

Troubleshoot DHCP Packet Drops in EVPN on Catalyst 9500X/9600X Series Switches

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Introduction

This document describes the troubleshooting steps and solution for DHCP packet drops in EVPN on Cisco Catalyst 9500X/9600X Series switches.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- Basic understanding of DHCP and its operation in a network.
- Familiarity with Cisco IOS commands and troubleshooting techniques.
- Knowledge of LAN Switching and routing protocols.
- Knowledge of EVPN common configuration scenarios.

Components Used

The information in this document is based on these software and hardware versions:

- Hardware: Cisco Catalyst 9500X-28C8D, 9500X-60L4D or 9600X-SUP-2
- Software Version: 17.12.x

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, ensure that you understand the potential impact of any command.

Problem

The issue observed is that DHCP packets coming back from the DHCP server (DHCP OFFER) are dropped by the switch acting as a relay agent, when the DHCP Client and Server are connected to the same VTEP /

Leaf Node, but are in two different VRFs.

In this example, the client is in VLAN 10 in VRF GREEN, and the server is in VLAN 20 in VRF RED.

- This problem can be identified by these command outputs:

```
<#root>
```

```
device#
```

```
show run interface vlan 10
```

```
interface Vlan10
  description CLIENT
  mac-address cafe.cafe.cafe
```

```
vrf forwarding GREEN
```

```
ip dhcp relay source-interface Loopback10
ip address 172.30.208.1 255.255.255.128

ip helper-address vrf RED 192.168.1.10 <-- Leaking from GREEN to RED
```

```
device#
```

```
show run interface vlan 20
```

```
interface Vlan20
  description SERVER
  mac-address abcd.abcd.abcd
```

```
vrf forwarding RED <--- Server is in VRF RED (Same VTEP)
```

```
ip address 192.168.1.1 255.255.255.0
```

```
device#
```

```
show plat soft fed switch active punt asic-cause br
```

```
ASIC Cause Statistics Brief
```

```
+-----+
| Source | Cause | Rx |
+-----+
Drop
| | | cur | delta | cur | delta |
+-----+
```

```
LPTS
```

```
DHCPv4 s to s
```

```
577087870 9219
```

```
30905
```

```
7 <-- Drops in this counter
```

Solution

The solution involves upgrading the software version to address the issue. These steps outline the process:

Option 1: Apply a Workaround

- Move the DHCP Server to a different VTEP with no DHCP clients that rely on that server
- Deploy more than one DHCP Server
- Move server outside of the Fabric.

Option 2: Upgrade the Software

Upgrade the switch to a version of code which has the fix for Cisco bug ID [CSCwm44805](#)

- Version 17.15.1 and later.

Upgrade process is outside the scope of this document. For more information on how to upgrade the switch refer to:

- [9500 Install and Upgrade Guides](#)
- [9600 Install and Upgrade Guides](#)
- [Upgrade Guide for Catalyst 9000 Switches](#)
- [Recommended Releases for Catalyst 9200/9300/9400/9500/9600 Platforms](#)



Note: There are no plans to fix this in any release trains prior to 17.15.1

Related Information

- [Cisco Technical Support & Downloads](#)
- Cisco bug ID [CSCwm44805](#)