



Troubleshooting EVPN Type-2 Route Advertisement

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Troubleshooting EVPN Type-2 Route Distribution to a DCIG

For optimal traffic forwarding in an EVPN topology, you can enable fabric spines to distribute host routes to a Data Center Interconnect Gateway (DCIG) using EVPN type-2 (MAC-IP) routes along with the public BD subnets in the form of BGP EVPN type-5 (IP Prefix) routes. This is enabled using the HostLeak object. If you encounter problems with route distribution, use the steps in this topic to troubleshoot.

Procedure

- Step 1** Verify that HostLeak object is enabled under the VRF-AF in question, by entering a command such as the following in the spine-switch CLI:

Example:

```
spine1# ls /mit/sys/bgp/inst/dom-apple/af-ipv4-ucast/  
ctrl-l2vpn-evpn ctrl-vpnv4-ucast hostleak summary
```

- Step 2** Verify that the config-MO has been successfully processed by BGP, by entering a command such as the following in the spine-switch CLI:

Example:

```
spine1# show bgp process vrf apple
```

Look for output similar to the following:

```
Information for address family IPv4 Unicast in VRF apple  
Table Id           : 0  
Table state        : UP  
Table refcount     : 3  
Peers      Active-peers  Routes    Paths    Networks  Aggregates  
0           0                0         0         0         0  
  
Redistribution  
None  
  
Wait for IGP convergence is not configured
```

```
GOLF EVPN MAC-IP route is enabled
EVPN network next-hop 192.41.1.1
EVPN network route-map map_pfxleakctrl_v4
Import route-map rtctrlmap-apple-v4
EVPN import route-map rtctrlmap-evpn-apple-v4
```

Step 3 Verify that the public BD-subnet has been advertised to DCIG as an EVPN type-5 route:

Example:

```
spine1# show bgp l2vpn evpn 10.6.0.0 vrf overlay-1
Route Distinguisher: 192.41.1.5:4123 (L3VNI 2097154)
BGP routing table entry for [5]:[0]:[0]:[16]:[10.6.0.0]:[0.0.0.0]/224, version 2088
Paths: (1 available, best #1)
Flags: (0x000002 00000000) on xmit-list, is not in rib/evpn
Multipath: eBGP iBGP

Advertised path-id 1
Path type: local 0x4000008c 0x0 ref 1, path is valid, is best path
AS-Path: NONE, path locally originated
192.41.1.1 (metric 0) from 0.0.0.0 (192.41.1.5)
Origin IGP, MED not set, localpref 100, weight 32768
Received label 2097154
Community: 1234:444
Extcommunity:
RT:1234:5101
4BYTEAS-GENERIC:T:1234:444

Path-id 1 advertised to peers:
50.41.50.1
```

In the **Path type** entry, **ref 1** indicates that one route was sent.

Step 4 Verify whether the host route advertised to the EVPN peer was an EVPN type-2 MAC-IP route:

Example:

```
spine1# show bgp l2vpn evpn 10.6.41.1 vrf overlay-1
Route Distinguisher: 10.10.41.2:100 (L2VNI 100)
BGP routing table entry for [2]:[0]:[2097154]:[48]:[0200.0000.0002]:[32]:[10.6.41.1]/272, version 1146
Shared RD: 192.41.1.5:4123 (L3VNI 2097154)
Paths: (1 available, best #1)
Flags: (0x00010a 00000000) on xmit-list, is not in rib/evpn
Multipath: eBGP iBGP

Advertised path-id 1
Path type: local 0x4000008c 0x0 ref 0, path is valid, is best path
AS-Path: NONE, path locally originated
EVPN network: [5]:[0]:[0]:[16]:[10.6.0.0]:[0.0.0.0] (VRF apple)
10.10.41.2 (metric 0) from 0.0.0.0 (192.41.1.5)
Origin IGP, MED not set, localpref 100, weight 32768
Received label 2097154 2097154
Extcommunity:
RT:1234:16777216

Path-id 1 advertised to peers:
50.41.50.1
```

The **Shared RD** line indicates the RD/VNI shared by the EVPN type-2 route and the BD subnet.

The **EVPN Network** line shows the EVPN type-5 route of the BD-Subnet.

The **Path-id advertised to peers** indicates the path advertised to EVPN peers.

Step 5 Verify that the EVPN peer (a DCIG) received the correct type-2 MAC-IP route and the host route was successfully imported into the given VRF, by entering a command such as the following on the DCIG device (assuming that the DCIG is a Cisco ASR 9000 switch in the example below):

Example:

```
RP/0/RSP0/CPU0:asr9k#show bgp vrf apple-2887482362-8-1 10.6.41.1
Tue Sep  6 23:38:50.034 UTC
BGP routing table entry for 10.6.41.1/32, Route Distinguisher: 44.55.66.77:51
Versions:
  Process          bRIB/RIB   SendTblVer
  Speaker          2088      2088
Last Modified: Feb 21 08:30:36.850 for 28w2d
Paths: (1 available, best #1)
  Not advertised to any peer
  Path #1: Received by speaker 0
  Not advertised to any peer
Local
  192.41.1.1 (metric 42) from 10.10.41.1 (192.41.1.5)
  Received Label 2097154
  Origin IGP, localpref 100, valid, internal, best, group-best, import-candidate,
imported
  Received Path ID 0, Local Path ID 1, version 2088
  Community: 1234:444
  Extended community: 0x0204:1234:444 Encapsulation Type:8 Router
MAC:0200.c029.0101 RT:1234:5101
  RIB RNH: table_id 0xe0000190, Encap 8, VNI 2097154, MAC Address: 0200.c029.0101,
IP Address: 192.41.1.1, IP table_id 0x00000000
  Source AFI: L2VPN EVPN, Source VRF: default,
Source Route Distinguisher: 192.41.1.5:4123
```

In this output, the received RD, next hop, and attributes are the same for the type-2 route and the BD subnet.
