EVPN OAM
Requirements and Framework
draft-salam-bess-evpn-oam-req-frmwk-00

Samer Salam, Ali Sajassi – Cisco
Sam Aldrin – Google, John E. Drake – Juniper
Donald Eastlake d3e3e3@gmail.com – Huawei
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”
EVPN OAM Framework

Layering

CE -- PE1 -- P -- P -- P -- PE2 -- CE

Service OAM

Network OAM

Transport OAM

Link OAM
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

• 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
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 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
History, Next Step

• Was previously draft-salam-l2vpn-bess-evpn-oam-req-framwk-02

• Call for BESS WG Acceptance of this draft.
END

EVPN OAM

REQUIREMENTS AND FRAMEWORK