DCI solution for EVPN Overlay networks

draft-rabadan-l2vpn-dci-evpn-overlay-00

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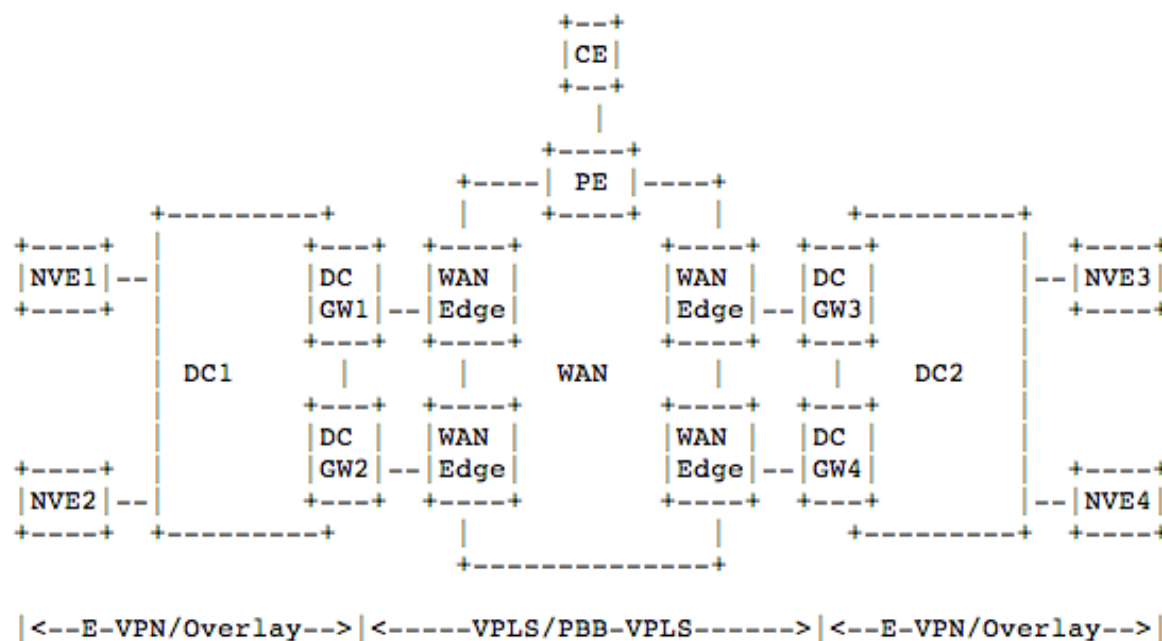Senad Palislamovic

The objective

- Provide a DCI solution for intra-subnet connectivity (L2) when:
  - EVPN for overlay encapsulations (VXLAN, NVGRE, MPLSoGRE) is deployed in the DC
  - Other IP/MPLS L2VPN solutions exist in the WAN

- This version is focused on VPLS/PBB-VPLS as the WAN technology

- Future versions will address other L2VPN WAN technologies, such as EVPN or PBB-EVPN

Solution requirements – VPLS/PBB-VPLS DCI

```
                              +--+
                              |CE|
                              +--+
                               |
                             +-----+
                       +-----| PE  |----+
         +----------+   |    +-----+    |        +----------+
+-----+  |          |  +---+ +-----+  +-----+ +---+         |  +-----+
|NVE1|--|          |  |DC | |WAN  |  |WAN  | |DC |         |--|NVE3|
+-----+  |          |  |GW1|--|Edge|  |Edge|--|GW3|         |  +-----+
         |   DC1    |  +---+ +-----+  +-----+ +---+    DC2   |
         |          |    |     |   WAN   |     |            |
         |          |  +---+ +-----+  +-----+ +---+         |
         |          |  |DC | |WAN  |  |WAN  | |DC |         |
+-----+  |          |  |GW2|--|Edge|  |Edge|--|GW4|         |  +-----+
|NVE2|--|          |  +---+ +-----+  +-----+ +---+         |--|NVE4|
+-----+  +----------+    |     |              |  +----------+  +-----+
                        +--------------+
                        +--------------+

|<--E-VPN/Overlay-->|<-----VPLS/PBB-VPLS------>|<--E-VPN/Overlay-->|
```

- Flexible DC Gateway hand-off

- Integrated or separate GW-Edge function

- Multi-homing

- Control of the WAN MAC addresses advertised to the DC

Benefits of the unknown-mac-route

- Allows the DC provider to optionally turn off the advertisement of WAN MAC addresses into the DC, therefore:
  - Reducing the the control plane overhead
  - Keeping the NVE FDB tables under control

- Allows the DC provider to disable the unknown unicast flooding if DC MACs are learnt through the control/management plane

- Provides a fast convergence mechanism for hypervisor-based NVEs

Next steps

- Feedback appreciated