

# PIM Proxy in EVPN Networks

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

Mankamana Mishra, Jorge Rabadan, Jayant Kotalwar, Senthil Sathappan, Zhaohui Zhang, Ali Sajassi

Nov 7<sup>th</sup> 2023 , IETF 118

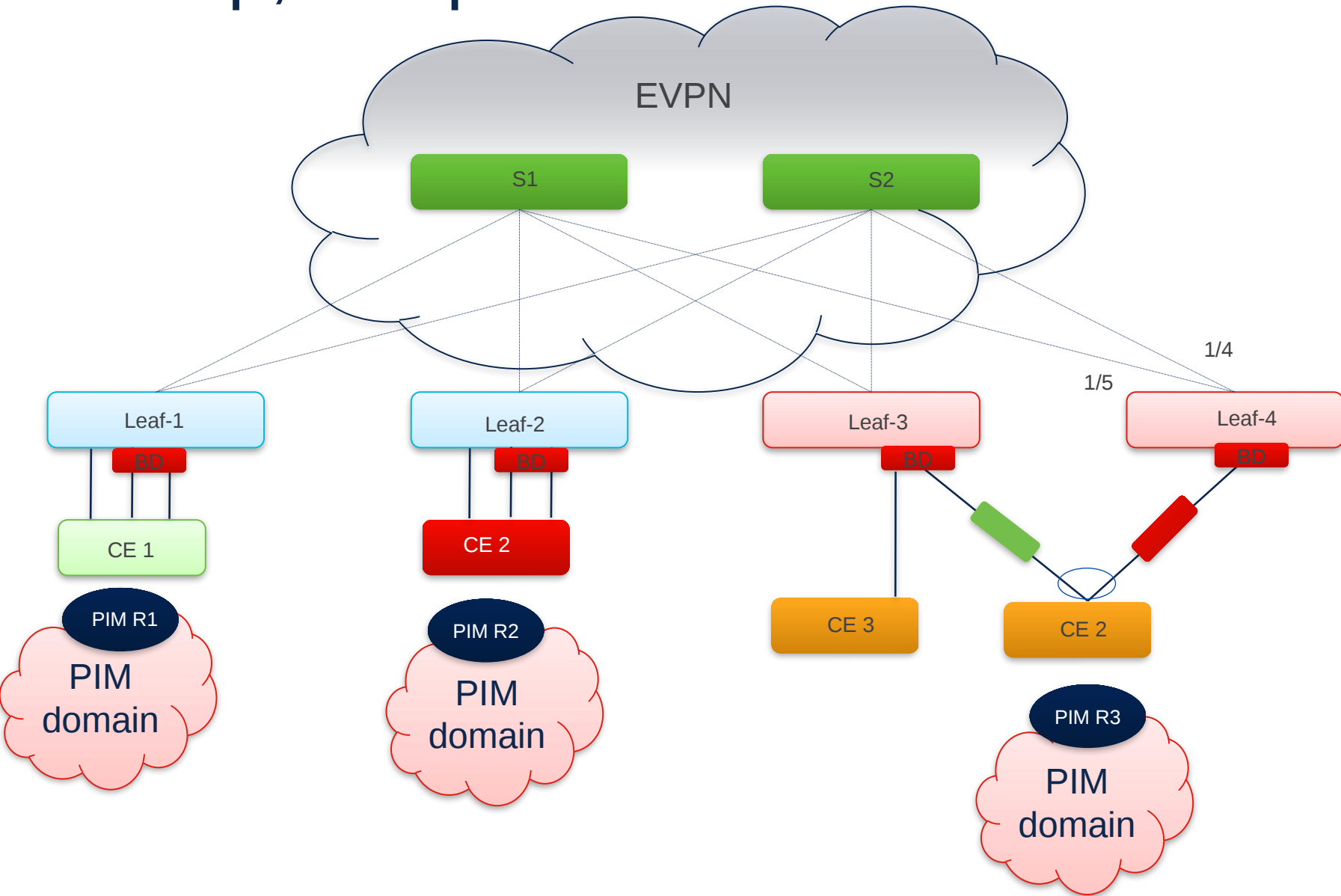
# Agenda for IETF 118

- 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

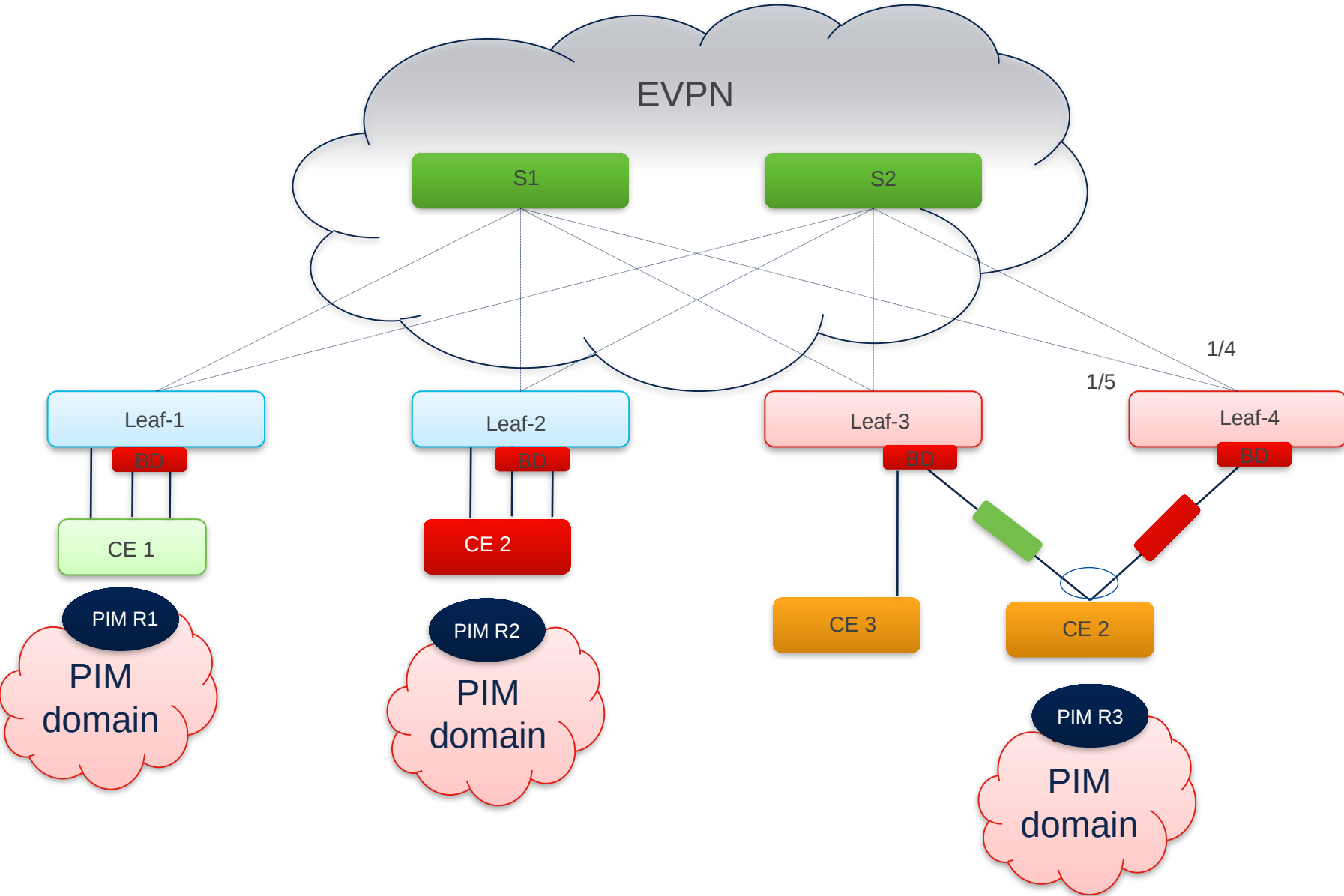
- Service over BGP, which makes it hard state protocol.
- Enough work has been done to prevent flood of different control packets
- For MH, there is concept of DF which defines which link will be forwarding traffic over link

# 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

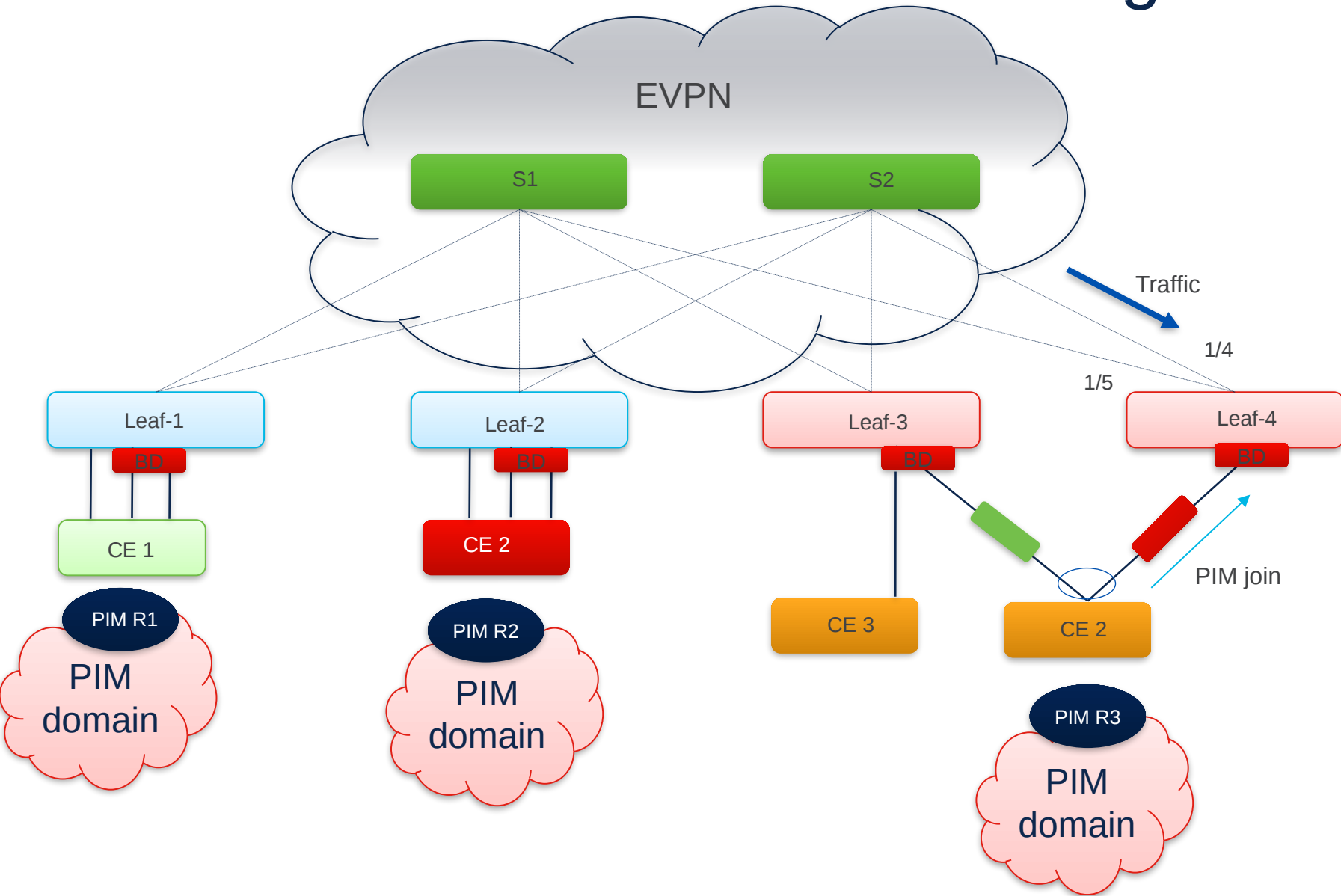
List does not cover all possible type of packets in PIM , its just subset.

# 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

