

LSVR BGP SPF

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Status Update

- Draft version 6 was submitted on 9-30-19
- WGLC successfully done
 - Got reviews and feedback from lot of folks
- Draft Implementation now available
 - Opensource implementation also on its way

WGLC Comments



- Support for mechanism to mark the node
 - Not capable of acting as a Transit node
 - Cannot participate in SPF
 - Draft version 6 now makes SPF Status TLV applicable to BGP-LS Node NLRI to support these markings.
- Draft Nits
 - Next revision will take care of all the nits

Implementation update



- At least one BGP implementation is available
- Another open source BGP implementation with FRR in progress
- At least three operators have signed up to test and evaluate bgp-spf extensions

Implementation update (Cont'd)



- YANG Model for the BGP SPF SAFI defined
 - Fairly straightforward model
 - Model can be extended for BGP-LS SAFI
- Want to start working on the model draft, protocol implementation draft and experience draft as soon as possible



Implementation 1 - Arccus

- Implemented by Pushpasis Sarkar
- Almost all sections of the draft have been implemented
- Challenge in generating remote router-id when servers don't run bgp-spf or in controller assisted peering model
 - Automated by receiving the information from LLDP, L3DL
 - BFD can be leveraged for bidirectional link verification
 - Can be statically configured

Implementation 1



- Interop with other IGP and route tie-breaking handled using protocol preference (bgp-spf has higher preference)

Test Details



- Standard CLOS using Leaf/Spine topology
- 10K v4 and v6 routes
- 32 way ECMP (320K Paths)
- Dual Stack tested
- BGP peering between Leaf/Spine



Implementation 2 - FRR

- Implemented by Santosh Pallagatti
- AFI/SAFI support for BGP done
- Packet encode/decode support for inbound and outbound update generation is done
- SPF computation WIP
- Route download to RIB WIP



Thank you