draft-salam-l2vpn-evpn-oam-req-frmwk-00.txt

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Objectives

- To specify requirements & reference framework for E-VPN OAM
- Cover the following solutions
  - E-VPN
  - PBB-EVPN
  - TRILL-EVPN
  - SPBM-EVPN

Relationship to Existing Standards

- Leverages the concepts & elements defined in the following standards:
  - [RFC6136] – OAM requirements & framework for L2VPN
  - [RFC4379] – MPLS LSP Ping (for failure detection in MPLS LSPs)
  - [802.1Q] – Ethernet Connectivity Fault Management (CFM)
  - [Y.1731] – Additional CFM capabilities and Performance Management

OAM Layering

- Multiple layers to consider
  - Service Layer: Runs end to end between the sites, or Ethernet Segments, that are being inter-connected by the E-VPN solution
  - Network Layer: Extends in between the E-VPN PE nodes and is mostly transparent to the core nodes
  - Transport Layer: Dictated by the networking technology of the PSN
  - Link Layer: Dependent upon the link technology used

OAM Layering – Cont.

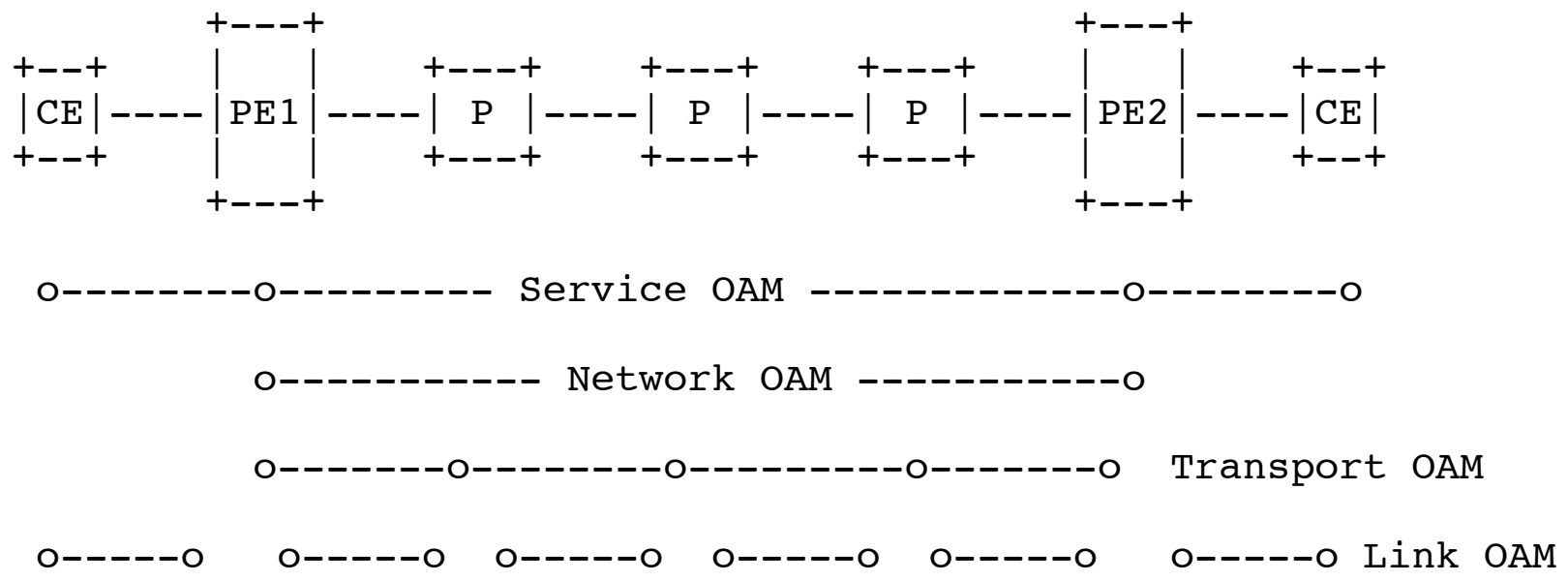

Figure 1: E-VPN OAM Layering

E-VPN Service OAM

- It depends on the service layer being transported
  - CFM (802.1Q) for E-VPN, PBB-EVPN, SPBM-EVPN
  - TRILL OAM for TRILL-EVPN
- It is visible to CEs and E-VPN PEs
- E-VPN PEs should support both MEPs and MIPs for the associated service OAM

E-VPN Network OAM

- It is visible to PE nodes only
- Analogous to PW OAM layer in VPLS/VPWS
- It provides capabilities to test connectivity for:
  - A unicast MAC address address in a bridge domain within an EVI
  - Ethernet Segment in an EVI
  - A multicast group address in a bridge domain within an EVI

E-VPN Transport OAM & Link OAM

- Transport OAM
  - It depends on the underlying transport in the PSN
  - [RFC4379] and [RFC6425] for MPLS transport layer
  - [RFC792] for IP transport layer
- Link OAM
  - It depends on the link technology being used
  - E.g. for Ethernet link, [802.3] can be used

E-VPN OAM Requirements

- Identifying Proactive Fault Management Requirements
  - Fault Detection
  - Fault Indication
    - Forward Defect Indication
    - Reverse Defect Indication
- Identifying On-Demand Fault Management Requirements
  - Connectivity Verification
  - Fault Isolation

Performance Management

- Identifying requirements for:
  - Packet Loss
  - Packet Delay
  - Packet Delay Variation (jitter)

Next Step

- Soliciting comments on the mailing list