S-BFD over SRv6

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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

S-BFD Init Node	→	S-BFD Intermediate Node	→	S-BFD Reflector Node

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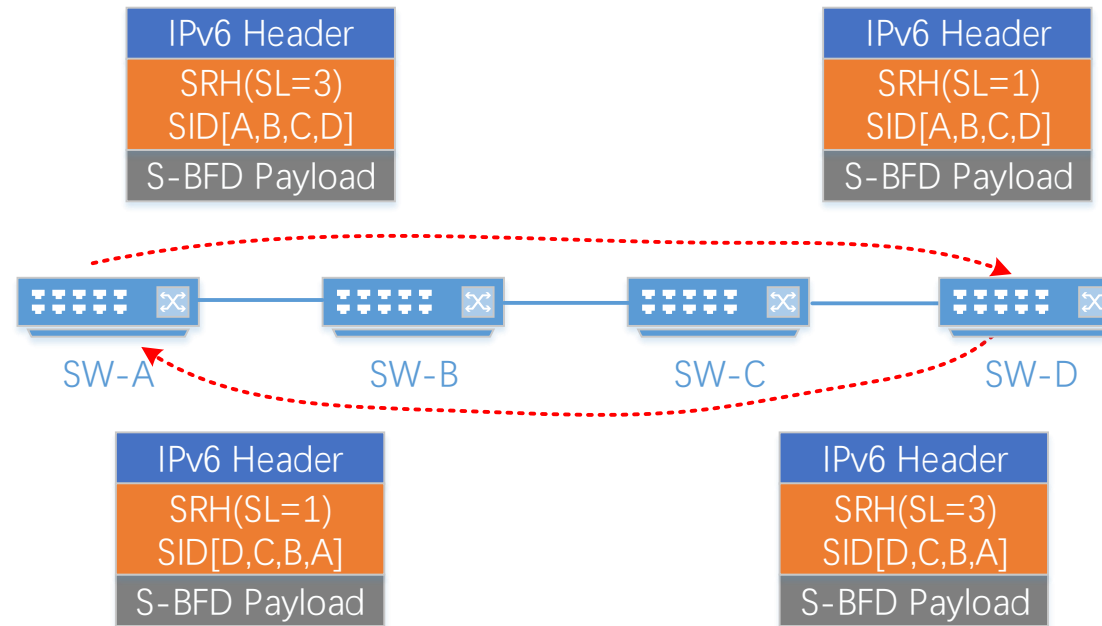   - Encapsulate SRH with SID List and SRH.Flag[5]=1;
  - Intermediate Node：
    - If （SID=！ My SID）
      - Forwarding
  - Reflector Node：
    - If （（SID== My SID） &&（SRH.Flag[5]==1））
      - swap operation of the SRv6 SID list

Procedure of S-BFD over SRv6 (continue)

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

SW-A   SW-B   SW-C   SW-D

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

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

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 swaped to {D, C, B, A}. in Node D
- Return Path: D->C->B->A

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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