BGP-LS EPE InterAS TE
IETF 106

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Agenda

- Background
- Problem statement
- Proposal
- Updates from previous version
- Ask & Next step
Inter-AS SR TE

Background

- Draft regarding BGP-LS extensions for BGP EPE; Not related to IGPs running (passive) on Inter-AS links.

- draft-ietf-idr-bgpls-segment-routing-epe-17 describes mechanism to carry BGP peering segments in BGP-LS.
  - Refers to RFC7752 for relevant TE link attributes.

- Gaps in BGP-LS EPE in scenarios where centralized Controller needs to build paths for inter-AS TE purposes.
Inter-AS SR TE

Problem-1 & Proposal

- Managed as single administrative domain and centralized Controller to establish Inter-AS SR TE.
  - Issue: No mechanism to inform links used for providing FRR protection.

- Proposal
  - Introduces ‘F’ flag for the peering SID.
  - FRR SID will be included in corresponding PeerNodeSID/PeerAdjSID advertisement with F bit set.
  - Links represented by FRR SIDs will carry traffic when there is a failure.
Inter-AS SR TE
Problem-1 & Proposal

- PeerAdjSID 2000 is backup for PeerAdjSID 1000
- If link representing PeerAdjSID 1000, traffic is forwarded along link 2 represented by PeerAdjSID 2000
  - Issue: Controller is not informed link2 is being used as backup for link 1

- Proposal
  - Introduces ‘F’ flag for the peering SID.
  - BGP-LS attribute for PeerAdj SID advertisement for 1000 will also include another Peering segment attribute with label 2000 and with flag having F bit set
Inter-AS SR TE
Problem-2

- eBGP multi-hop peering across multi-AS network, parallel links used for load-sharing & network managed by centralized Controller.
  - Issue: Local & Remote BGP peering addresses are not sufficient to identify the underlying links.
Inter-AS SR TE Proposal-2

- PeerAdjSID MUST be advertised for Inter-AS links.
  - Should contain TE attributes, local, remote interface addresses.
- PeerNodeSID should contain link local IP address
  - Hence, Controller can co-relate the Inter-AS links.
- Caveat: Unnumbered interfaces for Inter-AS links are not supported.
Updates in -02 version

- Multiple pairs of interface local/remote address pairs
- IPv4/IPv6 address pairs
- IPv4 followed by IPv6 address pairs

Figure 3: Link Address TLV carried as attribute
Summary & Next steps

- Proposal strengthens Inter-AS SR TE in the mentioned scenario.

- Request review and comments
Thank you