Export of MPLS-SR Label Type Information in IPFIX

Enabling insights in MPLS-SR forwarding plane by adding Segment Routing dimensions

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MPLS-SR @ IPFIX
Vendor Status

• MPLS-SR uses the existing MPLS data plane.

• Therefore, looking how IPFIX metrics are exposed at a current MPLS-SR vendor implementation we see **not much of a difference to classical MPLS**.

• Looking more deeply, we notice "not much" is pretty much what is missing.

• mplsTopLabelType is referencing LDP even though there isn't any LDP anymore. -> Funny
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IANA code points

- Looking at IANA makes it clear, there is NO mplsTopLabelType code point for BGP, IS-IS, OSPFv2 and OSPFv3 Segment Routing.
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IANA Reference vs. Requester

- Two IPFIX doctor reviews, revealed that requester column is hidden at IANA and content in reference column should be in requester column and vice versa.
- Needs to be fixed before registry can be updated with new code points. Awaiting feedback from IANA.
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Draft Status

• Feedback collected from SPRING, MPLS, LSR and OPSAWG lists.
• Called for adoption at IETF 108 OPSAWG. Piano feedback received with comment to review SrSidType and fix existing IE46 registry.
• SrSidType removed from -05 version (backup slides) in favor of draft-ietf-spring-sr-yang-23#section-8.3
• Two IE-DOCTOR reviews received and IE46 registry correction submitted to IANA and currently pending.

--> Call for adoption at OPSAWG at IETF 110 again

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Backup
**MPLS-SR @ IPFIX**

RFC 8402, SID's, SID's

- Segment Routing is all about SID's.
- An Adjacency-SID can be used by TI-LFA or uLoop avoidance to use a different path to the Prefix SID than what the routing protocol calculated as best path.
- Where are the SID's in IPFIX?  
  -> Nowhere!
MPLS-SR @ IPFIX
draft-tgraf-ipfix-mpls-sr-label-type

• Segment Routing adds the source routing paradigm to MPLS and enhances IGP routing protocol to carry label information.

• Let's bring visibility into how Segment Routing applications change the MPLS forwarding plane.

• "Show me all MPLS-SR controlled traffic where Adj-SID's were used, group by Label Stack, and show for each through which nodes and interfaces it was forwarded."

• Fill the missing gaps at IPFIX:
  • Update mplsTopLabelType
  • Introduce SrSidType