SEAMLESS SR
draft-hegde-spring-mpls-seamless-sr
IETF 110

Shraddha Hegde, Juniper Networks
Chris Bowers, Juniper Networks
Alex Bogdanov, Google
Arkadiy Gulko, Refinitiv
Xiaohu Xu, Alibaba Inc.
Jim Uttaro, AT&T
Luay Jalil, Verizon
Mazen Khaddam, Cox communication
Andrew Alston, Liquid Telecom
Luis Contreras, Telefonica
Agenda

• Draft draft-hegde-spring-mpls-seamless-sr-04 split into two documents

Requirements & usecases
  • draft-hegde-spring-mpls-seamless-sr-05

Solution
  • draft-hegde-spring-seamless-sr-architecture-00
AS and IGP domain Requirements

> Multiple AS connected with EBGP

> Single AS, multiple IGP on the same border node

> Single AS, multiple IGP, no common border
Tunneling Requirements

- SR-MPLS tunnels with IPv4 underlay
- SR-MPLS tunnels with IPv6 underlay
- SR-MPLS tunnels with dual stack underlay
- SRv6 tunneling end-to-end
- Segment routing TE tunnels and color-only policies as described in [I-D.ietf-idr-segment-routing-te-policy] (both SR-MPLS and SRv6)
- Flex-algo [I-D.ietf-lsr-flex-algo] (both SR-MPLS and SRv6)
- Pure IP fabric (incapable of supporting MPLS or SRv6 tunneling mechanisms)
- RSVP and LDP based tunnels
SLA Requirements

> Latency, Delay Variation, and Link Loss Constraints
> Bandwidth Constraints
> Link Inclusion/Exclusion Constraints
  ▶ Node Inclusion/Exclusion Constraints
  ▶ Domain Inclusion/Exclusion Constraints
  ▶ Diverse Paths
  ▶ Constraint applicability to a subset of domains
> Service function chaining
Mergers and migrations
Requirements

> Interoperate with BGP-LU
  ➢ Option A and Option B Usecases
  ➢ Inter-Domain Intent Translation
> Native Support for Best Effort Paths
> Interoperate with Other tunneling Mechanisms
Scalability

- Support upto 1 million nodes in the network
- Access nodes with low RIB/FIB scale
- Scalable response to network events
- Minimize service routes on border nodes
- Automatic filtering of routes on access nodes
- Non-MPLS solutions should support summarization
- Ability to reduce FIB scale on border node
Other Requirements

- Availability
- Operations and automation
- Service mapping (Traffic steering) Requirements
- Interaction with other approaches
- Multicast Requirements
Next steps

- Request review and comments
- On-going discussions with Cisco on merging
  - draft-hegde-spring-mpls-seamless-sr-05
  - draft-dskc-bess-bgp-car-problem-statement-01
Thank you