

Path Segment in MPLS Based Segment Routing Network

draft-cheng-spring-path-segment-03

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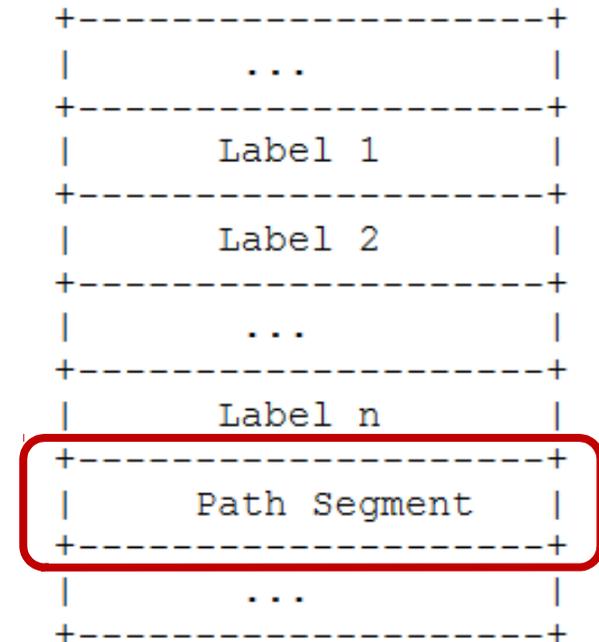
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Motivation

- For SR-MPLS, an SR path is represented as a stack of labels
 - SR path states only maintained at the ingress node
 - When a packet reaches the egress node, some or all of the labels have been popped off, the egress node can not determine from which SR path the packet is received.
- Path identification at egress is a pre-requisite of:
 - Performance measurement
 - Bidirectional path correlation
 - ...
- Path Segment is introduced for SR path identification.

Path Segment Review

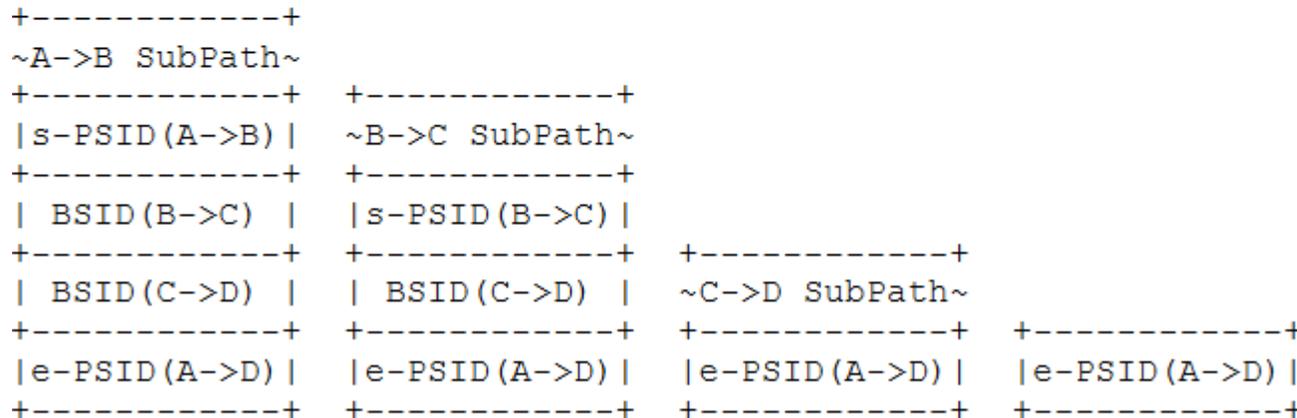
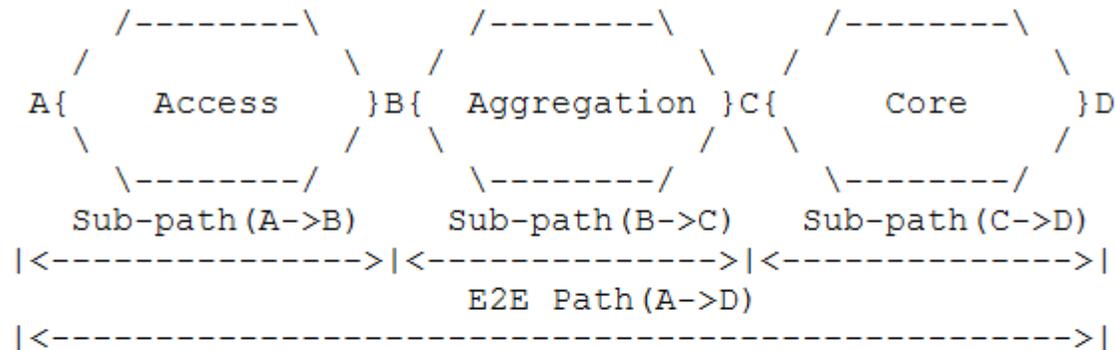
- A Path Segment (PSID) is assigned by the egress node of an SR path, it uniquely identifies the SR path at the egress node.
 - Could be from either SRLB or SRGB
- Inserted at the ingress and immediately follows the last label of the SR path
 - The SR path can be either a sub-path or an end-to-end path.
- The Path Segment **MUST** be popped off at the egress node of the SR path
 - Means PHP **MUST NOT** be enabled.



Updates Since Version 00

- New co-author (Rakesh Gandhi)
- Remove the “two label” option for SR path identification
 - According to the mailing list discussions;
 - Only keep the “one label” solution;
- Add the support to “Nesting of Path Segment”
 - According to Sasha’s suggestion
 - By using BSID with Path Segment (PSID), it can:
 - Reduce the depth of the label stack
 - Support both sub-path and end-to-end monitoring
 - Detail in next slides
- Document structure adjustment, editorial changes

Nesting of Path Segments



- BSID: Binding SID
- e-PSID: end-to-end Path SID
- s-PSID : sub-Path SID

Next Steps

- Solicit more reviews/comments, refine the draft accordingly.
- The draft is the foundation of several ongoing work.
 - Path Segment based PM
 - Bidirectional SR policy
 - PCEP extension for Path Segment
 - SR-policy extension for Path Segment
- Paralell work
 - SRv6 Path Segment
- Huawei is implementing Path Segment based PM and Bidirectional SR path.
 - According to some SPs requirements
- Request for WG adoption.

Thanks