

Multicast in L3VPN Signaled by EVPN Type-5 Routes

draft-zzhang-bess-mcast-in-evpn-signaled-l3vpn-00

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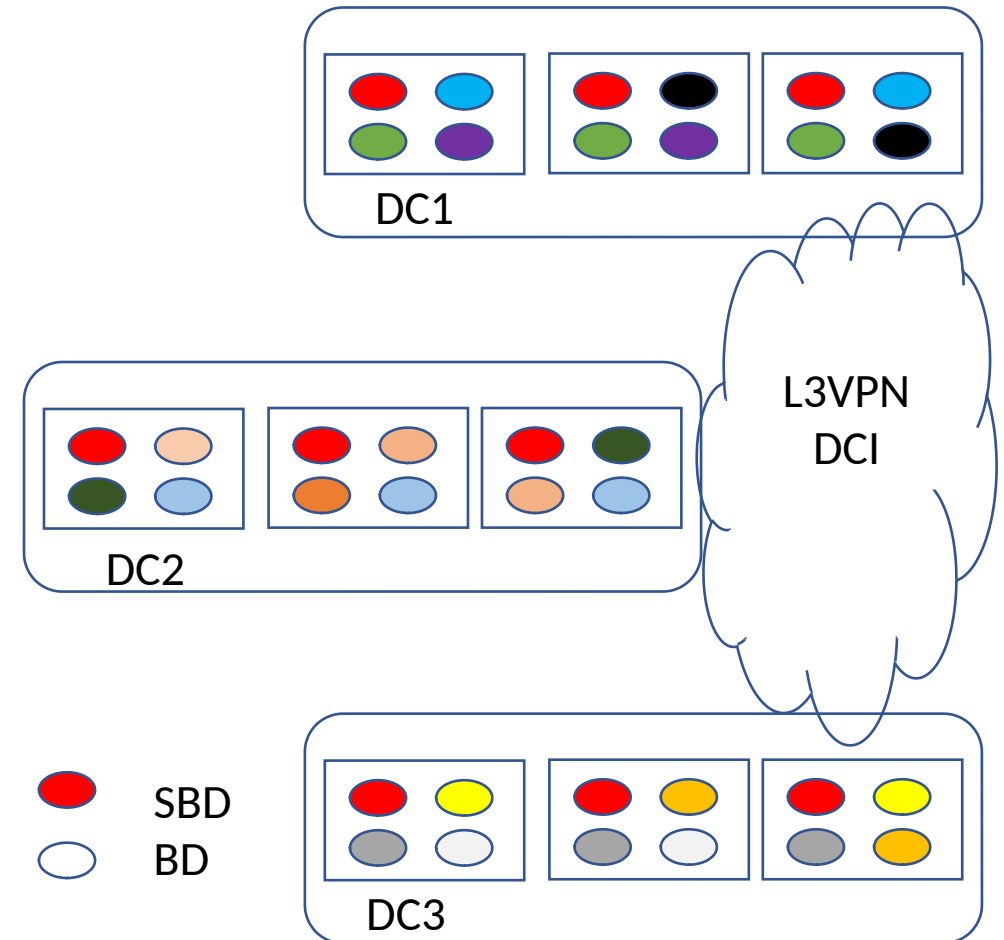
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L3VPN signaled by EVPN Type-5

- Traditionally, L3VPNs are signaled by BGP "MPLS-labeled VPN address" SAFI and use MPLS tunnels
 - RFC2547/4364
 - Multicast is per RFC6514/6514
- [ietf-bess-evpn-prefix-advertisement] specifies another way of l3vpn signaling - via EVPN SAFI Type-5 routes
 - Good for where EVPN is also needed
 - Allows use of VXLAN tunnels
 - May be used even if EVPN is not used at all
 - Though RFC2547/4364 signaling could be augmented with Tunnel Encapsulation Attribute for use of other tunnel types
 - Multicast is not yet specified – hence this document

Option 1: Optimized Inter-Subnet Multicast

- L3VPN signaled by EVPN Type-5 is used for EVPN DCI
 - Some EVPN BDs are not stretched across DCs
- Use OISM, with SBD stretched across DCs
- Advantages
 - All-EVPN solution
 - No RP procedures needed for ASM



Option 2: Reuse RFC6514 Procedures

- Existing RFC6514 procedures, plus:
 - EVPN Type-5 routes used for UMH selection
 - PEs at C-S/C-RP sites attach VRF Route Import EC and Source AS EC to EVPN Type-5 routes
- Applicable scenarios
 - Pure L3VPN, no EVPN
 - EVPN, with some source/receiver sites connected to non-EVPN PEs
 - OISM can not extend to those non-EVPN PEs
 - OISM could be used, but there is concern with stretching SBD
- This may not be desired for some operators
 - MCAST-VPN SAFI defeats one of the purposes of L3VPN with EVPN signaling

Option 3: Adapting RFC6514 Procedures

- RFC6514 procedures with EVPN signaling

MVPN		EVPN	
Type	Name	Type	Name
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1	Intra-AS I-PMSI	3	IMET
2	Inter-AS I-PMSI	9	Per-Region I-PMSI
3	S-PMSI	10	S-PMSI
4	Leaf	11	Leaf
5	Source Active	TBD	Source Active (added in this spec)
6	(*,G) C-Multicast	6	SMET
7	(S,G) C-Multicast	6	SMET

- Enhancements
 - SMET/C-multicast routes with optional Leaf Tracking semantics
 - Targeted SMET routes (just like RFC6514 C-multicast routes)
- “re-inventing the wheel”
 - Only for operators who insists on EVPN SAFI only yet can’t use OISM in all scenarios

Next steps

- Seeking comments
- Add specification details
- Will seek adoption after a couple of more revisions