S-BFD over SRv6

draft-li-sbfd-over-srv6-00

Zhiqiang Li (China Mobile, Presenter)
Tao Sun (China Mobile)
Wei Cheng (Centec)
Junjie Wang (Centec)
Background and Motivation

- Bidirectional Forwarding Detection (BFD) can be used to monitor paths between nodes.

- Seamless BFD (S-BFD) provides a simplified mechanism which is suitable for monitoring of paths that are setup dynamically and on a large scale network.

- This draft describes a method to simplify the implementation of S-BFD over SRv6 by using SRH.flag to instruct the S-BFD peer node to do swap operation of SRv6 SID list.
Procedure of S-BFD over SRv6

• Three kinds of Node
  • Init Node:
    • Encapsulate SRH with SID List and SRH.Flag[5]=1;
  • Intermediate Node:
    • If (SID != My SID)
      • Forwarding
  • Reflector Node:
    • If (SID == My SID) && (SRH.Flag[5] == 1)
      • swap operation of the SRv6 SID list
Procedure of S-BFD over SRv6 (continue)

- SRv6 SID operations on the initial node A
  - The SRv6 SID List \{A, B, C, D\} is pushed into Node A

- SRv6 SID operations on the Reflector node D
  - The SRv6 SID List \{A, B, C, D\} is swapped to \{D, C, B, A\} in Node D
  - Return Path: D -> C -> B -> A

IPv6 Header
SRH(SL=3)
SID[A,B,C,D]
S-BFD Payload

IPv6 Header
SRH(SL=1)
SID[A,B,C,D]
S-BFD Payload

IPv6 Header
SRH(SL=3)
SID[D,C,B,A]
S-BFD Payload

IPv6 Header
SRH(SL=1)
SID[D,C,B,A]
S-BFD Payload
Conclusion

This Draft proposed a simple S-BFD over SRv6 scheme, include:

• New action of the Reflector Node
   
   Swap the SRv6 SID list

• Extension of SRH
   
   SRH.Flag[5] is used to trigger the Swap operation
Next Step

- Collect feedback from SPRING
- Comments and discussions in the mailing list
- Seek for collaboration