BGP Extension for SR-MPLS Entropy Label Position

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Background and Motivation

• Entropy labels (ELs) [RFC6790] are used in the MPLS data plane to provide entropy for load-balancing.


• Multiple criteria may be considered when placing < ELI, EL> pairs:
  − ERLD: Entropy Readable Label Depth.
  − MSD: Maximum SID Depth.
  − Segment Type, Maximizing Number of LSRs That Will Load-Balance, ... ...

• An external controller can be used to program the label stack.
This document proposes extensions for BGP to indicate the entropy label position in the segment list when distribute SR Policy candidate paths using BGP.
BGP Extensions

E-Flag in Segment Sub-TLV

- E-Flag: one bit. It indicates the presence of < ELI, EL> label pairs which are inserted after this segment. Applicable to Segment Types A, C, D, E, F, G and H.

SR Policy SAFI NLRI: <Distinguisher, Policy-Color, Endpoint>

Attributes:
  Tunnel Encaps Attribute (23)
      Tunnel Type: SR Policy
            ...
      Segment List
        Weight
        SegmentA
        SegmentB(E-Flag)
        SegmentC
        SegmentD(E-Flag)
        SegmentE
        ...
            ...

- The value of EL is supplemented by the ingress node according to load-balancing function of the appropriate keys extracted from a given packet.
Next Steps

• Your feedback and comments are welcome and much appreciated
Thank You!