

SEAMLESS SR

draft-hegde-spring-mpls-seamless-sr

IETF 110

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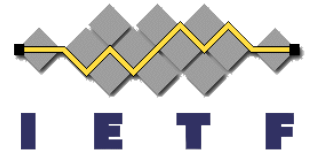
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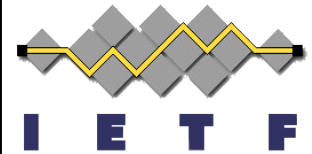
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Agenda

- 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 (same border node)

> Single AS, multiple IGP, no common border

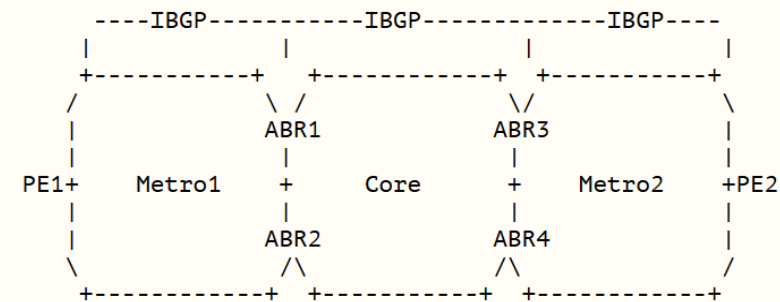
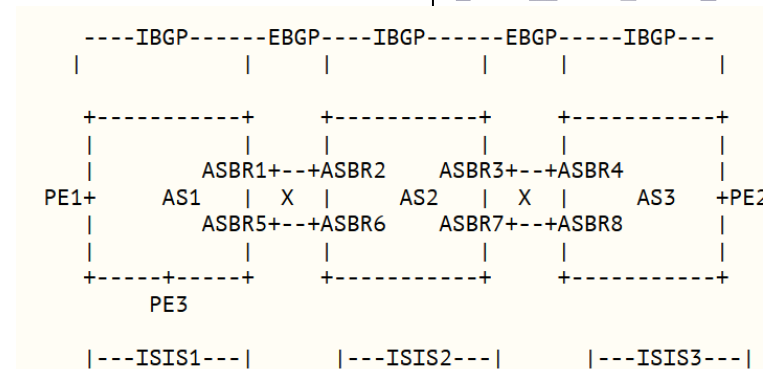
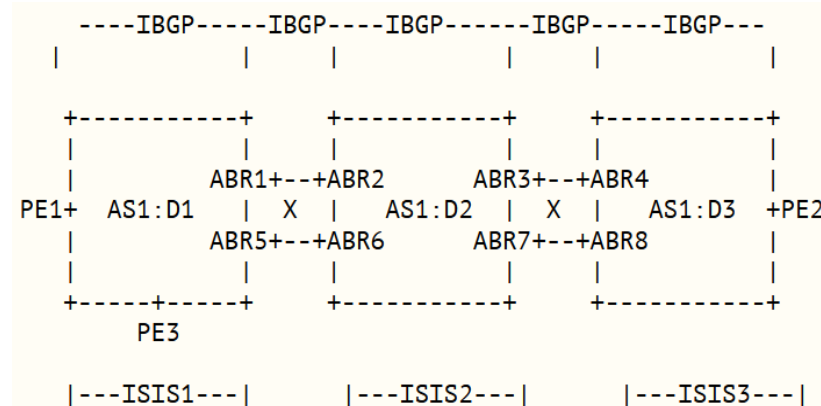
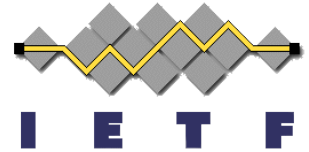


Figure 8: Single AS with Multiple IGP domains

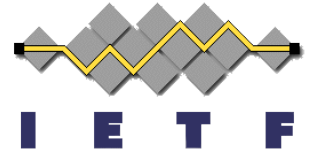




Tunneling Requirements

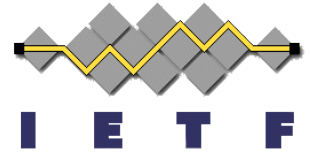
- SR-MPLS tunnels with IPv4 underlay
- SR-MPLS tunnels with IPv6 underlay
- SR-MPLS tunnels with dual stack underlay
- SRv6 tunneling end-to-end
- Segment routing TE tunnels and color-only policies as described in [I-D.ietf-idr-segment-routing-te-policy] (both SR-MPLS and SRv6)
- Flex-algo [I-D.ietf-lsr-flex-algo]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

SLA Requirements

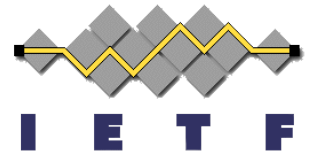


- > Latency, Delay Variation, and Link Loss Constraints
- > Bandwidth Constraints
- > Link Inclusion/Exclusion Constraints
- Node Inclusion/Exclusion Constraints
- Domain Inclusion/Exclusion Constraints
- Diverse Paths
- Constraint applicability to a subset of domains
- > Service function chaining

Mergers and migrations Requirements

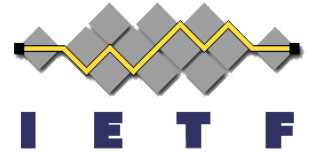


- > Interoperate with BGP-LU
- Option A and Option B Usecases
- Inter-Domain Intent Translation
- > Native Support for Best Effort Paths
- > Interoperate with Other tunneling Mechanisms



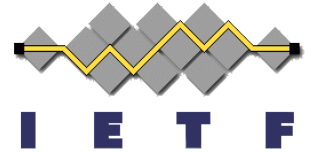
Scalability

- 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



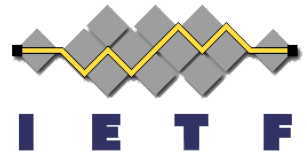
Other Requirements

- 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