Fault Management for EVPN draft-gmsm-bess-evpn-bfd-00

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Problem Statement

- Detect faults between EVPN PE nodes in the overlay:
  - In-band monitoring of faults.
  - Finer granularity of fault detection compared to monitoring the LSP.
  - Separate fault monitoring for different types of transport:
    - Unicast (MP2P LSP)
    - Multicast/ BUM (P2MP/ MP2MP)
- Detect faults that could affect only a sub-set of overlay services (EVPN instances)
  - Provide mechanisms to exercise realizable ECMP paths (using entropy labels) in the underlay.
  - No guarantees of covering all ECMP paths.

BFD for EVPN - Packet Format

Unicast packet format
Transport label
EVI label
Entropy label (Optional)
GAL
G-Ach (type is TBD)
DMAC (Overlay space) – new IANA MAC? TBD
SMAC (Overlay space)
IP – header (Overlay Space)
BFD

Alternative Proposal

- Define new CC/ CV types and use packet format proposed in RFC6428:

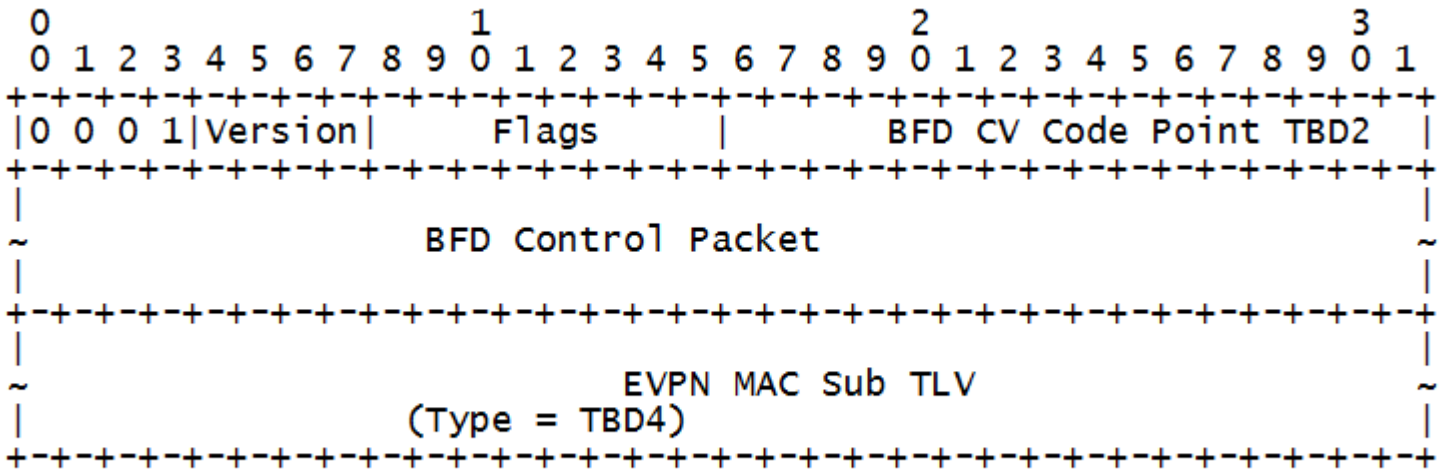

Figure 2: BFD-EVPN CV Message for EVPN Unicast

BFD for EVPN - Packet Format

BUM packet format (ingress replication)
Transport label
BUM label
Upstream allocated label (inclusive multicast) - optional
Entropy label (Optional)
GAL
G-Ach (type is TBD)
DMAC (Overlay space) – new IANA MAC? TBD
SMAC (Overlay space)
IP – header (Overlay Space)
BFD

Alternative Proposal

- Define new CC/ CV types and use packet format proposed in RFC6428:

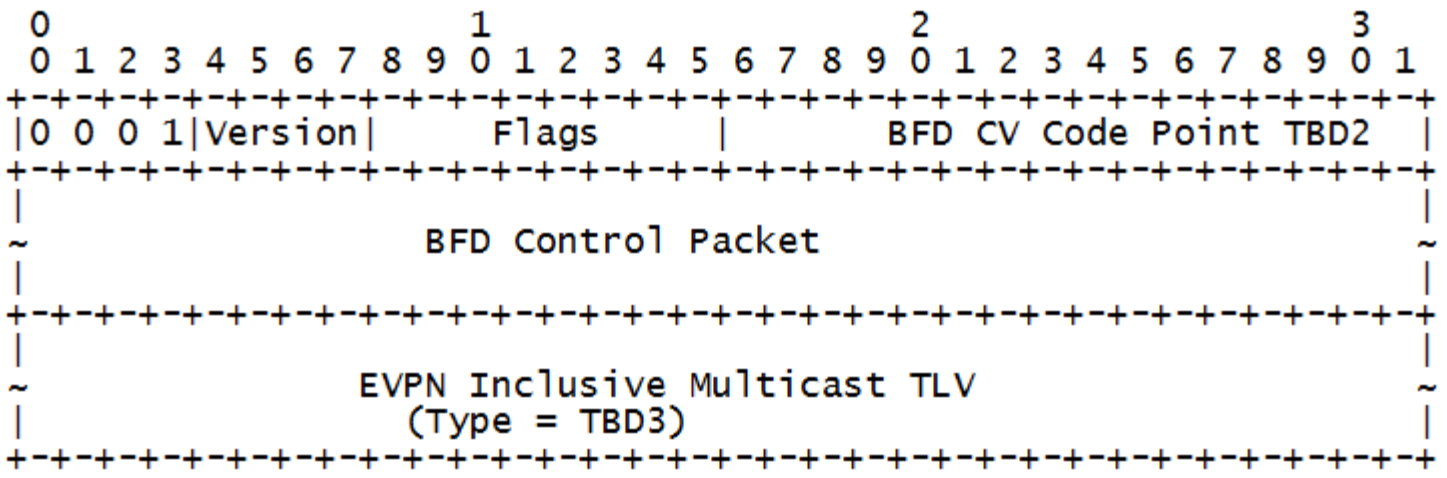

Figure 1: BFD-EVPN CV Message for EVPN Multicast
(Ingress Replication)

Inputs requested from WG

- Validity of the problem statement :
  - draft-spallagatti-bfd-vxlan-02 exists for VxLAN encapsulation.
- Comments on packet encapsulation:
  - Do we need consistent alignment of packet format with draft-spallagatti-bfd-vxlan-02?
- Comments on other BFD session aspects:
  - Bootstrapping using LSP Ping (with EVPN FEC).
  - BFD session maintenance (ECMP considerations)
  - BFD session tear-down

Next Steps

- After discussion based on comments received, submit next revision.
- Finalize BFD packet encapsulation, BFD session setup and maintenance procedures.