PIM Proxy in EVPN Networks

draft-skr-bess-evpn-pim-proxy-02

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Agenda for IETF 118

- Recap for requirements that EVPN brings
- How different PIM domains can be connected over EVPN fabric?
This work belongs to BESS, why PIM?

- That's correct, most of the procedure that needs to be defined has to go in the BESS working group.
- Motivation is to take input from PIM expert to identify what cases need to be considered and what can be dropped from Native PIM.
Recap, two protocol different mode of operation

PIM
- Soft state protocol
- Hello, Join and many more control plane operation requires refresh

EVPN
- Service over BGP, which makes it hard state protocol.
- Enough work has been done to prevent flood of different control packets
- For MH, there is concept of DF which defines which link will be forwarding traffic over link
Solution requirement

- Reduce/eliminate PIM message flooding in the core and to hosts/non-multicast routers
- Initial focus on PIM Hello and J/P
- IP multicast must flow efficiently
- Prevent multicast duplication
- Mechanism to support multihoming, Multihoming with orphan links

List does not cover all possible type of packets in PIM, its just subset.
Problem statement – PIM Hello and J/P

- PIM Hello is sent periodically to discover other PIM routers being present in the network.
- In the topology, currently, PIM hellos have to be flooded across the core.
- PIM J/P also need refresh and sent over core.
Problem statement – Multihoming and DF state

- PIM join may hash to any of the leaf
- Its EVPN DF state which will decide who can forward traffic towards CE device
Solution Overview (Detail procedure will be in next IETF)

- Multicast Router Discovery for PIM Proxy
  - Convert soft state Hello to BGP-based signaling

- PIM Join/Prune Proxy Procedures
  - Convert soft state Hello to BGP-based signaling

- PIM Assert Optimization for EVPN BDs

- EVPN multi-homing and PIM state synchronization
  - Utilize RFC 9251 procedure

- Interaction with IGMP hosts and sources in the same EVPN BD
WG comment

- Authors would like to get input from PIM WG to identify which all area are important to add support
- Comments / questions are welcome