SR-MPLS-TP Inter-domain use cases

draft-hu-mpls-sr-inter-domain-use-cases-01.txt

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SR-MPLS-TP

• Transport Profile in SR-MPLS (SR-MPLS-TP)
  ✓ The SR bidirectional path MUST be established in MPLS-TP networks.
    ✓ The Path Segment is defined to support SR bidirectional path correlation for transport network. (defined in [ID-ietf-spring-mpls-path-segment])
  ✓ This document discusses the inter-domain scenarios in SR-MPLS-TP networks.
    ✓ The SR bidirectional end-to-end paths across multiple domains.
    ✓ Path Segment is used to indicate the inter-domain path or the end-to-end path.
SR-MPLS-TP Inter-domain

- SR-MPLS-TP Inter-domain
  - Stitching inter-domain model
    - Domains are isolated and the stitching SR node will push the list of SIDs for the new sub-tunnel
      - Border Node Inter-domain Scenario
      - Border Link Inter-domain Scenario
  - Nesting inter-domain model
    - Global segments listed at the ingress SR node and an end-to-end path SID uniquely across all the domains.

- SR-MPLS-TP Inter-working with MPLS-TP
  - The end-to-end VPN service can be achieved by inter-working between the SR and MPLS-TP networks with path segment.
SR-MPLS-TP Stitching inter-domain

✓ i-Path /i-PSID: inter-domain Path Segment/SID

- S-Controller/H-PCE
- D-Controller/PCE-1
- D-Controller/PCE-2
- D-Controller/PCE-3

SR Domain 1:
- i-Path(A->X)
- A
- X
- Y
- Z

SR Domain 2:
- i-Path(X->Y)
- X
- Y

SR Domain 3:
- i-Path(Y->Z)
- Y
- Z

Forwarding path:
- A->X SR-TE
- i-Path(A->X)
- Payload

Reverse path:
- Same Procedure
SR-MPLS-TP Nesting Inter-domain

- **BSID**: Binding SID
- **e-Path/e-PSID**: End-to-end Path
- **SID/Segment**
- **s-Path/PSID**: Sub-Path SID/Segment

Forwarding path:
- A->X SR-TE
- s-Path(A->X)
- B-SID(X->Y)
- B-SID(Y->Z)
- e-Path(A->Z)
- Payload
- B-SID(X->Y)
- B-SID(Y->Z)
- X->Y SR-TE
- s-Path(X->Y)
- B-SID(Y->Z)
- Y->Z SR-TE
- s-Path(Y->Z)
- B-SID(Y->Z)
- e-Path(A->Z)
- Payload
- e-Path(A->Z)
- Payload

Reverse path: Same Procedure
SR-MPLS-TP and MPLS-TP inter-working
Next Step

• Solutions for SR-MPLS-TP inter-domain.

• Comments and discussions are very welcome!
Thank you!