Scope:
Applying SR to implement an MPLS traceroute option lowering the total number of end-to-end LSP validations as compared to commodity MPLS traceroute.

Framework and properties:
• High number of ECMP paths may reduce the number of ,,forwarding addresses“ to execute a particular forwarding path in the midst of en end-to-end path being traced.
• An end point might need to add MPLS traceroutes with a high number of IP destination addresses to validate all forwardings (of fail to validate them).
• SR allows to forward an MPLS OAM packets with any IP destination address to any node along the path. Use SR to reduce the number of MPLS OAM traceroutes if a large number of ECMP paths are present.
• Doesn’t require new protocol elements - requires local implementation adaption however.
• Vendors: if you’ve implemented that independently, please speak up.
• Running code for Deutsche Telekom’s (LDP) MPLS OAM code. Operators like it.
IETF 109, Spring WG  draft-geib-spring-oam-opt

ECMP: 4096 = 2*4*(8*12+8*4)*4 path combinations between RS and RD.

RFC 8029 (and RFC8287 ?) MPLS traceroute operation starting at RS:
Top segment is RD node-ID.

Routers R2xx, architecture mirrors the above

32 multipath IP addresses per MPLS traceroute
IETF 109, Spring WG  [draft-geib-spring-oam-opt](https://datatracker.ietf.org/doc/html/draft-geib-spring-oam-opt)

**ECMP:** 4096 path combinations between RS and RD.

Using SR topology information in router RS, all IP addresses may reach all nodes: E.g., Top Label at RS Node-ID 110, stack below commodity MPLS OAM packet to RD

Routers R2xx, architecture mirrors the above

32 multipath IP addresses per MPLS traceroute