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
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!
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