

P2MP Policy

draft-ietf-pim-sr-p2mp-policy

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I E T F[®]

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Update

Update/Relevant Drafts

Multiple Vendors are in the mist of implementing this draft.

[draft-spring-sr-replication-segment \(adopted\)](#)

[draft-ietf-pim-sr-p2mp-policy \(adopted\)](#)

[draft-hb-spring-sr-p2mp-policy-yang-01](#)

[draft-ietf-bess-mvpn-evpn-sr-p2mp-02 \(adopted\)](#)

[draft-hsd-pce-sr-p2mp-policy-03 \(adoption call on going until Nov 25th\)](#)

[draft-hb-idr-sr-p2mp-policy-04 \(asking for adoption in this IETF, IPR call has been concluded\)](#)

[draft-hb-pim-p2mp-policy-ping-001 \(adoption call on going\)](#)

Replication Segment

- Previously replication segment was at the last topological SID in the SID List
- With EVPN and other applications using Replication segment it is desirable to allow other topological SIDs to follow the replication segment, as an example:
 - Application SIDs to steer the traffic beyond the leaf node
- At a bud or leaf node the action for a replication segment is
 - Look at the next SID in SRH, (i.e. End.DT2/4/6 with local behavior)
 - There may not be a next SID as well, (i.e. MVPN PMSI without a service label)

Thank You!

SRv6 Replication Segment

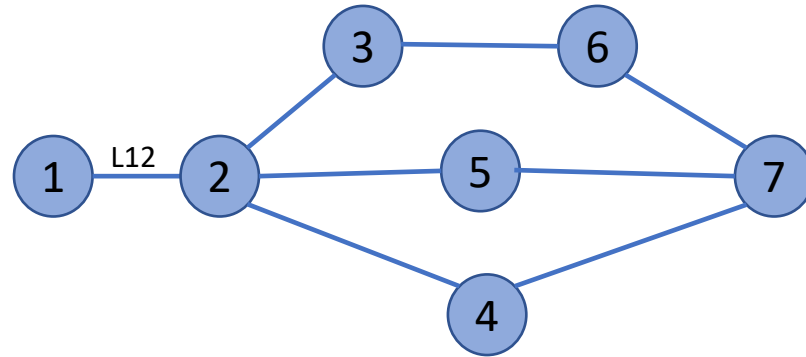
- Extends SRv6 Network Programming for replication function
 - Replication SID associated with a Replication Segment
 - SRv6 Replication SID encoded in FUNCT of SRv6 SID
 - H.Encaps function at Root node to encapsulate SRv6 Replication SID
 - End.Replicate function at Replication Nodes
- Like SR-MPLS
 - Replication SID label is associated with the Replication Segment
 - Replication SID in FUNCT portion of SRv6 SID is associated with the Replication Segment

End.Replicate Function

- Local function on a Replication Node
- Associated with a Replication SID
- Enables Node to:
 - Replicate incoming packet matching Replication SID in IPv6 DA. Downstream Replication SID written in outer IPv6 DA.
 - On Leaf node, payload is decapsulated and forwarded based on local config
 - Bud-node performs both actions

Example

- SRv6 SID space is 2001:db8:cccc::/48
- 2001:db8::<N>/128 is loopback of node N
- 2001:db8:cccc:<N>::/64 is SID space at node N
- Function :CN:: is End.X with PSP to node N
 - 2001:db8:cccc:<N>:C<J>::/128 is End.X PSP from node N to J
- Function :F<N>:: is End.Replicate function
 - 2001:db8:cccc:<N>:F<N>::/128 is **End.Replicate** at node N
- Replication Segment (Tree): 1 to 6,5,7
 - Replication via 2
 - Packet from node 2 to node 7 must traverse node 4
- Packet (A,B2) steered into RS at node 1



Replication segment at 1:

Replication SID: 2001:db8:cccc:1:F1::0

Replication State at 1:

Node 2: <2001:db8:cccc:2:F2::0->L12>

Replication State at 2:

Node 6: <2001:db8:cccc:6:F6::0>

Node 5: <2001:db8:cccc:5:F5::0>

Node 7: <2001:db8:cccc:4:C7::0, 2001:db8:cccc:7:F7::0>

Node 1 is root, node 2 is replication point, node 5, 6 and 7 are Leaf nodes of RS