History

Release	Modification
Release 5.1.1	This command was introduced.

Usage Guidelines

The packet type for DHCP IPv4 is DISCOVER and the packet type for DHCP IPv6 is SOLICIT.

Task ID

Task ID	Operation
ip-services	read, write

This example shows how to configure a sessions MAC throttle in DHCP IPv4 server profile submode with a throttle limit of 100 DISCOVER packets, a request period of 50 seconds and a blocking period of 60 seconds:

```
RP/0/RSP0/CPU0:router# config
RP/0/RSP0/CPU0:router(config)# dhcp ipv4 profile p1 server
RP/0/RSP0/CPU0:router(config-dhcpv4-server-profile)# sessions mac throttle 100 50 60
```

This example shows how to configure a sessions MAC throttle in DHCP IPv6 proxy profile submode with a throttle limit of 300 SOLICIT packets, a request period of 60 seconds and a blocking period of 40 seconds:

```
RP/0/RSP0/CPU0:router# config
RP/0/RSP0/CPU0:router(config)# dhcp ipv6 profile p2 proxy
RP/0/RSP0/CPU0:router(config-dhcpv6-proxy-profile)# sessions mac throttle 300 60 40
```

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 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

EXEC mode

Command History

Release	Modification
Release 4.2.0	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:

```
RP/0/RSP0/CPU0: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 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 3.7.2	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:

```
RP/0/RSP0/CPU0: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**]

Syntax Description

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 3.7.2	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:

```
RP/0/RSP0/CPU0: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_RSP0_CPU0
MgmtEth0_RSP0_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 3.7.2	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 :

```
RP/0/RSP0/CPU0:router# show dhcp ipv4 relay statistics

                  Bridge                |       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:

```
RP/0/RSP0/CPU0:router# show dhcp vrf default ipv4 relay statistics
Sun Apr 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*]

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.

Command Default

None.

Command Modes

EXEC

Command History

Release	Modification
Release 5.1	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:

```
RP/0/RSP0/CPU0:router# show dhcp ipv4 server binding detail
```

```
MAC Address:         ca01.3fcd.0000
VRF:                  default
IP Address:           10.10.10.6
Gateway IP Address:  0.0.0.0
Server IP Address:   11.11.11.3
ReceivedCircuit ID:    -
InsertedCircuit ID:    -
ReceivedRemote ID:     -
InsertedRemote ID:    -
Profile:               foo
State:                BOUND_DPM_CONNECTED
Client Lease:                         600 secs (00:10:00)
Client Lease Remaining:     442 secs (00:07:22)
Client ID:            0x00-0x76-0x6C-0x61-0x6E-0x31-0x30-0x30
Interface:            GigabitEthernet0/1/0/0.100
VLAN:                 None
Subscriber Label:    0x0
```

Related Commands

Command	Description
show dhcp ipv4 server profile, on page 77	Displays DHCP server profile information.
show dhcp ipv4 server statistics, on page 78	Display DHCP server statistics.

show dhcp ipv4 server profile

To display DHCP server profile information, 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 5.1	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:

```
RP/0/RSP0/CPU0: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, on page 75	Displays DHCP client bindings for server.
show dhcp ipv4 server statistics, on page 78	Display DHCP server statistics.

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 5.1	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:

```
RP/0/RSP0/CPU0:router# show dhcp ipv4 server statistics
```

Related Commands

Command	Description
show dhcp ipv4 server binding, on page 75	Displays DHCP client bindings for server.
show dhcp ipv4 server profile, on page 77	Displays DHCP server profile information.

show dhcp ipv4 snoop binding

To show information concerning DHCP snooping bindings, use the **show dhcp ipv4 snoop binding** command in EXEC mode.

show dhcp ipv4 snoop binding [{**mac-address** *mac-address* | **summary**}]

Syntax Description

mac-address *mac- address*	(Optional) Displays the details of DHCP snooping client bindings associated with the specified MAC address.
summary	(Optional) displays the total number of DHCP snooping client bindings.

Command Default

Displays brief information about all DHCP snooping client bindings

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.7.2	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 example shows output from the **dhcp ipv4 snoop binding** command for all MAC addresses:

```
RP/0/RSP0/CPU0:router# show dhcp ipv4 snoop binding
Sun Apr  6 05:58:07.741 UTC

 MAC            IP                        Lease                                      Bridge
 Address        Address         State     Remaining  Interface                       Domain
-------------- --------------- ---------- ---------- ------------------------------- ---------
0000.6402.0102 192.128.0.1     BOUND      2499       Gi0/2/0/20.111                  mgmtEth
0000.6402.0103 192.128.0.2     BOUND      2499       Gi0/2/0/20.111                  mgmtEth
0000.6402.0104 192.128.0.3     BOUND      2499       Gi0/2/0/20.111                  mgmtEth
0000.6402.0105 192.128.0.4     BOUND      2499       Gi0/2/0/20.111                  mgmtEth
0000.6402.0106 192.128.0.5     BOUND      2499       Gi0/2/0/20.111                  mgmtEth
0000.6402.0107 192.128.0.6     BOUND      2499       Gi0/2/0/20.111                  mgmtEth
0000.6402.0108 192.128.0.7     BOUND      2499       Gi0/2/0/20.111                  mgmtEth
0000.6402.0109 192.128.0.8     BOUND      2499       Gi0/2/0/20.111                  mgm:mhd
0000.6402.010a 192.128.0.9     BOUND      2499       Gi0/2/0/20.111                  mgm:mhd
0000.6402.010b 192.128.0.10    BOUND      2499       Gi0/2/0/20.111                  mgm:mhd
```

The following example shows output from the **dhcp ipv4 snoop binding** command using the optional **summary** keyword:

```
RP/0/RSP0/CPU0:router# show dhcp ipv4 snoop binding summary
```

```
Sun Apr  6 06:45:03.878 UTC

Number of IPv4 DHCP Snoop bindings: 10
```

The following example shows output from the **dhcp ipv4 snoop binding** command using a specific MAC address:

```
RP/0/RSP0/CPU0:router# show dhcp ipv4 snoop binding mac-address 0000.6402.0102
Sun Apr  6 06:45:03.878 UTC

MAC Address:         0000.6402.0102
  IP Address:        192.128.0.1
  Client ID:         0064
  Profile:           s1
  State:             BOUND
  Lease (sec):       3600
Remaining (sec):     2833
Bridge Domain:       mgm:mhd
Interface:           GigabitEthernet0/2/0/10.111
```

Related Commands

Command	Description
clear dhcp ipv4 snoop binding, on page 7	Clears DHCP snooping bindings.
show dhcp ipv4 snoop statistics, on page 85	Displays statistics for a specific bridge-domain.

show dhcp ipv6 database

To display the DHCPv6 database state, use the **show dhcp ipv6 database** command in EXEC mode.

show dhcp ipv6 database [**location** *node-id*]

Syntax Description

location*node-id*	(Optional) Location of a particular IPv4 access list. The *node-id* argument is entered in the *rack/slot/module* notation.

Command Default

By default, the database file on the RP node is displayed.

Command Modes

EXEC mode

Command History

Release	Modification
Release 4.3.1	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 example show how to display the DHCPv6 database state:

```
RP/0/RSP0/CPU0:router# show dhcp ipv6 database

Database:
Current file version:               1
Full file:
  write interval:                   10 seconds
  last file name:                   /harddiska:/dhcp/dhcpv6_srpb_1_even
  last write time:                  Apr-02-2010-08:35:47
  write count:                      10
  failed write count:               0
  record count:                     1000
  last write error:                 -
  last write error timestamp:       -
Incremental file:
  write interval:                   1 second
  last file name:                   /harddiska:/dhcp/dhcpv6_srpb_1_odd_inc
  last write time:                  Apr-02-2010-08:34:47
  write count:                      81
  failed write count:               0
  record count:                     373
  last write error:                 -
  last write error timestamp:       -
```

Related Commands

Command	Description
database (DHCPv6 Binding), on page 10	Enables DHCP binding database storage to the file system.

show dhcp ipv6 interface

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

show dhcp ipv6 interface *interface-type* *interface-instance*

Syntax Description

interface-type	Interface type. For more information, use the question mark (?) online help function.

interface-instance	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 values 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 (RP0 or RP1) and the module is CPU0. Example: interface MgmtEth0/RP1/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

EXEC mode

Command History

Release	Modification
Release 4.1.0	This command was introduced.

Usage Guidelines

If no interfaces are specified, all interfaces on which DHCP for IPv6 (client or server) is enabled are shown. If an interface is specified, only information about the specified interface is displayed.

Task ID

Task ID	Operations
ip-services	read

Examples

The following is sample output from the **show dhcp ipv6 interface** command when an interface is not specified:

```
RP/0/RSP0/CPU0:router# show dhcp ipv6 interface

GigabitEthernet 0/0/0/1 is in relay mode
   Relay destinations:
     2001:eb8:1::1
```

This table describes the significant fields shown in the display.

Table 3: show dhcp ipv6 interface Command Field Descriptions

Field	Description
GigabitEthernet 0/0/0/1 is in relay mode	Displays whether the specified interface is in relay mode.

Related Commands

Command	Description
interface (DHCP), on page 37	Enables DHCP for IPv6 on an interface.

show dhcp ipv4 snoop statistics

To display statistics for a specific bridge domain, use the **show dhcp ipv4 snoop statistics** command in EXEC mode.

show dhcp ipv4 snoop statistics [**bridge-domain** *bridge-domain-name*]

Syntax Description

bridge-domain *bridge-domain- name*	(Optional) Specifies a specific bridge-domain.

Command Default

Displays a table of DHCP snooping receive (RX), transmit (TX), and drop (DR) packet statistics for each bridge domain.

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that incoudes the proper task IDs. If you suspect user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operations
ip-services	read

Examples

The following shows output from the **show dhcp ipv4 snoop statistics** command, showing a table of DHCP snooping RX, TX, and DR packet statistics for each bridge domain:

```
RP/0/RSP0/CPU0:router# show dhcp ipv4 snoop statistics
Sun Apr  6 05:55:57.524 UTC

             Bridge                          |       RX       |      TX       |       DR      |
-------------------------------------------------------------------------------------------------
 mgm:mhd                                     |          964   |          964  |            0  |
```

The following shows output from the show **dhcp ipv4 snoop statistics** command, showing a table of DHCP snooping RX, Tx, and Drop packet statistics for a specific bridge domain:

```
RP/0/RSP0/CPU0:router# show dhcp ipv4 snoop statistics bridge-domain mgm:mhd
Sun Apr  6 05:57:03.600 UTC

DNCP IPv4 Snoop Statistics for Bridge mgm:mhd:

     TYPE          |    RECEIVE    |    TRANSMIT   |     DROP      |
-------------------------------------------------------------------
 DISCOVER          |          111  |          111  |            0  |
 OFFER             |          111  |          111  |            0  |
 REQUEST           |          371  |          371  |            0  |
```

```
DECLINE          |            0  |            0  |            0  |
ACK              |          371  |          371  |            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  |
LEASACTIVE       |            0  |            0  |            0  |
BOOTP-REQUEST    |            0  |            0  |            0  |
BOOTP-REPLY      |            0  |            0  |            0  |
BOOTP-INVALID    |            0  |            0  |            0  |
```

Related Commands

Command	Description
show dhcp ipv4 snoop binding, on page 79	Displays details of a specific DHCP snooping profile.

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 EXEC mode.

show dhcp ipv6 proxy binding {**detail** | **duid** | **interface** | **interface-id** | **location** | **mac-address** | **remote-id** | **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.
summary	Displays summary bindings for proxy.
vrf	Displays client bindings by VRF name.

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
Release 4.1.1	This command was introduced.
Release 4.3.0	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 ipv6 proxy binding** command:

```
RP/0/RSP0/CPU0: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

RP/0/RSP0/CPU0: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 relay binding

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

EXEC mode

Command History

Release	Modification
Release 5.2.2	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:

```
RP/0/RSP0/CPU0: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 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

EXEC mode

Command History

Release	Modification
Release 5.2.2	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:

```
RP/0/RSP0/CPU0: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   |
```

clear dhcp ipv6 relay binding

To clear DHCPv6 relay binding, use the **clear dhcp ipv6 relay binding** command in 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

EXEC mode

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 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

EXEC mode

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
```

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 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

EXEC mode

Command History

Release	Modification
Release 4.3.0	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:

```
RP/0/RSP0/CPU0: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 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 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

EXEC mode

Command History

Release	Modification
Release 5.1	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:

```
RP/0/RSP0/CPU0:router# show dhcp vrf default ipv4 server statistics
```

time-server

To configure the time server, use the **time-server** command in the DHCPv4 server profile submode. To deconfigure, use the **no** form of this command.

time-server *address1address2...address8*
no time-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 5.1	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 **time-server** command:

```
RP/0/RSP0/CPU0:router# config
RP/0/RSP0/CPU0:router(config)# dhcp ipv4
RP/0/RSP0/CPU0:router(config-dhcpv4)# profile P1 server
RP/0/RSP0/CPU0:router(config-dhcpv4-server-profile)# time-server 10.20.3.8
```

Related Commands

Command	Description
#unique_148	Configures the bootfile.

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 4.1.1	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

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# dhcp ipv6
RP/0/RSP0/CPU0:router(config-dhcpv6)# profile downstream proxy
RP/0/RSP0/CPU0:router(config-dhcpv6-profile)# helper-address ff05::1:3
RP/0/RSP0/CPU0:router(config-dhcpv6-profile)# exit
RP/0/RSP0/CPU0:router(config-dhcpv6)# profile upstream proxy
RP/0/RSP0/CPU0:router(config-dhcpv6-profile)# trust relay-reply
```

Related Commands

Command	Description
helper-address (ipv6), on page 34	Configures the Dynamic Host Configuration Protocol (DHCP) IPv6 relay agent for prefix delegation.

trusted

To configure a DHCP snooping profile to supported trusted sources, use the **trusted** command in DCHP IPv4 Profile Snoop configuration mode. To restore the interface to the default behavior, us the **no** form of the command.

trusted
no trusted

Command Default

By default, the DHCP snooping profile is for untrusted sources.

Command Modes

DHCP IPv4 Snoop Profile configuration mode

Command History

Release	Modification
Release 3.7.2	This command was introduced.

Usage Guidelines

A bridge port can be configured to be trusted by assigning this DHCP snooping profile to a bridge port or a bridge-domain.

DHCP snooping selectively forwards DHCP DISCOVER and DHCP REQUEST messages to trusted interfaces only, thereby preventing often malicious hosts from seeing the DHCP exchanges.

Task ID

Task ID	Operations
ip-services	read

Examples

The following example shows how to configure the snoop profile named trustedServerProfile to be trusted:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# dhcp ipv4
RP/0/RSP0/CPU0:router(config-dhcpv4)# profile trestedServerProfile snoop
RP/0/RSP0/CPU0:router(config-dhcpv4-snoop-profile)# trusted
```

Related Commands

Command	Description
relay information option , on page 58	Allows the insertion of a DHCP relay agent information option in forwarded BOOTREQUEST messages on a DHCP server.
relay information option allow-untrusted , on page 60	Configures the DHCP component to not drop BOOTREQUEST messages that have the relay information option set and giaddr set to zero.

vrf (relay profile)

To configure a relay profile on a VPN routing and forwarding (VRF) instance, use the **vrf (relay profile)** command in Dynamic Host Configuration Protocol (DHCP) IPv4 configuration mode. To disable this feature, use the **no** form of this command.

vrf {*vrf-name* { **relay** | **server** } *profile-name* | **default** | **all**}
no vrf {*vrf-name* { **relay** | **server** } *profile-name* | **default** | **all**}

Syntax Description

vrf-name	User-defined name for the VRF.
relay	Specifies a relay profile.
server	Specifies a server profile.
profile-name	Specifies a name for the profile.
default	Specifies a profile for the default VRF.
all	Specifies a profile for all VRFs. This option is not available for server profiles.

Command Default

If **default** is selected, then the configuration defaults to VRF.

Command Modes

DHCP IPv4 configuration

Command History

Release	Modification
Release 3.7.2	This command was introduced.
Release 5.1	The **server** keyword was added.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operations
ip-services	read, write

Examples

The following example shows how to set the relay profile for all VRFs:

```
RP/0/RSP0/CPU0:router# config
RP/0/RSP0/CPU0:router(config)# dhcp ipv4
RP/0/RSP0/CPU0:router(config-dhcpv4)# vrf all
```

The following example shows how to set the server profile for all VRFs:

```
RP/0/RSP0/CPU0:router# config
RP/0/RSP0/CPU0:router(config)# dhcp ipv4
```

```
RP/0/RSP0/CPU0:router(config-dhcpv4)# vrf V1 server profile TEST
```

Related Commands

Command	Description
dhcp ipv4 , on page 15	Enables DHCP for IPv4 and enters DHCP IPv4 configuration mode.
giaddr policy, on page 31	Configures how a relay agent processes BOOTREQUEST messages that already contain a nonzero giaddr attribute.
helper-address , on page 32	Configures the DHCP relay agent to relay packets to a specific DHCP Server.
profile (DHCP), on page 47	Configures a relay profile for the DHCP IPv4 component.
relay information check , on page 56	Configures a DHCP server to validate the relay agent information option in forwarded BOOTREPLY messages.
relay information option , on page 58	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 60	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 , on page 62	Configures how a relay agent processes BOOTREQUEST messages that already contain a relay information option.