DHCPv6 Bulk-Lease query

This document describes the Dynamic Host Configuration Protocol (DHCP) v6 Bulk-Lease query feature on the Cisco cable modem termination system (CMTS) router.

Finding Feature Information

Your software release may not support all the features that are documented in this module. For the latest feature information and caveats, see the release notes for your platform and software release. The Feature Information Table at the end of this document provides information about the documented features and lists the releases in which each feature is supported.

Hardware Compatibility Matrix for the Cisco cBR Series Routers

Note The hardware components that are introduced in a given Cisco IOS-XE Release are supported in all subsequent releases unless otherwise specified.

Table 1: Hardware Compatibility Matrix for the Cisco cBR Series Routers

Cisco CMTS Platform	Processor Engine	Interface Cards
Cisco cBR-8 Converged Broadband Router	**Cisco IOS-XE Release 16.5.1 and Later Releases** Cisco cBR-8 Supervisor: • PID—CBR-SUP-250G • PID—CBR-CCAP-SUP-160G • PID—CBR-CCAP-SUP-60G	**Cisco IOS-XE Release 16.5.1 and Later Releases** Cisco cBR-8 CCAP Line Cards: • PID—CBR-LC-8D30-16U30 • PID—CBR-LC-8D31-16U30 • PID—CBR-RF-PIC • PID—CBR-RF-PROT-PIC • PID—CBR-CCAP-LC-40G • PID—CBR-CCAP-LC-40G-R • PID—CBR-CCAP-LC-G2-R • PID—CBR-SUP-8X10G-PIC • PID—CBR-2X100G-PIC Digital PICs: • PID—CBR-DPIC-8X10G • PID—CBR-DPIC-2X100G Cisco cBR-8 Downstream PHY Module: • PID—CBR-D31-DS-MOD Cisco cBR-8 Upstream PHY Modules: • PID—CBR-D31-US-MOD

Information About DHCPv6 Bulk-Lease Query

This document describes the Dynamic Host Configuration Protocol (DHCP) v6 bulk-lease query feature on the Cisco cable modem termination system (CMTS) router. Cisco cBR-8 supports DHCPv6 bulk lease query in accordance with RFC 5460.

DHCPv6 bulk lease query is used to recover the IPv6 bindings(GUA/PD/LLA) for CPE ONLY after a chassis reload. The CPE's IPv6 binding information is retrieved from the DHCPv6 server. On cBR8,this feature is designed to be started some time later after a chassis reload. Since before recover CPE's information, we must wait its CM online firstly.

cBR8 will check all active CPE IPv6 bindings retrieved from DHCPv6 server one by one:

- If the IPv6 binding is for CM, cBR8 will drop it.

- If the IPv6 binding is for a CPE. If this binding does not present on cBR8 side and the CM of the CPE is online, cBR8 will recover the IPv6 binding, otherwise, cBR8 will drop it.

The DHCPv6 bulk-lease query feature is disabled by default.

To make this feature works, the DHCPv6 server side must also support DHCPv6 bulk lease query.

How to Configure DHCPv6 Bulk-Lease Query

The following steps help you to setup the DHCPv6 Bulk-Lease query feature with Cisco cBR-8 Converged Broadband Router.

To enable the DHCPv6 Bulk-Lease query feature, run the following commands:

1. Run the **[no] ipv6 dhcp-relay bulk-lease disable** command.

2. Run the **cable ipv6 source-verify bulk-lease [start <start-seconds> timeout <timeout-seconds>]** command.

Note The start-seconds means the time DHCPv6 Bulk-lease will be started after common reload. The start-seconds default value is 2400 seconds. The timeout-seconds means the max time that DHCPv6 Bulk-lease allowed to run. The timeout-seconds default value is 600 seconds.

Ensure that you enable both the Cisco common and Cable specific parts.

To disable the DHCPv6 Bulk-Lease query feature, run the following commands:

1. Run the **ipv6 dhcp-relay bulk-lease disable** command.

2. Run the **[no] cable ipv6 source-verify bulk-lease** command.

Note The DHCPv6 server needs to listen on the TCP port 547.

Debugging DHCPv6 Bulk-Lease Query

The following debugging commands are supported for the DHCPv6 Bulk-Lease Query:

- **debug cable ipv6 bulk-lq**

- **debug ipv6 dhcp relay bulk-lease**

To check the results of DHCPv6 Bulk-Lease query, you can use the **debug cable ipv6 bulk-lq** command. See the following example:

```
Router# show cable ipv6 bulk-lq
CMTS DHCPv6 Bulk Lease Query Statistics:
```

```
Start time 1200 seconds after system up
End time 1500 seconds after system up
DHCPv6 Bulk Lease Query glean ready: 0
DHCPv6 Bulk Lease Query process created: 0
Time out happened: No
Total number of CM option received: 31
Total number of LLA received: 10
Total number of LLA recovered: 7
Total number of GUA received: 10
Total number of GUA recovered: 8
Total number of PD received: 0
Total number of PD recovered: 0
```

Feature Information for DHCPv6 Bulk-Lease query

Use Cisco Feature Navigator to find information about the platform support and software image support. Cisco Feature Navigator enables you to determine which software images support a specific software release, feature set, or platform. To access Cisco Feature Navigator, go to the https://cfnng.cisco.com/ link. An account on the Cisco.com page is not required.

Note The following table lists the software release in which a given feature is introduced. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Table 2: Feature Information for DHCPv6 Bulk-Lease query

Feature Name	Releases	Feature Information
DHCPv6 Bulk-Lease query	Cisco IOS XE Gibraltar 16.12.1	This feature was integrated into Cisco IOS XE Gibraltar 16.12.1 on the Cisco cBR Series Converged Broadband Routers.