High Level Updates

• v00 presented at IETF 100 and v03 presented at IETF 101
• SRv6 specifications have matured with implementations and deployments
  • Relevant documents progressing in individual WGs
• Major update to this document to cover BGP-LS extensions for SRv6
  • Alignment with underlying IGP extensions for SRv6 (viz. draft-bashandy-isis-srv6-extensions-05)
  • Alignment with the latest SRv6 Architecture (viz. draft-filsfils-spring-srv6-network-programming-07) which is under adoption call in SPRING WG
  • Covers advertisement of all equivalent IGP SRv6 extensions and BGP EPE extensions for SRv6
BGP-LS extensions for SRv6 – high level view

• Node Attributes
  • SRv6 Capabilities – new TLV
  • New MSD Types for SRv6 – leverage existing Node MSD TLV
  • Algorithm Support – use existing SR Algorithm TLV

• Link Attributes
  • SRv6 End.X SID for IGP adjacency and BGP EPE Peer Adjacency (equivalent to adjacency SID of SR-MPLS)
  • SRv6 LAN End.X SID for IGP adjacency to non-DR/DIS routers on LAN (equivalent to LAN adjacency SID of SR-MPLS)
  • New MSD Types for SRv6 – leverage existing Link MSD TLV

• Prefix Attributes
  • SRv6 Locator – new TLV
New BGP-LS NLRI Type – SRv6 SID

• Used to advertise individual SRv6 SID (128 bit) instantiated in the ‘My SID Table’ on the SRv6 capable node

• Introduced as a New NLRI so that
  • Avoid overload of Node NLRI with large no. of SRv6 SIDs as its attribute
  • Enables granular BGP updates and reduces churn for Node NLRI
  • Each SRv6 SID attribute can be expressed in an extensible & granular way

• SRv6 SID Attributes
  • SRv6 Endpoint Function TLV – describes function associated with the SID
  • SRv6 BGP EPE Peer Node SID TLV – used for providing BGP peering context for the equivalent of the BGP Peer Node and Peer Set SIDs of SR-MPLS
Node Attribute TLVs

• SRv6 Capabilities
  • Indicate node supports SRv6
  • Flags indicate other capabilities e.g. OAM support with O-bit of SRH

• Node MSD TLV leverage with definition of new MSD types for SRv6 SRH operations

• SR Algorithm TLV (1035) is used for both SR-MPLS and SRv6
Link Attribute TLVs

• SRv6 End.X SID TLV

• SRv6 LAN End.X SID TLV
Link Attribute TLVs – contd.

- Link MSD TLV leverage with definition of new MSD types for SRv6 SRH operations

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Prefix Attribute TLV

• SRv6 Locator
  • Indicates that the IPv6 prefix is a SRv6 Locator
  • Associated algorithm (i.e. flex-algo)
  • Metric of the locator
  • Flags indicating its attributes (e.g. anycast, down-bit)
SRv6 SID NLRI

- SRv6 SID NLRI
  - Carries a single SRv6 SID
  - Local Node descriptors as per RFC7752

- SRv6 SID Descriptors
  - SRv6 SID Information TLV (new)
  - Multi-Topology Identifier TLV (existing)
SRv6 SID Attributes

• **SRv6 Endpoint Function TLV**
  • Indicates the function and algorithm of the SRv6 SID

• **SRv6 BGP Peer Node SID TLV**
  • For BGP EPE Peer SID – single TLV describing the peer
  • For BGP EPE Peer Set SID – multiple instances for TLV describing each peer in the set
Next Steps

- Review and inputs/feedback are requested
- Requesting WG adoption