

BGP Link-State Extensions for Seamless BFD

draft-zhuang-idr-bgp-ls-sbfd-extensions-00

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Problem and Requirement

- Draft-ietf-bfd-seamless-base introduces Seamless BFD (S-BFD)
- IS-IS, OSPF and OSPFv3 have been extended to advertise the S-BFD Discriminators.
 - Draft-ietf-isis-sbfd-discriminator & Draft-ietf-ospf-sbfd-discriminator.
- Seamless MPLS [I-D.ietf-mpls-seamless-mpls] extends a large network into a single MPLS domain
 - Often include core domain and integrates aggregation and access domains
 - Can be organized across different autonomous systems
 - An E2E LSP will be created across multiple autonomous systems / areas
 - Meanwhile, the customer will see only two service-end points
 - BFD MAY be used for the Service Layer (e.g. for MPLS VPNs, PW) and the Transport Layer. So the requirement is proposed that the BFD session has to span across AS domain.
 - Flooding-based propagation of the S-BFD Discriminators using IGP is limited by the perimeter of the IGP domain
- For advertising the S-BFD Discriminators which span across IGP domains (e.g. multiple ASes), BGP can be introduced.
 - This document defines extensions requirement to the BGP Link-state address-family to carry the S-BFD Discriminators information via BGP.

BGP-LS Extensions for S-BFD Discriminators Exchanging

- The BGP-LS NLRI can be a node NLRI, a link NLRI or a prefix NLRI that model the IGP network .
- The corresponding BGP-LS attribute is a node attribute, a link attribute or a prefix attribute.
- S-BFD Discriminators TLV can be mapped into a TLV of 'Node Attribute' .

S-BFD Discriminators TLV in Node Attribute

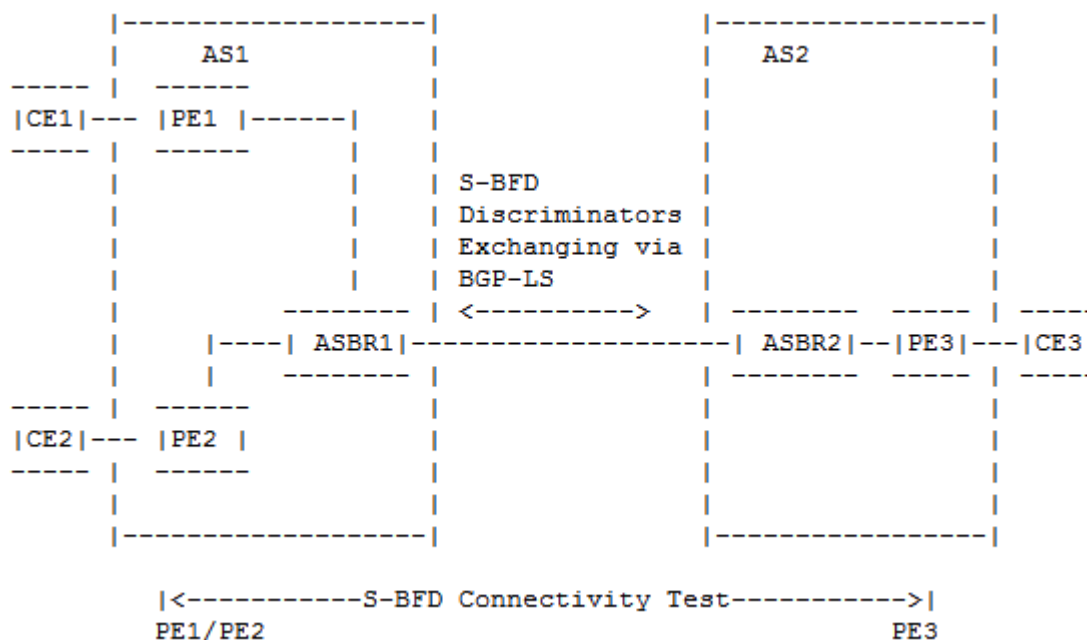
The following 'Node Attribute' TLVs are defined:

TLV Code Point	Description	Length	ISIS/OSPF TLV/Sub-TLV
TBD	S-BFD Discriminators	variable	TBD
...

The Value portion of the TLV is variable and is equal to the corresponding Value portion of the TLV defined in [I-D.ietf-isis-sbfd-discriminator] and [I-D.ietf-ospf-sbfd-discriminator].

Inter-AS VPN Network Use case

- In an inter-as VPN network as follows, ASBR1 and ASBR2 establish a BGP-LS session for exchanging S-BFD Discriminators information.



- Using S-BFD Procedures defines in [I-D.ietf-bfd-seamless-base] between the PEs which belong to different AS.

Next Steps

- Collect feedbacks from WG
- Revise the draft