Data Plane Failure Detection Mechanisms for EVPN over SRv6

draft-liu-bess-srv6-evpn-validation

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Background and Motivation

➢The main purpose is to seek feedback on the requirement.

MPLS EVPN

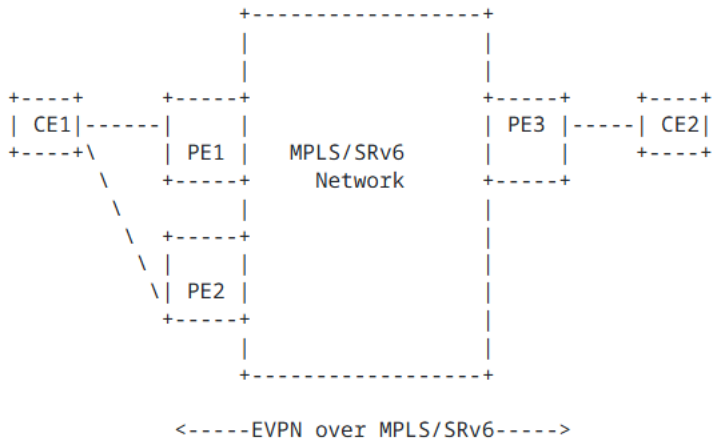
- [RFC9489]: data plane failures of MPLS EVPN can be detected using MPLS LSP Ping
- Main procedures: Echo Request sent from ingress PE to egress PE==> Egress PE validates the EVPN related info carried in FEC sub-TLVs ==> Egress PE sends the results of the validation in an Echo Reply

SRv6 EVPN

- Many implementations
- The requirement of data plane failure detection is similar with MPLS

Typical Use Cases

- Unicast data plane connectivity check
- Inclusive multicast (BUM) data plane connectivity check
- EVPN aliasing data plane connectivity check
- EVPN IP prefix (RT-5) data plane connectivity check



Options of Solution

Basic principle: 1) IPv6-based 2) E2E validation mechanism is enough(validation only on the target PE)

❖ Option 1: ICMPv6 based

- New types of ICMPv6 messages, or leveraging the existing ICMPv6 messages

Pros: SRv6 already uses ICMPv6 request/reply for data plane connectivity check, extending ICMPv6 seems like a natural route.

Cons: New packet formats/structures

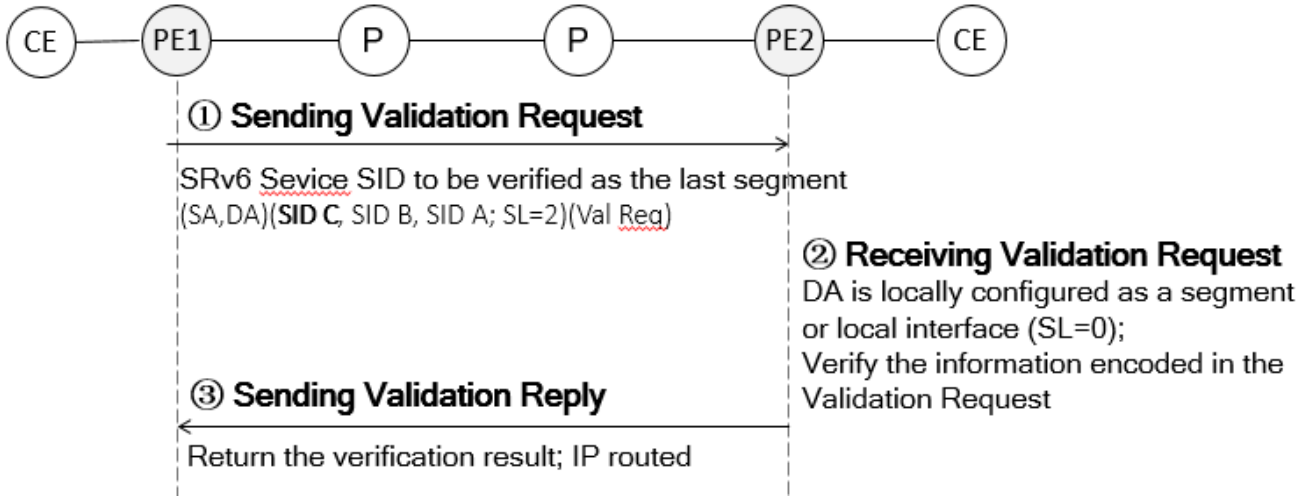
❖ Option 2: UDP-based

- the same packet format as the MPLS echo request/reply but a new UDP port

Pros: Reusing the well defined FEC sub-TLVs for VPN/EVPN in MPLS

Cons: Not that "IPv6-like"

➢Generic validation procedure



Summary&Discussions

➢ History of the draft

- v-00 submitted in 24.6
- Presented and discussed in BESS in IETF120

https://mailarchive.ietf.org/arch/msg/bess/lRLR8WTKfli3H52BDAqViwYx1gI/

- Presented the ICMPv6-based solution in 6MAN in IETF122

Consensus is required on the use case/requirement before discussing the solution.

- Co-authors added who are interested in this topic or have similar requirements in the network

➢ Question to the WG

- To what extent can we say that there's a rough consensus from the WG that data plane failure detection for SRv6 VPN/EVPN is needed ?

➢ Welcome feedback and comments!

Thank You !