

Directed BFD Return Path

draft-mirsky-mpls-bfd-directed-01

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Refresh: Problem Statement

- Ability to interpret uni-directional defect as bi-directional failure depends on co-routedness of OAM flows
- BFD implicitly uses co-routedness of IP:
 - single hop – IP links presumed bi-directional co-routed;
 - multi-hop – IP best route model creates bi-directional and mostly (ECMP is the exception) co-routed BFD sessions
- Directing reverse direction of an BFD session is useful, e.g. when forward direction uses explicitly routed path
- MPLS data plane – primary interest
- IPv6 data plane - considered

Proposed solution

- LSP Ping is used to bootstrap a BFD session in IP/MPLS environment [RFC 5884]
- Introduce BFD Reverse Path TLV
 - sub-TLV would characterize the return path
 - can re-use sub-TLVs defined in IANA registry MPLS LSP Ping TLVs sub-registry sub-TLVs for TLV Type 1
 - introduce two new sub-TLVs:
 - Segment Routing MPLS Tunnel
 - Segment Routing IPv6 Tunnel
 - New sub-TLVs may be used in Return Path TLV [RFC 7110]

Update

- Clarified use of the Reverse Path field for the Segment Routing environment:
 - draft kumarkini-mpls-spring-lsp-ping proposes to add three new sub-TLVs that may be used with Target FEC TLV;
 - further, but mostly for the traceroute case, draft suggests:

“Initiator MAY include FECs corresponding to some or all of segments imposed in the label stack by the initiator to communicate the segments traversed.”
 - we clarify that:

“When LSP ping is used to bootstrap BFD session this document updates this and defines that LSP Ping MUST include the FEC corresponding to the destination segment and SHOULD NOT include FECs corresponding to some or all of segment imposed by the initiator.”

Next steps

- Solicit comments & feedback from the WG
- Work with authors of draft-chen-mpls-bfd-enhancement