Path Segment in MPLS Based Segment Routing Network
draft-cheng-spring-path-segment-segment-03

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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
• Parallel 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