DHCP Commands

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

For detailed information about DHCP concepts, configuration tasks, and examples, refer to the *Cisco IOS XR IP Addresses and Services Configuration Guide for the Cisco XR 12000 Series Router*.

allow-hint

To allow the server to delegate a valid client-suggested prefix in the solicit and request messages, use the **allow-hint** command in Dynamic Host Configuration Protocol (DHCP) IPv6 interface server configuration mode. To disable the delegation of a valid client-suggested prefix, use the **no** form of the command.

allow-hint

no allow-hint

Syntax Description

This command has no keywords or arguments.

Command Default

DHCPv6 service on an interface is disabled.

Command Modes

DHCP IPv6 interface server configuration

Command History

Release	Modification
Release 3.4.0	This command was introduced.

Usage Guidelines

The **allow-hint** command enables the server to delegate a client-suggested prefix in the solicit and request messages if the prefix in the associated local prefix pool is a valid prefix and it is not assigned to any other solicit and request messages. Otherwise, the hint is ignored, and a prefix is delegated from the free list in the pool.

Task ID

Task ID	Operations
ip-services	read, write

Examples

The following is an example of the **allow-hint** command:

```
RP/0/0/CPU0:router# configure
RP/0/0/CPU0:router(config)# dhcp ipv6 interface pos 0/5/0/0 server
RP/0/0/CPU0:router(config-dhcpv6-if)# allow-hint
```

broadcast-flag policy check

To configure Dynamic Host Configuration Protocol (DHCP) IPv4 Relay to broadcast only BOOTREPLY packets if the DHCP IPv4 broadacst flag is set in the DHCP IPv4 header, use the **broadcast-flag policy check** command in DHCP IPv4 relay profile configuration submode . By default, the DHCP IPv4 Relay always broadcasts BOOTREPLY packets. To restore the default, use the **no** form of this command.

broadcast-flag policy{ **check**}

no broadcast-flag policy{ **check**}

Syntax Description

check	Checks the broadcast flag in packets.
unicast-always	Sets the broadcast-flag policy to unicast-always.

Command Default

Relay agent always broadcasts DHCP IPv4 packets to a client.

Command Modes

DHCP IPv4 relay profile configuration

Command History

Release	Modification
Release 3.7.0	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

Examples

This an example of the **broadcast-flag policy check** command:

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

Related Commands

Command	Description
dhcp ipv4 , on page 13	Enables DHCP for IPv4 and enters DHCP IPv4 configuration mode.
helper-address , on page 34	Configures the DHCP relay agent to relay packets to a specific DHCP server.
relay information check , on page 50	Configures a DHCP server to validate the relay agent information option in forwarded BOOTREPLY messages.
relay information option , on page 52	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 54	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 56	Configures how a relay agent processes BOOTREQUEST messages that already contain a relay information option.

clear dhcp ipv6 binding

To delete automatic client bindings from the Dynamic Host Configuration Protocol (DHCP) for IPv6 binding table, use the **clear ipv6 dhcp binding** command in EXEC mode.

clear dhcp ipv6 binding [*ipv6-address*]

Syntax Description

ipv6-address	(Optional) Address of a DHCP for an IPv6 client. This argument must be in the form documented in RFC 2373 where the address is specified in hexadecimal using 16-bit values between colons.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.4.0	This command was introduced.

Usage Guidelines

The **clear ipv6 dhcp binding** command is used as a server function.

A binding table entry on the DHCP for IPv6 server is automatically:

- Created whenever a prefix is delegated to a client from the configuration information pool
- Updated when the client renews, rebinds, or confirms the prefix delegation
- Deleted when the client releases all the prefixes in the binding voluntarily, all prefixes' valid lifetimes have expired, or an administrator runs the **clear ipv6 dhcp binding** command.

If the **clear ipv6 dhcp binding** command is used with the optional *ipv6-address* argument specified, only the binding for the specified client is deleted. If the **clear ipv6 dhcp binding** command is used without the *ipv6-address* argument, then all automatic client bindings are deleted from the DHCP for IPv6 binding table.

Task ID

Task ID	Operations
ip-services	execute

Examples

The following example specifies DHCP for IPv6 binding database agent parameters:

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

Related Commands

Command	Description
show dhcp ipv6 database , on page 68	Displays the DHCP for the IPv6 binding database information.

database

To configure a Dynamic Host Configuration Protocol (DHCP) for IPv6 binding database agent, use the **database** command in DHCP IPv6 configuration mode. To delete the database agent, use the **no** form of this command.

database *agent-URL* [**write-delay** *seconds*] [**timeout** *seconds*]

no database *agent-URL*

Syntax Description

agent-URL	A Flash, NVRAM, FTP, TFTP, or Remote Copy Protocol (RCP) uniform resource locator.
write-delay *seconds*	(Optional) How often (in seconds) DHCP for IPv6 sends database updates. The default is 300 seconds. The minimum write delay is 60 seconds.
timeout *seconds*	(Optional) Length of time, in seconds, the router waits for a database transfer.

Command Default

Write-delay default is 300 seconds.

Timeout default is 300 seconds.

Command Modes

DHCP IPv6 configuration

Command History

Release	Modification
Release 3.4.0	This command was introduced.

Usage Guidelines

The **database** command specifies DHCP for IPv6 binding database agent parameters. The user may configure multiple database agents.

The **write-delay** keyword specifies how often, in seconds, that DHCP sends database updates. By default, DHCP for IPv6 server waits 300 seconds before sending any database changes.

The **timeout** keyword specifies how long, in seconds, the router waits for a database transfer. Infinity is defined as 0 seconds, and transfers that exceed the timeout period are aborted. By default, the DHCP for IPv6 server waits 300 seconds before aborting a database transfer. When the system is going to reload, there is no transfer timeout so that the binding table can be stored completely.

Task ID

Task ID	Operations
ip-services	read, write

Examples

The following example specifies DHCP for IPv6 binding database agent parameters:

```
RP/0/0/CPU0:router# configure
RP/0/0/CPU0:router(config)# dhcp ipv6
RP/0/0/CPU0:router(config-dhcpv6)# database tftp://10.0.0.1/dhcp-binding
```

Related Commands

Command	Description
dhcp ipv6 , on page 24	Enables Dynamic Host Configuration Protocol (DHCP) for IPv6 and enters DHCP IPv6 configuration mode.
interface (DHCP), on page 36	Enables DHCP for IPv6 on an interface.
show dhcp ipv6 database , on page 68	Displays the DHCP for the IPv6 binding database information.

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 3.4.0	This command was introduced.
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/0/0/CPU0:router(config)# dhcp ipv6
RP/0/0/CPU0:router(config-dhcpv6)# interface tenGigE 0/5/0/0 relay
RP/0/0/CPU0:router(config-dhcpv6-if)# destination 10:10::10
```

Related Commands

Command	Description
interface (DHCP), on page 36	Enables DHCP for IPv6 on an interface.

dhcp ipv4

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

dhcp ipv4

no dhcp ipv4

Syntax Description

This command has no keywords or arguments.

Command Modes

None

Command Modes

Global Configuration mode

Command History

Release	Modification
Release 3.7.0	This command was introduced.

Usage Guidelines

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

Task ID

Task ID	Operations
ip-services	read, write

Examples

This example shows how to enable DHCP for IPv4:

```
RP/0/0/CPU0:router# dhcp ipv4
RP/0/0/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:

```
RP/0/0/CPU0:ios#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)

RP/0/0/CPU0:ios#
RP/0/0/CPU0:ios#show dhcp ipv4  client binding ?
  MgmtEth          Ethernet/IEEE 802.3 interface(s)
  detail           Show detailed client binding information
  |                Output Modifiers
  <cr>
```

```
RP/0/0/CPU0:ios#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
-------------------------------------------------------

RP/0/0/CPU0:ios#
RP/0/0/CPU0:ios#show dhcp ipv4  client binding detail ?
  MgmtEth          Ethernet/IEEE 802.3 interface(s)
  debug            Show detailed debug level client binding information
  |                Output Modifiers
  <cr>
RP/0/0/CPU0:ios#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
-------------------------------------------------------

RP/0/0/CPU0:ios#
RP/0/0/CPU0:ios#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.

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:

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

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

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

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

```
Num releases sent               :          1
Num offers received             :          1
Num acks received               :          1
-------------------------------------------------
```

clear dhcp ipv4 client statistics

To clear DHCP client binding statistics information for a given interface, use the **clear dhcp ipv4 client statistics** command in 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 statistics, on page 16	Displays the statistics of the DHCP client.
show dhcp ipv4 client, on page 14	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:

```
 RP/0/0/CPU0:ios#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)
RP/0/0/CPU0:ios#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)
RP/0/0/CPU0:ios#show tech-support dhcp ipv4 client file disk0?
WORD  disk0:  disk0a:
RP/0/0/CPU0:ios#show tech-support dhcp ipv4 client file disk0:/dhcpv4-client-showtech.tgz
```

```
Fri Jun  6 08:25:24.793 UTC
RP/0/0/CPU0:ios#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)
RP/0/0/CPU0:ios#
```

Related Commands

Command	Description
show dhcp ipv4 client, on page 14	Displays DHCP IPv4 client information.
show dhcp ipv4 client statistics, on page 16	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

no dhcp ipv6

Syntax Description

This command has no keywords or arguments.

Command Modes

Global Configuration mode

Command History

Release	Modification
Release 3.6.0	This command was introduced.
Release 4.3.0	This command was supported for BNG.

Usage Guidelines

Task ID

Task ID	Operations
ip-services	read, write

Examples

This example shows how to enable DHCP for IPv6:

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

Related Commands

Command	Description
database, on page 8	Configures a Dynamic Host Configuration Protocol (DHCP) for IPv6 binding database agent.
distance, on page 26	Specifies an administrative distance for Dynamic Host Configuration Protocol (DHCP) for IPv6 Prefix Delegation.

Command	Description
pool (DHCP IPv6), on page 44	Configures a Dynamic Host Configuration Protocol (DHCP) for the IPv6 server configuration information pool and enters DHCP for IPv6 pool configuration mode.

distance

To specify an administrative distance for Dynamic Host Configuration Protocol (DHCP) for IPv6 Prefix Delegation, use the **distance** command in DHCP IPv6 configuration mode. To delete an administrative distance, use the **no** form of this command.

distance *administrative distance*

no distance *administrative distance*

Syntax Description

administrative distanc e	User defined distance. The range is 1 to 255.

Command Default

administrative distance : 1

Command Modes

DHCP IPv6 configuration

Command History

Release	Modification
Release 3.4.0	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 is an example of setting the DHCP administrative distance to 200 using the **distance** command:

```
RP/0/0/CPU0:router(config)# dhcp ipv6
RP/0/0/CPU0:router(config-dhcpv6)# distance 200
```

Related Commands

Command	Description
dhcp ipv6 , on page 24	Enables Dynamic Host Configuration Protocol (DHCP) for IPv6 and enters DHCP IPv6 configuration mode.

dns-server

To specify the Domain Name System (DNS) IPv6 servers available to a Dynamic Host Configuration Protocol (DHCP) for IPv6 client, use the **dns-server** command in an appropriate configuration mode. To remove the DNS server list, use the **no** form of this command.

dns-server *ipv6-address*

no dns-server *ipv6-address*

Syntax Description

ipv6-address	IPv6 address of a DNS server. This argument must be in the form documented in RFC 2373, where the address is specified in hexadecimal using 16-bit values between colons.

Command Default

When a DHCP for IPv6 pool is first created, no DNS IPv6 servers are configured.

Command Modes

Command History

Release	Modification
Release 3.4.0	This command was introduced.

Usage Guidelines

Multiple Domain Name System (DNS) server addresses can be configured by issuing this command multiple times. New addresses do not overwrite old addresses.

Task ID

Task ID	Operations
ip-services	read, write

Examples

This is an example of setting the DNS server name using the **dns-server** command:

```
RP/0/0/CPU0:router(config)# dhcp ipv6 pool pool1
RP/0/0/CPU0:router(config-dhcpv6-pool)# dns-server 10:10::10
```

domain-name (DHCP IPv6 pool)

To configure a domain name for a Dynamic Host Configuration Protocol (DHCP) for IPv6 client, use the **domain-name** command in an appropriate configuration mode. To remove the domain name, use the **no** form of this command.

domain-name *domain*

no domain-name

Syntax Description

domain	Specifies the domain name string to be used by the client.

Command Default

When a DHCP for IPv6 pool is first created, no domain name for clients is configured.

Command Modes

DHCP IPv6 pool configuration

Usage Guidelines

Multiple Domain Name System (DNS) domain names can be configured by issuing the **domain-name** command multiple times. The new domain name does not overwrite existing domain names.

The domain name is defined in DHCP IPv6 server profile and DHCP IPv6 server profile class configuration. If the same parameters are defined in the class scope, then the values defined in the class scope takes precedence.

Task ID

Task ID	Operations
ip-services	read, write

Examples

This is an example of how to configure a DHCP IPv6 domain name using the **domain-name** command:

```
RP/0/0/CPU0:router(config)# dhcp ipv6 pool pool1
RP/0/0/CPU0:router(config-dhcpv6-pool)# domain-name howie.com
```

duid

To define the Dynamic Host Configuration Protocol (DHCP) the unique identification (DUID) on a specified device, use the **duid** command in DHCP IPv6 configuration mode. To delete an administrative distance, use the **no** form of this command.

duid *duid name*

no duid *duid name*

Syntax Description

duid name	IPv6 DHCP unique identifier (DUID) in hex format. The length of DUID word should be even.

Command Default

DUID-LL as defined in Section 9.4 of RFC3315

Command Modes

DHCP IPv6 configuration

Command History

Release	Modification
Release 3.4.0	This command was introduced.

Usage Guidelines

Use the **duid** command to configure the DHCP unique identifier on a specified device. Use the **no** form of this command to restore the default.

Task ID

Task ID	Operations
ip-services	read, write

Examples

The following is an example of how to create an IPv6 DHCP unique identifier (DUID) of 0002000000090CC084D303000912 using the **duid** command:

```
RP/0/0/CPU0:router(config)# dhcp ipv6
RP/0/0/CPU0:router(config-dhcpv6)# duid 0002000000090CC084D303000912
```

Related Commands

Command	Description
dhcp ipv6 , on page 24	Enables Dynamic Host Configuration Protocol (DHCP) for IPv6 and enters DHCP IPv6 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 3.7.0	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/0/0/CPU0:router# config
RP/0/0/CPU0:router(config)# dhcp ipv4
RP/0/0/CPU0:router(config-dhcpv4)# profile client relay
RP/0/0/CPU0:router(config-dhcpv4-relay-profile)# giaddr policy drop
```

Related Commands

Command	Description
dhcp ipv4 , on page 13	Enables DHCP for IPv4 and enters DHCP IPv4 configuration mode.
helper-address , on page 34	Configures the DHCP relay agent to relay packets to a specific DHCP Server.
interface (relay profile), on page 37	Specifies a relay profile on an interface.
relay information check , on page 50	Configures a DHCP server to validate the relay agent information option in forwarded BOOTREPLY messages.
relay information option , on page 52	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 54	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 56	Configures how a relay agent processes BOOTREQUEST messages that already contain a relay information option.

helper-address

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

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

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

Syntax Description

vrf-name	(Optional) Specifies the name of a particular VRF.
address	IPv4 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

Command History

Release	Modification
Release 3.7.0	This command was introduced.

Usage Guidelines

A maximum of upto eight helper addresses can be configured.

Task ID

Task ID	Operations
ip-services	read, write

Related Commands

Command	Description
dhcp ipv4 , on page 13	Enables Dynamic Host Configuration Protocol (DHCP) for IPv4 and enters DHCP IPv4 configuration mode.

Command	Description
interface (relay profile), on page 37	Specifies a relay profile on an interface.
relay information check , on page 50	Configures a DHCP server to validate the relay agent information option in forwarded BOOTREPLY messages.
relay information option , on page 52	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 54	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 56	Configures how a relay agent processes BOOTREQUEST messages that already contain a relay information option.

interface (DHCP)

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

interface *type interface-path-id* {**server| relay**}

interface *type interface-path-id* {**base| relay| server**}

Syntax Description

type	Interface type. For more information, use the question mark (?) online help function.
interface-path-id	Physical interface or virtual interface. **Note** Use the **show interfaces** command to see a list of all interfaces currently configured on the router. For more information about the syntax for the router, use the question mark (?) online help function.
server	Enables service on the specified interface using the pool for prefix delegation.
relay	Attaches a relay profile for the specified interface.

Command Default

None

Command Modes

DHCP IPv6 configuration

Command History

Release	Modification
Release 3.4.0	This command was introduced.

Task ID

Task ID	Operations
ip-services	read, write

Examples

interface (relay profile)

To configure a relay profile on an interface, use the **interface (relay profile)** command in Dynamic Host Configuration Protocol (DHCP) IPv4 configuration mode. To disable this feature, use the **no** form of the command.

interface interface-type interface-path-id {**none**| **relay**}

no interface interface-type interface-path-id {**none**| **relay**}

Syntax Description

interface-type	Interface type. For more information, use the question mark (?) online help function.
interface-path-id	Either a physical interface instance or a virtual interface instance.
none	Disables DHCP at the specified interface.
relay	Specifies a relay profile for the interface.

Command Modes

DHCP IPv4 configuration

Command History

Release	Modification
Release 3.7.0	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 configure a relay profile on an interface:

```
RP/0/0/CPU0:router# config
RP/0/0/CPU0:router(config)# dhcp ipv4
RP/0/0/CPU0:router(config-dhcpv4)# interface pos 0/1/4/1
RP/0/0/CPU0:router(config-dhcpv4)# interface pos 0/1/4/1 relay profile client
```

Related Commands

Command	Description
broadcast-flag policy check , on page 4	Configures a relay agent to only broadcast DHCP IPv4 BOOTREPLY messages to a client, if the DHCP IPv4 broadcast flag is set in the DHCP IPv4 header.
dhcp ipv4 , on page 13	Enables Dynamic Host Configuration Protocol (DHCP) for IPv4 and enters DHCP IPv4 configuration mode.
giaddr policy, on page 32	Configures how a relay agent processes BOOTREQUEST messages that already contain a nonzero giaddr attribute.
helper-address , on page 34	Configures the DHCP relay agent to relay packets to a specific DHCP Server.
relay information check , on page 50	Configures a DHCP server to validate the relay agent information option in forwarded BOOTREPLY messages.
relay information option , on page 52	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 54	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 56	Configures how a relay agent processes BOOTREQUEST messages that already contain a relay information option.
vrf (relay profile), on page 78	Specifies a relay profile on a VRF.

pd (prefix-delegation - DHCP IPv6 pool)

To specify a manually configured numeric prefix to be delegated to a specified client (and optionally a specified identity association for prefix delegation [IAPD] for that client), use the **pd** command in Dynamic Host Configuration Protocol (DHCP) IPv6 pool configuration mode. To remove the prefix, use the **no** form of this command.

pd *ipv6 prefix prefix-length client -DUID* [iaid *iaid*][**lifetime**]

Syntax Description

ipv6-prefix	(Optional) Specified IPv6 prefix. This argument must be in the form documented in RFC 2373, where the address is specified in hexadecimal using 16-bit values between colons
/prefix-length	Length of the IPv6 prefix. A decimal value that indicates how many of the high-order contiguous bits of the address comprise the prefix (the network portion of the address).
client-DUID	The DHCP unique identifier (DUID) of the client to which the prefix is delegated.
iaid *iaid*	(Optional) Identity association identifier (IAID), which uniquely identifies an IAPD on the client.

lifetime	(Optional) Sets a length of time during which the requesting router is allowed to use the prefix. The following values can be used: • valid-seconds—Length of time, in seconds, that the prefix remains valid for the requesting router to use. • valid-seconds preferred-seconds—Length of time, in seconds, that the prefix remains valid for the requesting router to use, plus the length of time after which client should re-check that it still has the prefix. • at—Absolute point in time where the prefix is no longer valid and no longer preferred. • preferred-seconds—Length of time, in seconds, that the prefix remains preferred for the requesting router to use. • infinite—Unlimited lifetime. This value can be used in place of valid-seconds or preferred-seconds value. • valid-month valid-date valid-year valid-time—Fixed duration of time for hosts to remember router advertisements. The format used can be oct 24 2003 11:45 or 24 oct 2003 11:45. • preferred-month preferred-date preferred-year preferred-time—Fixed duration of time for hosts to remember router advertisements. The format used can be oct 24 2003 11:45 or 24 oct 2003 11:45. • at valid-timestamp—Absolute point in time (rather than duration) for the valid-timestamp.The prefix is valid up to valid-timestamp. • at valid-timestamp preferred-timestamp—Absolute point in time (rather than duration) for the valid-timestamp and preferred time-stamp. The client should confirm that it has the prefix after preferred-timestamp; however, the time-stamp is still valid up to valid-timestamp.

Command Default

No manually configured prefix delegations exist.

Command Modes

DHCP IPv6 pool configuration

Command History

Release	Modification
Release 3.4.0	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 is an example of the **pd** command in DHCP IPv6 pool configuration mode:

```
RP/0/0/CPU0:router(config)# dhcp ipv6 pool pool1
RP/0/0/CPU0:router(config-dhcpv6-pool)# pd 2001:420:10::/48 0002000000090CC084D303000912
```

Related Commands

Command	Description
pool (DHCP IPv6), on page 44	Configures a Dynamic Host Configuration Protocol (DHCP) for the IPv6 server configuration information pool and enters DHCP for IPv6 pool configuration mode.

pd (prefix-delegation - DHCP IPv6 interface)

To allow the identification of a client based on client connection to a specific interface, use the **pd** command in DHCP IPv6 interface server configuration mode. To remove the prefix, use the **no** form of this command.

pd ipv6 *prefix prefix -length*[**lifetime**]

nopd ipv6 *prefix prefix -length*[**lifetime**]

Syntax Description

ipv6-prefix	(Optional) Specified IPv6 prefix. This argument must be in the form documented in RFC 2373, where the address is specified in hexadecimal using 16-bit values between colons
/prefix-length	Length of the IPv6 prefix. A decimal value that indicates how many of the high-order contiguous bits of the address comprise the prefix (the network portion of the address).
lifetime	(Optional) Sets a length of time over which the requesting router is allowed to use the prefix. The following values can be used: • valid-lifetime—The length of time, in seconds, that the prefix remains valid for the requesting router to use. • at—Specifies absolute points in time where the prefix is no longer valid and no longer preferred. • infinite—Indicates an unlimited lifetime. • preferred-lifetime—The length of time, in seconds, that the prefix remains preferred for the requesting router to use. • valid-month valid-date valid-year valid-time—A fixed duration of time for hosts to remember router advertisements. The format used can be oct 24 2003 11:45 or 24 oct 2003 11:45. • preferred-month preferred-date preferred-year preferred-time—A fixed duration of time for hosts to remember router advertisements. The format used can be oct 24 2003 11:45 or 24 oct 2003 11:45.

Command Default

No manually configured prefix delegations exist.

Command Modes

DHCP IPv6 interface server configuration

Command History

Release	Modification
Release 3.4.0	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 is an example of the **pd** command in DHCP IPv6 pool configuration mode:

```
RP/0/0/CPU0:router(config)# dhcp ipv6
RP/0/0/CPU0:router(config-dhcpv6)# pool pool1
RP/0/0/CPU0:router(config-dhcpv6-pool)# exit
RP/0/0/CPU0:router(config-dhcpv6)# interface POS 0/5/0/0 server
RP/0/0/CPU0:router(config-dhcpv6-if)# pd 2001:420:10::/48
RP/0/0/CPU0:router(config-dhcpv6-if)# pool pool1
```

Related Commands

Command	Description
interface (DHCP), on page 36	Enables DHCP for IPv6 on an interface.

pool (DHCP IPv6)

To configure a Dynamic Host Configuration Protocol (DHCP) for the IPv6 server configuration information pool and enter DHCP for IPv6 pool configuration mode, use the **pool** command in either DHCP IPv6 configuration mode or DHCP IPv6 interface relay configuration mode. To delete a DHCP for IPv6 pool, use the **no** form of this command.

pool *poolname*

no pool *poolname*

Syntax Description

poolname	User-defined name for the local prefix pool. The pool name can be a symbolic string (such as “Engineering”) or an integer (such as 0).

Command Default

No DHCP for IPv6 pools are configured.

Command Modes

DHCP IPv4 IPv6 configuration

Command History

Release	Modification
Release 3.4.0	This command was introduced.

Usage Guidelines

Use the **pool** command to create a DHCP for IPv6 server configuration information pool. When the **pool** command is enabled, the configuration mode changes to DHCP for IPv6 pool configuration mode. In this mode, the administrator can configure pool parameters, such as prefixes to be delegated and Domain Name System (DNS) servers.

Once the DHCP for IPv6 configuration information pool has been created, use the **server** command to associate the pool with a server on an interface.

Task ID

Task ID	Operations
ip-services	read, write

Examples

The following example show how to enter pool configuration mode using the **pool** command:

```
RP/0/0/CPU0:router(config)# dhcp ipv6
RP/0/0/CPU0:router(config-dhcpv6)# pool pool1
RP/0/0/CPU0:router(config-dhcpv6-pool)#
```

Related Commands

Command	Description
dhcp ipv6 , on page 24	Enables Dynamic Host Configuration Protocol (DHCP) for IPv6 and enters DHCP IPv6 configuration mode.
show dhcp ipv6 pool, on page 72	Displays DHCP for IPv6 configuration information pool information.

preference

To configure the preference value, use the **preference** command in DHCP IPv6 interface server configuration mode. To disable the preference value, use the **no** form of the command.

preference *preference value*

no preference

Syntax Description

preference value	Preference value carried in the preference option in the advertise message sent by the server. The range is from 0 to 255.

Command Default

The preference value defaults to zero.

Command Modes

DHCP IPv6 interface server configuration

Command History

Release	Modification
Release 3.4.0	This command was introduced.

Usage Guidelines

The **preference** command configures a preference value. If the preference value is configured and it is not 0, the server adds a preference option to carry the preference value for the advertise message to a client to affect the selection of a server by client.

Task ID

Task ID	Operations
ip-services	read, write

Examples

The following is an example of the **preference** command:

```
RP/0/0/CPU0:router(config)# dhcp ipv6
RP/0/0/CPU0:router(config-dhcpv6)# interface pos 0/5/0/0 server
RP/0/0/CPU0:router(config-dhcpv6-if)# preference 1
```

profile relay

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

profile *profile name* **relay**

no profile *profile name* **relay**

Syntax Description

profile name	Name that uniquely identifies the relay profile.

Command Modes

DHCP IPv4 configuration

W3

Command History

Release	Modification
Release 3.7.0	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 use the **profile relay** command:

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

Related Commands

Command	Description
broadcast-flag policy check , on page 4	Configures a relay agent to only broadcast DHCP IPv4 BOOTREPLY messages to a client, if the DHCP IPv4 broadcast flag is set in the DHCP IPv4 header.
dhcp ipv4 , on page 13	Enables DHCP for IPv4 and enters DHCP IPv4 configuration mode.

Command	Description
giaddr policy, on page 32	Configures how a relay agent processes BOOTREQUEST messages that already contain a nonzero giaddr attribute.
helper-address , on page 34	Configures the DHCP relay agent to relay packets to a specific DHCP Server.
interface (relay profile), on page 37	Specifies a relay profile on an interface.
relay information check , on page 50	Configures a DHCP server to validate the relay agent information option in forwarded BOOTREPLY messages.
relay information option , on page 52	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 54	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 56	Configures how a relay agent processes BOOTREQUEST messages that already contain a relay information option.
vrf (relay profile), on page 78	Specifies a relay profile on a VRF.

rapid-commit

To enable clients that specify the Rapid Commit option in their Solicit messages to receive immediate address assignment Reply messages, use the **rapid-commit** command in Dynamic Host Configuration Protocol (DHCP) IPv6 interface server mode. To disable DHCP for IPv6 service on an interface, use the **no** form of this command.

rapid-commit

no rapid-commit

Command Default

Rapid commit is disabled.

Command Modes

DHCP IPv6 interface server configuration

Command History

Release	Modification
Release 3.4.0	This command was introduced.

Usage Guidelines

The **rapid-commit** command enables or disables rapid commit. If enabled, the DHCPv6 server uses the two-message exchange for prefix delegation and other configuration. If a client has included a rapid commit option in the solicit message and rapid-commit is enabled for the server, the server responds to the solicit message with a reply message. If rapid-commit is not enabled, then normal four-message exchange is done even if the clients specifies the rapid commit option.

Task ID

Task ID	Operations
ip-services	read, write

Examples

The following is an example of the **rapid-commit** command:

```
RP/0/0/CPU0:router(config)# dhcp ipv6
RP/0/0/CPU0:router(config-dhcpv6)# interface pos 0/5/0/0 server
RP/0/0/CPU0:router(config-dhcpv6-if)# rapid-commit
```

Related Commands

Command	Description
interface (DHCP), on page 36	Enables DHCP for IPv6 on an interface.

relay information check

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

relay information check

no relay information check

Syntax Description

This command has no keywords or arguments.

Command Default

DHCP validates the relay agent information option.

Command Modes

DHCP IPv4 relay profile configuration

Command History

Release	Modification
Release 3.7.0	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

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

Examples

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

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

Related Commands

Command	Description
dhcp ipv4 , on page 13	Enables DHCP for IPv4 and enters DHCP IPv4 configuration mode.

Command	Description
helper-address , on page 34	Configures the DHCP relay agent to relay packets to a specific DHCP Server.
relay information option , on page 52	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 54	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

no 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 3.7.0	This command was introduced.

Usage Guidelines

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

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

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

Examples

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

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

Related Commands

Command	Description
dhcp ipv4 , on page 13	Enables DHCP for IPv4 and enters DHCP IPv4 configuration mode.
helper-address , on page 34	Configures the DHCP relay agent to relay packets to a specific DHCP Server.
relay information check , on page 50	Configures a DHCP server to validate the relay agent information option in forwarded BOOTREPLY messages.
relay information option allow-untrusted , on page 54	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

no relay information option allow-untrusted

Syntax Description

This command has no keywords or arguments.

Command Default

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

Command Modes

DHCP IPv4 relay profile relay configuration

DHCP IPv4 profile snoop configuration

Command History

Release	Modification
Release 3.7.0	This command was introduced.

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

Related Commands

Command	Description
dhcp ipv4 , on page 13	Enables DHCP for IPv4 and enters DHCP IPv4 configuration mode.
helper-address , on page 34	Configures the DHCP relay agent to relay packets to a specific DHCP Server.
relay information check , on page 50	Configures a DHCP server to validate the relay agent information option in forwarded BOOTREPLY messages.
relay information option , on page 52	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**}

no relay information policy {**drop**| **keep**}

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.

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 3.7.0	This command was introduced.

Usage Guidelines

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

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

Related Commands

Command	Description
dhcp ipv4 , on page 13	Enables DHCP for IPv4 and enters DHCP IPv4 configuration mode.
helper-address , on page 34	Configures the DHCP relay agent to relay packets to a specific DHCP Server.
relay information check , on page 50	Configures a DHCP server to validate the relay agent information option in forwarded BOOTREPLY messages.
relay information option , on page 52	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 54	Configures the DHCP component to not drop BOOTREQUEST messages that have the relay information option set and the giaddr set to zero.
interface (relay profile), on page 37	Specifies a relay profile on an interface.

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

Examples

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

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

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 3.7.0	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/0/0/CPU0:router# show dhcp ipv4 relay profile

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

Related Commands

Command	Description
show dhcp ipv4 relay profile name, on page 61	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 3.7.0	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/0/0/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_0_CPU0
MgmtEth0_0_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 3.7.0	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/0/0/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/0/0/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 ipv6

To display the Dynamic Host Configuration Protocol (DHCP) unique identifier (DUID) on a specified device, use the **show dhcp ipv6** command in EXEC mode.

show dhcp ipv6

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.4.0	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 ipv6** command:

```
RP/0/0/CPU0:router# show dhcp ipv6
This device's DHCPv6 unique identifier(DUID): 000300010002FCA5DC1C
```

show dhcp ipv6 binding

To display automatic client bindings from the Dynamic Host Configuration Protocol (DHCP) for IPv6 server binding table, use the **show ipv6 dhcp binding** command in EXEC mode.

show dhcp ipv6 binding [*ipv6-address*]

Syntax Description

ipv6-address	(optional) IPv6 address. The *ipv6-address* argument must be in the form documented in RFC 2373, where the address is specified in hexadecimal using 16-bit values between colons.

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.4.0	This command was introduced.

Usage Guidelines

The **show dhcp ipv6 binding** command displays all automatic client bindings from the DHCP for IPv6 server binding table if the *ipv6-address* argument is not specified. When the *ipv6-address* argument is specified, only the binding for the specified client is displayed.

Task ID

Task ID	Operations
ip-services	read

Examples

The following is sample output from the **show dhcp ipv6 binding** displaying all automatic client bindings from the DHCPv6 database. The *ipv6 address* argument is not specified:

```
RP/0/0/CPU0:router# show dhcp ipv6 binding

  Client: FE80::202:FCFF:FEA5:DC39 (Ethernet2/1)
    DUID: 000300010002FCA5DC1C
    IA PD: IA ID 0x00040001, T1 0, T2 0
      Prefix: 3FFE:C00:C18:11::/68
              preferred lifetime 180, valid lifetime 12345
              expires at Nov 08 2002 02:24 PM (12320 seconds)
  Client: FE80::202:FCFF:FEA5:C039 (Ethernet2/1)
    DUID: 000300010002FCA5C01C
    IA PD: IA ID 0x00040001, T1 0, T2 0
```

```
Prefix: 3FFE:C00:C18:1::/72
        preferred lifetime 240, valid lifetime 54321
        expires at Nov 09 2002 02:02 AM (54246 seconds)
Prefix: 3FFE:C00:C18:2::/72
        preferred lifetime 300, valid lifetime 54333
        expires at Nov 09 2002 02:03 AM (54258 seconds)
Prefix: 3FFE:C00:C18:3::/72
        preferred lifetime 280, valid lifetime 51111
        expires at Nov 09 2002 01:09 AM (51036 seconds)
```

This table describes the significant fields shown in the display.

Table 1: show dhcp ipv6 binding Command Field Descriptions

Field	Description
DUID	DHCP IPv6 unique identifier
IA PD	Identity Association for Prefix Delegation
Prefix	Prefixes delegated to the IAPD on the specified client

show dhcp ipv6 database

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

show dhcp ipv6 database *[agent-URL]*

Syntax Description

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

Command Default

None

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.4.0	This command was introduced.

Usage Guidelines

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

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

Task ID

Task ID	Operation
ip-services	read

Examples

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

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

```
Database agent tftp://172.19.216.133/db.tftp:
  write delay: 69 seconds, transfer timeout: 300 seconds
  last written at Jan 09 2003 01:54 PM,
      write timer expires in 56 seconds
  last read at Jan 06 2003 05:41 PM
  successful read times 1
  failed read times 0
  successful write times 3172
  failed write times 2
Database agent nvram:/dhcpv6-binding:
  write delay: 60 seconds, transfer timeout: 300 seconds
  last written at Jan 09 2003 01:54 PM,
      write timer expires in 37 seconds
  last read at never
  successful read times 0
  failed read times 0
  successful write times 3325
  failed write times 0
Database agent flash:/dhcpv6-db:
  write delay: 82 seconds, transfer timeout: 3 seconds
  last written at Jan 09 2003 01:54 PM,
      write timer expires in 50 seconds
  last read at never
  successful read times 0
  failed read times 0
  successful write times 2220
  failed write times 614
```

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 3.4.0	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/0/0/CPU0:router
# show dhcp ipv6 interface

POS 0/5/0/0 is in server mode
  Using pool: svr-p1
  Preference value: 20
  Hint from client: ignored
  Rapid-Commit: ignored
```

This table describes the significant fields shown in the display.

Table 2: show dhcp ipv6 interface Command Field Descriptions

Field	Description
POS 0/5/0/0 is in server/relay mode	Displays whether the specified interface is in server or relay mode.
Using pool	Name of the pool used by the interface.
Preference value	Advertised (or default of 0) preference value for the indicated server.
Hint from client	Displays whether the allow-hint has been enabled on the interface.
Rapid-Commit	Displays whether the rapid-commit keyword has been enabled on the interface.

Related Commands

Command	Description
interface (DHCP), on page 36	Enables DHCP for IPv6 on an interface.

show dhcp ipv6 pool

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

show dhcp ipv6 pool [*pool-name*]

Syntax Description

pool-name	(Optional) User-defined name for the local prefix pool. The pool name can be a symbolic string (such as "Engineering") or an integer (such as 0).

Command Default

No default behavior or values

Command Modes

EXEC mode

Command History

Release	Modification
Release 3.4.0	This command was introduced.

Usage Guidelines

Use the **dhcp ipv6 pool** command to create a configuration information pool, and use the **dhcp ipv6 server** command to associate the configuration information pool with a server on an interface.

The **show dhcp ipv6 pool** command displays DHCP for IPv6 configuration information pool information. If the *poolname* argument is specified, only information on the specified pool is displayed. If the *poolname* argument is not specified, all pools are shown.

Task ID

Task ID	Operations
ip-services	read

Examples

The following is sample output from the **show dhcp ipv6 pool** command. If *pool-name* is not specified, all pools are shown; otherwise, only the named pool is displayed.

```
RP/0/0/CPU0:router# show dhcp ipv6 pool

  DHCPv6 pool: svr-p1
    Static bindings:
      Binding for client 000300010002FCA5C01C
        IA PD: IA ID 00040002,
          Prefix: 3FFE:C00:C18:3::/72
                  preferred lifetime 604800, valid lifetime 2592000
        IA PD: IA ID not specified; being used by 00040001
```

```
          Prefix: 3FFE:C00:C18:1::/72
                  preferred lifetime 240, valid lifetime 54321
          Prefix: 3FFE:C00:C18:2::/72
                  preferred lifetime 300, valid lifetime 54333
          Prefix: 3FFE:C00:C18:3::/72
                  preferred lifetime 280, valid lifetime 51111
DNS server: 1001::1
    DNS server: 1001::2
    Domain name: domain1.net
    Domain name: domain2.net
    Domain name: domain3.net
   Active clients: 2
```

This table describes the significant fields shown in the display.

Table 3: show ipv6 dhcp pool Command Field Descriptions

Field	Description
DHCPv6 pool	The name of the pool.
IA PD	Identity association for prefix delegation (IA PD), which is a collection of prefixes assigned to a client.
Prefix	Prefixes to be delegated to the indicated IAPD on the specified client.
preferred lifetime, valid lifetime	Lifetimes associated with the prefix statically assigned to the specified client.
DNS server	IPv6 addresses of the DNS servers.
Domain name	Displays the DNS domain search list.
Active clients	Total number of active clients.

sip address

To configure a Session Initiation Protocol (SIP) server IPv6 address to be returned in the SIP server's IPv6 address list option to clients, use the **sip address** command in Dynamic Host Configuration Protocol (DHCP) IPv6 pool configuration mode. To disable this feature, use the **no** form of this command.

sip address *ipv6 address*

no sip address *ipv6 address*

Syntax Description

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

Command Default

No default behavior or values

Command Modes

DHCP IPv6 pool configuration

Command History

Release	Modification
Release 3.4.0	This command was introduced.

Usage Guidelines

For the Dynamic Host Configuration Protocol (DHCP) for IPv6 server to obtain prefixes from RADIUS servers, the user must also configure the authorization, authentication, and accounting (AAA) client and PPP on the router. For information on how to configure the AAA client and PPP, see the "Implementing ADSL and Deploying Dial Access for IPv6" module of the *Cisco IOS XR System Security Command Reference*.

The **sip address** command configures a SIP server IPv6 address to be returned in the SIP server's IPv6 address list option to clients. To configure multiple SIP server addresses, issue this command multiple times. The new addresses do not overwrite old ones.

Task ID

Task ID	Operations
ip-services	read, write

Examples

The following example shows how to configure the SIP address using the **sip-address** command:

```
RP/0/0/CPU0:router(config)# dhcp ipv6 pool pool1
RP/0/0/CPU0:router(config-dhcpv6-pool)# sip address 10:10::10
```

Related Commands

Command	Description
pool (DHCP IPv6), on page 44	Configures a Dynamic Host Configuration Protocol (DHCP) for the IPv6 server configuration information pool and enters DHCP for IPv6 pool configuration mode.

sip domain-name

To configure a Session Initiation Protocol (SIP) server domain name to be returned in the SIP server's domain name list option to clients, use the **sip domain-name** command in Dynamic Host Configuration Protocol (DHCP) IPv6 pool configuration mode. To disable this feature, use the **no** form of this command.

sip domain-name *domain-name*

no sip domain-name *domain-name*

Syntax Description

domain-name	Domain name for a DHCP for IPv6 client.

Command Default

No default behavior or values

Command Modes

DHCP IPv6 pool configuration

Command History

Release	Modification
Release 3.4.0	This command was introduced.

Usage Guidelines

For the Dynamic Host Configuration Protocol (DHCP) for IPv6 server to obtain prefixes from RADIUS servers, the user must also configure the authorization, authentication, and accounting (AAA) client and PPP on the router. For information on how to configure the AAA client and PPP, see the "Implementing ADSL and Deploying Dial Access for IPv6" module of the *Cisco IOS XR System Security Command Reference*.

The **sip domain-name** command configures a SIP server domain name to be returned in the SIP server's domain name list option to clients. To configure multiple SIP server domain names, issue this command multiple times. The new domain names do not overwrite old ones.

Task ID

Task ID	Operations
ip-services	read, write

Examples

The following example shows how to configure the SIP address using the **sip domain-name** command:

```
RP/0/0/CPU0:router(config)# dhcp ipv6 pool pool1
RP/0/0/CPU0:router(config-dhcpv6-pool)# sip domain-name domain1.com
```

Related Commands

Command	Description
pool (DHCP IPv6), on page 44	Configures a Dynamic Host Configuration Protocol (DHCP) for the IPv6 server configuration information pool and enters DHCP for IPv6 pool configuration mode.

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** } *profile-name*| **default**| **all**}

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

Syntax Description

vrf-name	User-defined name for the VRF.
relay	Specifies a relay profile.
profile-name	Specifies a name for the profile.
default	Specifies a profile for the default VRF.
all	Specifies a profile for all VRFs.

Command Default

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

Command Modes

DHCP IPv4 configuration

Command History

Release	Modification
Release 3.7.0	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 set the relay profile for all VRFs:

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

Related Commands

Command	Description
dhcp ipv4 , on page 13	Enables DHCP for IPv4 and enters DHCP IPv4 configuration mode.
giaddr policy, on page 32	Configures how a relay agent processes BOOTREQUEST messages that already contain a nonzero giaddr attribute.
helper-address , on page 34	Configures the DHCP relay agent to relay packets to a specific DHCP Server.
relay information check , on page 50	Configures a DHCP server to validate the relay agent information option in forwarded BOOTREPLY messages.
relay information option , on page 52	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 54	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 56	Configures how a relay agent processes BOOTREQUEST messages that already contain a relay information option.