TRILL DC Interconnect
draft-balaji-l2vpn-trill-over-ip-multi-level-02.txt

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Architecture Considered

Trill Site-A
AN: A-1

Core with IP-MPLS/IP-GRE capabilities between N-PE

N-PE or Network PE device

CE or CRB

Trill Site-B
AN: A-2

H1

B1

B2

H2
Data Plane for DC

Only Site-local MAC address are installed in HW. H1 incase of N1

Only Site-local MAC address are installed in HW. H2 incase of N2

B1, A2, F1

B1

H1

H1, H2: Payload → F1

IP-GRE, VRF key, A1, A2, F1

N1

N2

A1, B2, F1

A1

A-2

B2

H2

H1, H2: Payload → F1
MAC Learning...

Nicknames redistributed in ISIS:
- H1 to A2
- A2 to N1

BGP to exchange Nicknames:
- IP-GRE, VRFkey, Mbit, A1, F1

Multidest frame = F1
MAC Learning Using BGP.

BGP-MAC-VPN based MP-BGP sessions that install MAC with appropriate / suitable TRILL nicknames

N1 and N2 redistributed routes in to IS-IS
Site local-MAC learning’s by CE’s

1. Learning via Multicast frame or BGP
2. Install only site local MAC’s
Multicast

• Core to run multicast-VPN based PIM-Bidir tree for each customer to connect DTrees.

• If there are multiple N-PE's, each N-PE's is part of different MVPN PIM-Bidir tree.

• Uses Group Designated Border Router (GDBR) mechanism
  – Load balancing
  – Prevent loops

• Future versions of draft to cover in detail mechanism on Multicast and GDBR election.
Summary

• Nickname recalculation is not required when new TRILL Sites are added
• MAC scaling at PE
  – Forwarding table to have only Site local MAC’s
  – Site local MAC’s learning by CE only.
  – Install only conversational MAC’s
• VPN mechanism also provides to use of overlapping MAC address/Nicknames across distinct customers.

Next Steps

• Suggestions/Comments from WG
• Future version based on comments/suggestions.