SEAMLESS SR

draft-hegde-spring-mpls-seamless-sr

IETF 110

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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 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.i etf-idr-segment-routing-te-policy] (both SR-MPLS and SRv6)
- Flex-algo [I-D.i etf-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 up to 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 nodes
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