

LSP Ping/Traceroute for Enabled In-situ OAM Capabilities

draft-xiao-mpls-lsp-ping-ioam-conf-state-01

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Recap of this draft

- This draft defines LSP Ping extensions to achieve IOAM Capabilities Discovery in MPLS Networks
 - A companion document of RFC 9359
 - MPLS Node IOAM Information Query mechanism
 - For this Query mechanism, six IOAM Capabilities sub-TLVs are defined in this draft:
 - IOAM Pre-allocated Tracing Capabilities sub-TLV
 - IOAM Incremental Tracing Capabilities sub-TLV
 - IOAM Proof of Transit Capabilities sub-TLV
 - IOAM Edge-to-Edge Capabilities sub-TLV
 - IOAM DEX Capabilities sub-TLV
 - IOAM End-of-Domain sub-TLV

Why not IGP?

- This draft was presented at IETF 115, and there was a significant question (as the title of this slide) raised by Tarek Saad
 - Basically IGP is an alternative for IOAM Capabilities Discovery, however it's not employed by RFC9359
 - RFC9359 mentions IGP solution too, it provides some reasons why IGP solution is not preferred (pls see the next page for details)

Why not IGP? (Cont.1)

- In section 1 of RFC9359 it says:
 - “When IGP is used in this scenario, **the IGP and IOAM-Domains don't always have the same coverage**. For example, when the IOAM encapsulating node or the IOAM decapsulating node is a host, the availability can be an issue. Furthermore, it might be too challenging to reflect enabled IOAM capabilities at the IOAM transit and IOAM decapsulating node if these are controlled by a local policy depending on the identity of the IOAM encapsulating node.”
- Except for the above reasons, the IGP solution is:
 - Requiring Multi-Instance IGP support of the IOAM devices (pls refer to draft-ietf-lsr-ospf-transport-instance)

Why not IGP? (Cont.2)

- As demonstrated in draft-ietf-mpls-spring-inter-domain-oam:

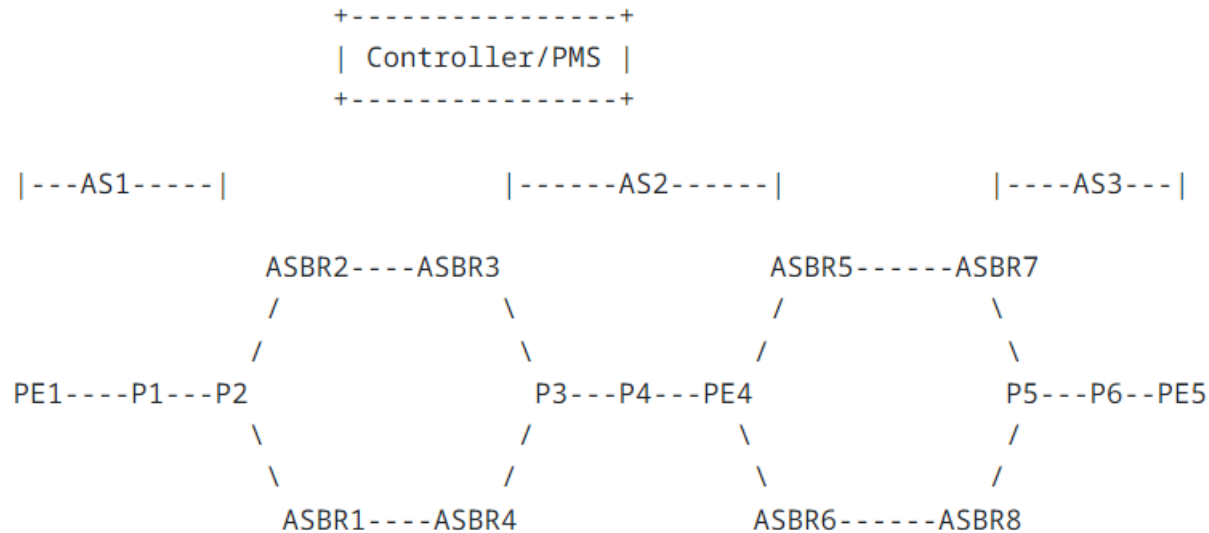


Figure 1: Inter-AS Segment Routing topology

- When an LSP crosses over multiple ASes
 - the IGP and IOAM-Domains don't always have the same coverage

Why not IGP? (Cont.3)

- RFC5654 (Requirements of an MPLS Transport Profile) says:

“2.3. Data Plane Requirements

36 It MUST be possible to operate and configure the MPLS-TP data plane without any IP forwarding capability in the MPLS-TP data plane. That is, the data plane only operates on the MPLS label.”

“2.4. Control Plane Requirements

This section defines the requirements that apply to an MPLS-TP control plane. Note that it MUST be possible to operate an MPLS-TP network without using a control plane.”

- When the IOAM is deployed in an MPLS-TP network
 - the IGP is possible to be unavailable

Next steps

- Ask for more reviews and comments
- Revise this draft to improve it
- Request for WG adoption

Thank you!