Export of MPLS-SR Label Type Information in IPFIX

Enabling insights in MPLS-SR forwarding plane by adding Segment Routing dimensions
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
MPLS-SR @ IPFIX
IANA Status

• Looking at IANA makes it clear, there is **NO** mplsTopLabelType code point for IS-IS, OSPFv2 and OSPFv3 Segment Routing.
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
Feedback collected from SPRING and OPSAWG lists, submitted to IANA and received review from IE-DOCTOR...

-> Call for adoption at OPSWAG