Synonymous Flow Labels

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draft-ietf-mpls-flow-ident

- This has finished WGLC.
- Loa picked up some minor points when writing up the shepherds report (a stale reference and a minor IANA point).
- They have been addressed and at the time of writing I am waiting for the posting window to open.

draft-bryant-mpls-sfl-framework

- Went through MPLS QA and an interesting problem was raised. More of this later.

- Just completed IPR poll.

- Just entered WG adoption poll.

draft-ietf-mpls-rfc6374-sfl

- Has been adopted as a WG draft.
- Section 7 (Multiple Packet Delay Characteristics) has a number of methods.
  - Time Buckets
  - Standard Deviation
  - Per Packet Delay
  - Average Delay
  - Also Section 8 Sampled Measurement
- We really need feedback on which of these to pursue to completion.
- Of course feedback on anything else would be welcome.

draft-bryant-mpls-sfl-control

- This still only describes a basic standalone control plane
- It needs integrating into the main MPLS control planes:
  - LDP
  - RSVP-TE
  - BGP
  - ISIS & OSPF for Segment Routing
- We also need components to control it via SDN
- Anyone interested in helping with text would be welcome.

ECMP

- Issue arose in review of draft-bryant-mpls-sfl-framework.

- This brought a limitation of RFC6790 (entropy labels), in that the inclusion of an EL still allows an LSR include any other label in the entropy calculation although it does prohibit the inclusion of SPLs.

- This is a problem because on any path subject to ECMP the packet path may change with the inclusion or exclusion of an SFL.

The Fix in the Text

The operator can elect to use [RFC6790] Entropy Labels in a network that fully supports this type of ECMP. If this approach is adopted, the intervening MPLS network MUST NOT load balance on any packet field other than the entropy label. Note that this is stricter than the text in Section 4.2 of [RFC6790]. In networks in which the ECMP decision is independent of both the value of

any other label in the label stack, and the MPLS payload, the path of the flow with the SFL will be congruent with the path without the SFL.

The Protocol Fix?

- We need LSRs to signal whether LSRs LB on just the ELI or on other factors in the packet.
- We need to consider whether we need to strengthen the text in RFC6790 since there are cases where we would like the EL to be the sole flow identifier for ECMP purposes

Questions?