Multi-Topology (MT) Segment in Segment Routing

draft-li-spring-multi-topology-segment-00

Robin Li(lizhenbin@huawei.com)

Eric Wu(eric.wu@huawei.com)

Multi-Topology in Segment Routing

☐ Multi-Topology Segment, MT-SID

- An IGP segment attached to an IGP topology

- Global within the SR/IGP domain
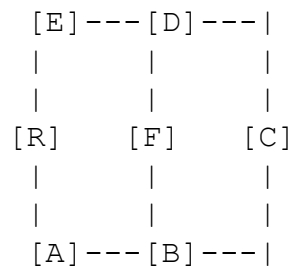
- Indicate one specified topology

☐ Propose Multi-Topology Segment for SR

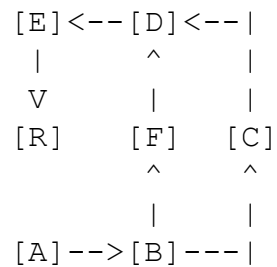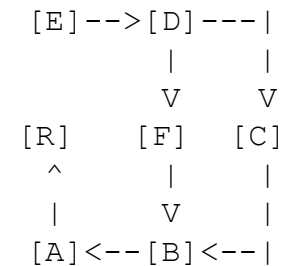☐ MT-SID is used to identify the specified topology

Use Case

☐ **MRT-FRR**

- MRT-Red & MRT-Blue used for alternates

- No extra bits for IP header to indicate topology

- Allocating MT-SID for MRT-Red & MRT-Blue

```
    [E]---[D]---|              [E]<--[D]<--|              [E]-->[D]---|
     |     |     |              |     ^     |              |     |     |
     |     |     |              V     |     |              V     V
    [R]   [F]   [C]            [R]   [F]   [C]            [R]   [F]   [C]
     |     |     |                    ^     ^              ^     |     |
     |     |     |                    |     |              |     V     |
    [A]---[B]---|              [A]-->[B]---|              [A]<--[B]<--|

  (a) a 2-connected graph    (b) Blue MRT towards R      (c) Red MRT towards R
```

Forwarding Mechanisms

❑   MRT-FRR

- Ingress router, PUSH MT-Blue-SID or MT-Red-SID, steer the packet along the alternate path.

- Transit router, CONTINUE MT-SID indicating topology FIB to look up.

- Egress router, NEXT segment is active.

Procedures of Control Plane

☐ MRT-FRR

- IGP extension for Multi-Topology Segment

- Unique within IGP domain

- RECOMMENDED allocated in centralized manner

- Assigned manually or chosen automatically. Detail is TBD.

Next step

☐ Collect feedback and comments for proposed draft.

☐ Improve this draft based on comments and plan.

- – Defining protocol extensions

- – Elaborating more about forwarding and control plane.

- – ?

☐ Looking for interested people...