Trouble Ticket

Ticket ID: TT-1-2025

Date: 18/04/2025

Reporting User: Glasgow Branch

Status: Open – Passed to Networking and Remote Access Team

Priority: High – Affects backup DMVPN path Hub-2

Location: Glasgow Branch

Affected Users: Remote Glasgow Branch

Issue Description:
Glasgow Branch router is unable to establish a DMVPN tunnel with the secondary Hub-2 at overlay IP 172.16.1.4. Connectivity with the primary core Hub-1 at overlay IP 172.16.1.1 is successful, and BGP peering is established through that path. However, the backup DMVPN path through secondary back up Hub-2 remains unreachable, posing a risk to network redundancy.

1st Line Notes:
Technician confirmed that all devices including Glasgow Branch and Backup-Hub2 are powered on. Ping tests from Glasgow Branch to all other local LAN devices were successful. Ping to the underlay IP of Backup Hub-2 (192.168.10.5) was also successful. However, ping to the DMVPN overlay IP 172.16.1.4 failed, and BGP session was in Idle state. Device was accessible locally and responded to commands. Issue escalated to the networking team.

1. Ping from Glasgow Branch to PC-1 = Successful

```
Spoke-1>ping 192.168.11.10
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.11.10, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/2 ms
```

2. Ping Glasgow Branch to Paisley Branch = Successful

```
Spoke-1#ping 192.168.12.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.12.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 8/9/11 ms
```

3. Ping Glasgow Branch to Paisley End User= Successful

```
Spoke-1#ping 192.168.12.10
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.12.10, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 12/17/27 ms
```

4. Ping from Glasgow Branch to **overlay** network Backup Hub-2 = Unsuccessful

```
Spoke-1#ping 172.16.1.4
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 172.16.1.4, timeout is 2 seconds:
.....
Success rate is 0 percent (0/5)
```

5. Ping from Glasgow Branch to **underlay** network Backup Hub-2 = Successful

```
Spoke-1#ping 192.168.10.5
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.10.5, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 4/4/6 ms
```

6.Ping from Glasgow office to Backup hub = unsuccessful

```
inserthostname-here:~$ ping 192.168.10.5
PING 192.168.10.5 (192.168.10.5): 56 data bytes
^C
--- 192.168.10.5 ping statistics ---
117 packets transmitted, 0 packets received, 100% packet loss
```

Networking Team Notes:

1. Verified all interface on Core hub are up

2. Verified ping from Glasgow Branch to Core hub

3. Verified Tunnel0 configuration on Glasgow Branch

4. Verified Tunnel0 configuration on Backup Hub-2
- 'show dmvpn' shows no entry for Backup Hub-2
- debug nhrp shows the mapping
- debug crypto isakmp shows the policy matching

5. BGP peering with Core Hub-1 (172.16.1.1) is Established, with Backup Hub-2 (172.16.1.4) is Idle

6. Investigation showed that the NHRP configuration for Backup Hub-2 is missing on Glasgow branch tunnel0 interface. Tunnel0 had the correct settings for Core Hub-1 but did not have the NHS configuration for Backup Hub-2. The following commands were added under Tunnel0 on Glasgow branch:

- ip nhrp nhs 172.16.1.4
- ip nhrp map 172.16.1.4 192.168.10.5
- ip nhrp map multicast 192.168.10.5

7. After applying the commands, do 'show dmvpn' displayed an active entry for Backup Hub-2, and the ping to overlay ip 172.16.1.4 succeeded. The BGP session with Backup Hub-2 also changed to Established.

8. Verified loop-back IP ping from Backup hub to Paisley branch

9. Verified loop-back configuration on Paisley branch

10. Add configuration on Paisley Branch
- router ospf 1
- network 10.0.2.1 0.0.0.0 area 0

11. Verified all the loop-back pings