draft-ietf-bess-evpn-mvpn-seamless-interop-03.txt

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Changes between Rev-00 to Rev-03

- Interop with L2 EVPN PE is added.
- Section 5 which discusses IRB unicast vs IRB multicast is now covered as part of the "Solution overview” section.
- Appendix A “use case section” that discusses IGMP/MLD host, multicast router has been removed. (Main document covers these cases)
- Proposal to handle TTL 1 packets (section 11) has been moved to the Appendix A.
- Minor editorial changes has been made in some parts of the document.

Interop with L2 EVPN PEs

- A gateway device is needed to do interop with L2 EVPN PEs.
- A tenant domain can be provisioned with one or more gateway devices known as "Seamless interop EVPN Multicast Gateway (SEMG)”.
- PE which is configured as SEMG must be provisioned with all BDs that are available in the tenant domain.
- Given the set of eligible PEs, one PE is elected as the SEMG designated forwarder (SEMG-DF).

L2 EVPN interop – Possible scenarios

- Case 1: draft-ietf-bess-evpn-igmp-mld-proxy draft is supported by both the seamless interop PE and L2 EVPN PE.
- Case 2: draft-ietf-bess-evpn-igmp-mld-proxy is supported by seamless interop capable PE only.
- Case 3: draft-ietf-bess-evpn-igmp-mld-proxy is supported by seamless interop capable PE and subset of L2 EVPN PEs.
- Case 4: draft-ietf-bess-evpn-igmp-mld-proxy is not supported by interop capable PE.

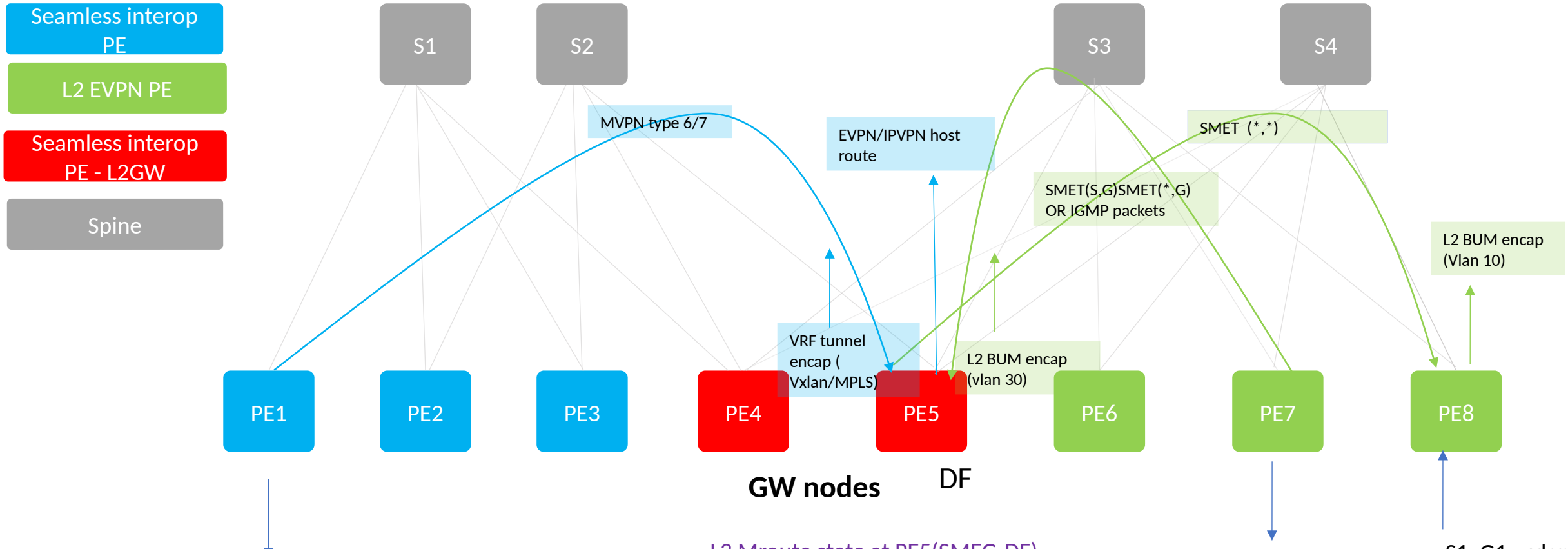
L2 multicast state is built either by SMET routes or IGMP/PIM control plane packets depending on whether PE supports draft-ietf-bess-evpn-igmp-mld-proxy or not.

L2 EVPN interop – Operation Overview

- SEMG-DF groups L2 EVPN PEs into two separate groups (one that supports the evpn-igmp-mld-proxy and other doesn’t) and learns l2 multicast state.
- SEMG-DF acts as LHR for receivers behind L2 EVPN PEs w.r.t other seamless interop capable PEs.
- SEMG-DF acts as FHR for sources behind L2 EVPN PE w.r.t other seamless interop capable PEs.
- SEMG-DF uses BUM tunnel for traffic forwarding towards L2 EVPN PEs.
- SEMG-DF continues to use VRF tunnel for traffic forwarding towards other seamless interop capable PEs/MVPN PEs.

L2 EVPN interop – source behind L2 EVPN PE

Customer VRF info:
VLAN 10, 20, 30 – customer VLANs
IRB-X IRB interface of VLAN/BD X



R1 - S1, G1 or *,G1
vlan 10

L3 Mroute state at PE5(SMEG-DF)

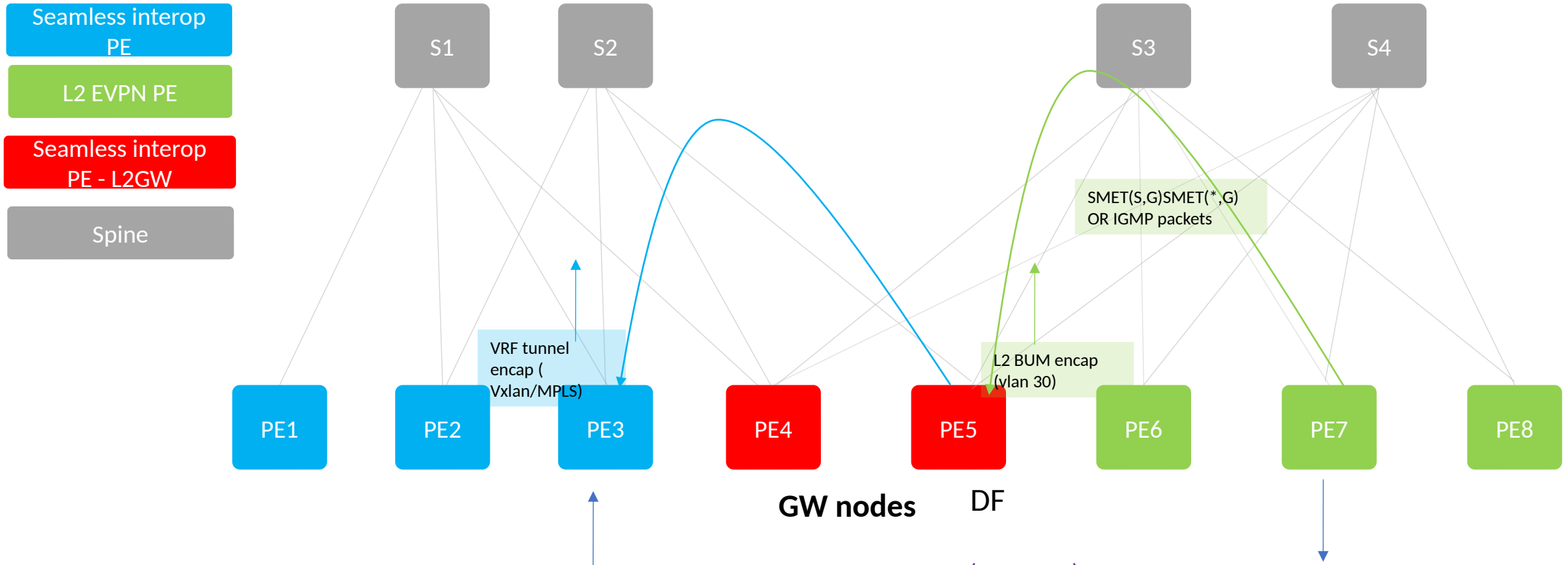
S1,G1
IIF: IRB-10
OIF: VRF tunnel (MVPN),IRB-30

R2 – *, G1
vlan 30

S1, G1 – vlan 10

L2 EVPN interop – Source behind Seamless interop PE

Customer VRF info:
VLAN 10, 20, 30 – customer VLANs
IRB-X IRB interface of VLAN/BD X



L3 Mroute state at PE5(SMEG-DF)

S2,G2
IIF: VRF tunnel interface
OIF: IRB-30

New Flags in EVPN Multicast Flag EC

- Multicast Flags Extended Community is defined in [I-D.ietf-bess-evpn-igmp-mld-proxy]

Bit	Name	Reference
0-11	Unassigned	
12	SEMG	I-D.ietf-bess-evpn-mvpn-seamless-interop (This draft)
13	Seamless interop capable PE	I-D.ietf-bess-evpn-mvpn-seamless-interop (This draft)
14	MLD Proxy Support	I-D.ietf-bess-evpn-igmp-mld-proxy
15	IGMP Proxy Support	I-D.ietf-bess-evpn-igmp-mld-proxy

Bit 12 - Seamless interop EVPN Multicast Gateway(SEMG) . PE which is configured as gateway device for L2 EVPN interop sets this flag.

Bit 13 – All PE that support seamless interop procedures sets this flag

Next Steps

- Has been around for almost five years
- This solution is widely deployed in the Industry across many sectors (Financial , Data centers, Service provides, Broadcasting, Universities, etc.)
- Requesting WG last call