

EVPN OAM

Requirements and Framework and BFD

draft-salam-bess-evpn-oam-req-frmwk-01

draft-gmsm-evpn-bfd-01

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draft-gmsm-bess-evpn-bfd
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EVPN OAM

Requirements and Framework

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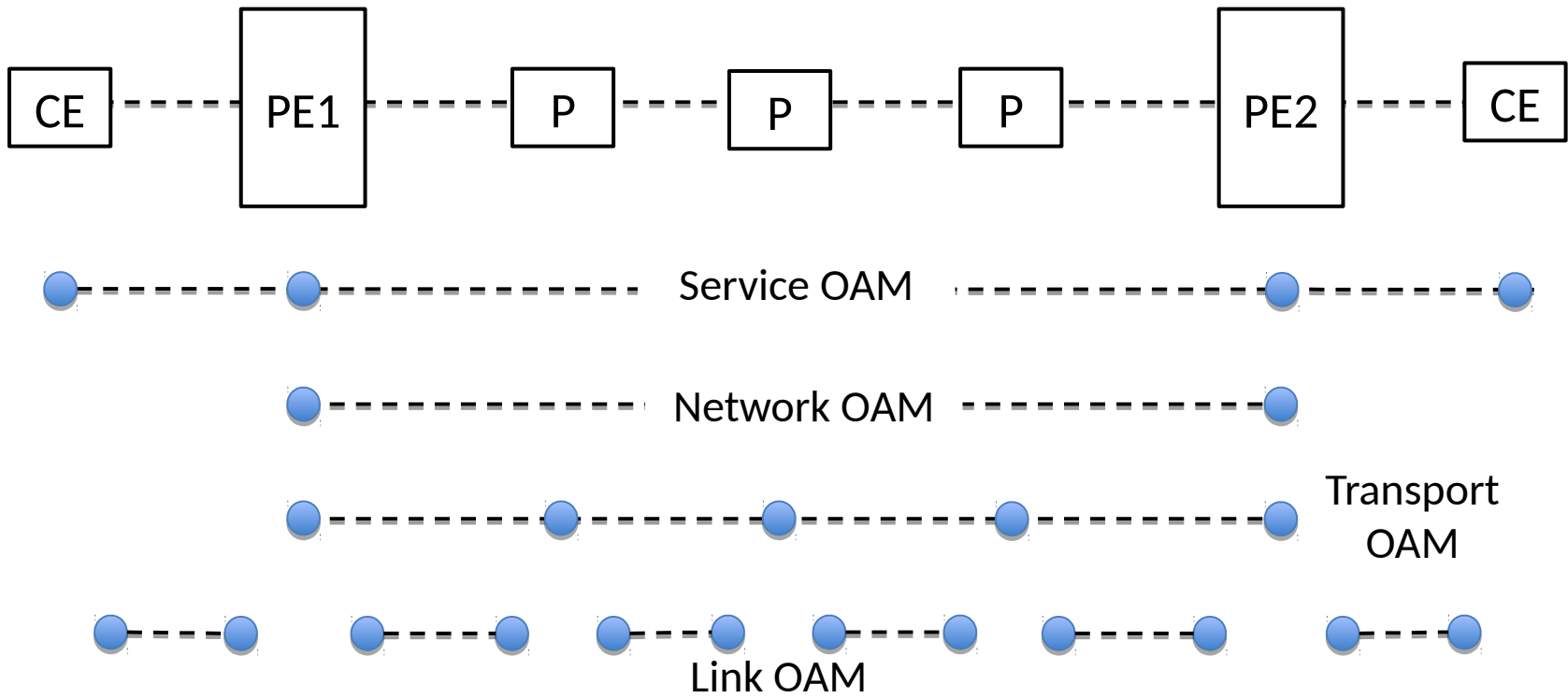
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Goals of the Draft

- Provide requirements and a reference framework for EVPN (RFC 7432) and PBB-EVPN (RFC 7623) OAM.
- Leverages existing concepts and elements including those from RFCs 6136 and 8029 and
 - IEEE Std 802.1Q Connectivity Fault Management
 - ITU-T Y.1731 “OAM functions and mechanisms for Ethernet-based networks”
- Was draft-salam-l2vpn-bess-evpn-oam-req-framwk-02

EVPN OAM Framework

Layering



EVPN OAM Framework

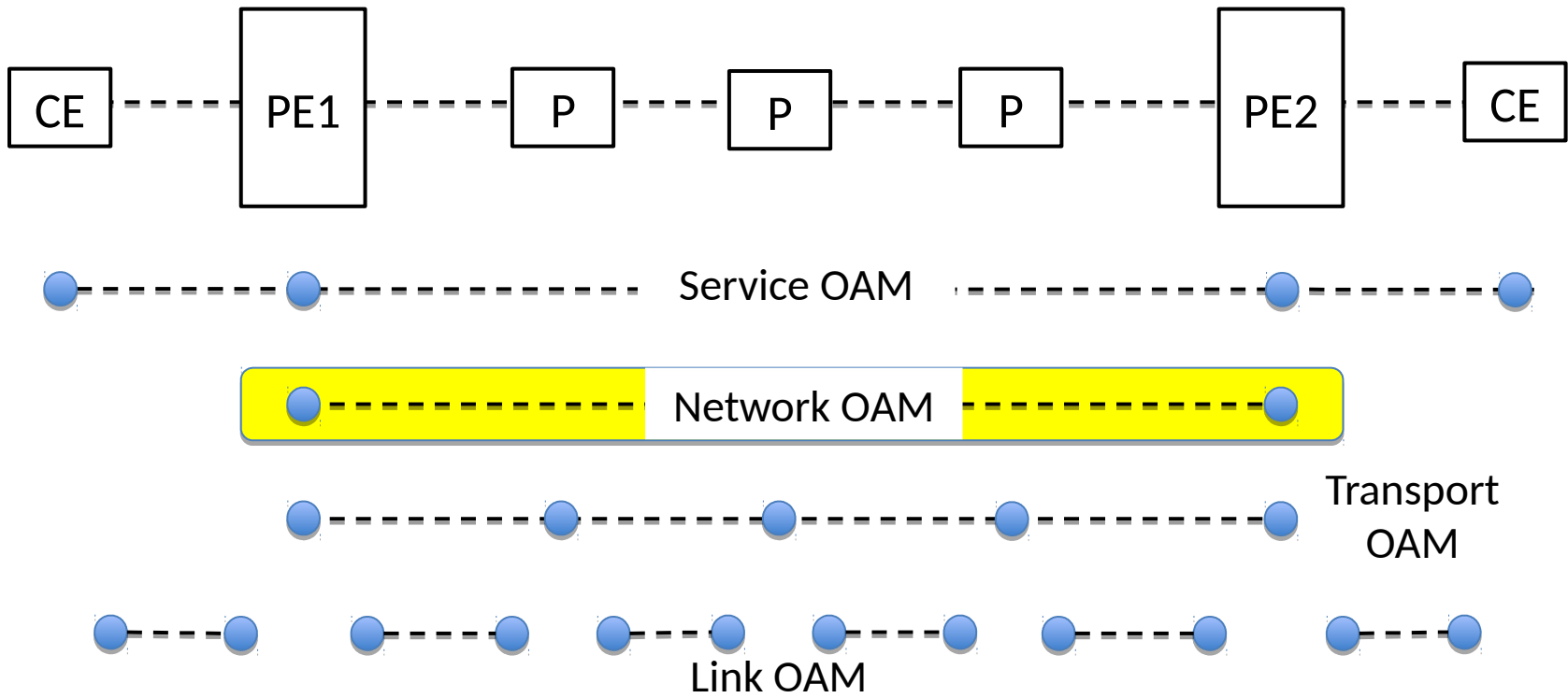
- Link OAM
 - Depends on link technology
 - Ethernet could use IEEE Std 802.3 Clause 57
- Transport OAM
 - Depend on transport technology
 - Mechanisms can include the following as appropriate
 - BFD
 - MPLS OAM
 - ICMP

EVPN OAM Framework

- Service OAM
 - CFM for Ethernet service
 - Visible to CEs and PEs
 - PEs **MUST** support MIP functions, **SHOULD** support MEP functions
- Inter-working
 - Between domains
 - Between layers

EVPN OAM Framework

Layering



EVPN OAM Framework

- Network OAM - Visible to the PE nodes only
 - MUST be able to check data plane and verify data plane against control plane:
 - MP2P tunnels supporting unicast
 - MP2P or P2MP tunnels supporting BUM
 - Split Horizon filtering
 - DF filtering
 - MUST support in-band management with the same entropy characteristics as data
 - SHOULD support both pro-active and on-demand

Changes Since Last IETF Meeting

- Comments on the BESS WG mailing list have been resolved by
 - Adding that a PE must learn CE MEP addresses and advertise those addresses along with the addresses of its own MIP/MEPs via BGP, and
 - Removing references to EVPN FECs different from data FECs.

Next Step

- Call for WG adoption.

Fault Management for EVPN Networks

draft-gmsm-bess-evpn-bfd-01

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In the Current -01 Draft

- Specifies BFD asynchronous mode proactive fault detection in RFC7432 based EVPN networks for
 - Unicast traffic
 - BUM traffic using MP2P
 - BUM traffic using P2MP (LSM)
- Obtains BFD discriminators via LSP Ping

Likely Additions in -02 Draft

- Distribution of BFD discriminators via BGP
- Cover VXLAN encapsulation as well as MPLS
- TBD

Next Steps

- Post version -02
- Request WG adoption on the mailing list

END

**EVPN OAM
REQUIREMENTS AND FRAMEWORK AND BFD**

Back Up Slides

EVPN OAM REQUIREMENTS AND FRAMEWORK

EVPN OAM Requirements

Fault Management

- Fault Detection
 - In-band per-flow, representative path, all paths
 - Monitoring of all ECMP paths not a requirement
 - Forward and Reverse Defect Indication
- Connectivity Verification
 - Variable length to test MTU
- Fault Isolation

EVPN OAM Requirements

Performance Management

- SHOULDs
 - Packet Loss, Packet Delay
- MAY
 - Jitter

EVPN OAM Requirements

Security Considerations

- MUST provide
 - Protection against denial of service due to OAM messages
 - Ability to authenticate communicating endpoints
 - Prevention of OAM message leakage outside the EVPN network