BFD for BIER

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Motivation

• BIER BFD is used to provide verification of multipoint or multicast connectivity between a sender (head) and a set of one or more receivers (tails).
  • The head (the sender) is BFIR, and the tails (the receivers) are BFERs in BIER
BIER BFD

- BIER BFD is based on draft-ietf-bfd-multipoint
  - Uses Demand mode (defined in RFC 5880) – no three-way handshake

- BFERs use source address and My discriminator to demultiplex BFD sessions
  - Source address:
    - BFIR-id and BIER MPLS Label (MPLS network)
    - BFIR-id and BIFT-id (Non-MPLS network)
BIER BFD Encapsulation

• BIER encapsulation is specified in draft-ietf-bier-mpls-encapsulation, If the protocol field is 5, the payload is OAM packet.

• We defines the BIER OAM packet format in this document.

• BIER OAM header is used to demultiplex BIER OAM protocol (Msg type), and MultipointTail do not need the IP/UDP port to identify the BIER BFD packet.

```
+--------------------------------+      +--------------------------------+      +--------------------------------+      +--------------------------------+
|                               3  |      |                               2  |      |                               1  |      |                               0  |
| 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1               |
+--------------------------------+      +--------------------------------+      +--------------------------------+      +--------------------------------+
| V | Msg Type | Flags | Length | BIER OAM Control Packet |
+--------------------------------+      +--------------------------------+      +--------------------------------+      +--------------------------------+
```

V: version
Msg Type: identifies OAM protocol, if it is BFD, the BIER OAM control packet field is BIER BFD packet capability.
Bootstrapping BIER BFD session

- **One-hop Bootstrapping**
  - Uses ISIS BFD-Enable TLV [RFC6213]
  - MTID: BIER multi-topology identify
  - NLPID: a Network Layer Protocol ID [RFC6328], suggesting 0XC2 (To be assigned) for BIER

- **Multi-hop Bootstrapping**
  - Use BIER OAM ping [I-D.ietf-bier-ping]
Comments

• Your comments, suggestions, questions always welcome and greatly appreciated.

• WG adoption?
Thank you