Deprecating the Use of Router Alert in LSP Ping

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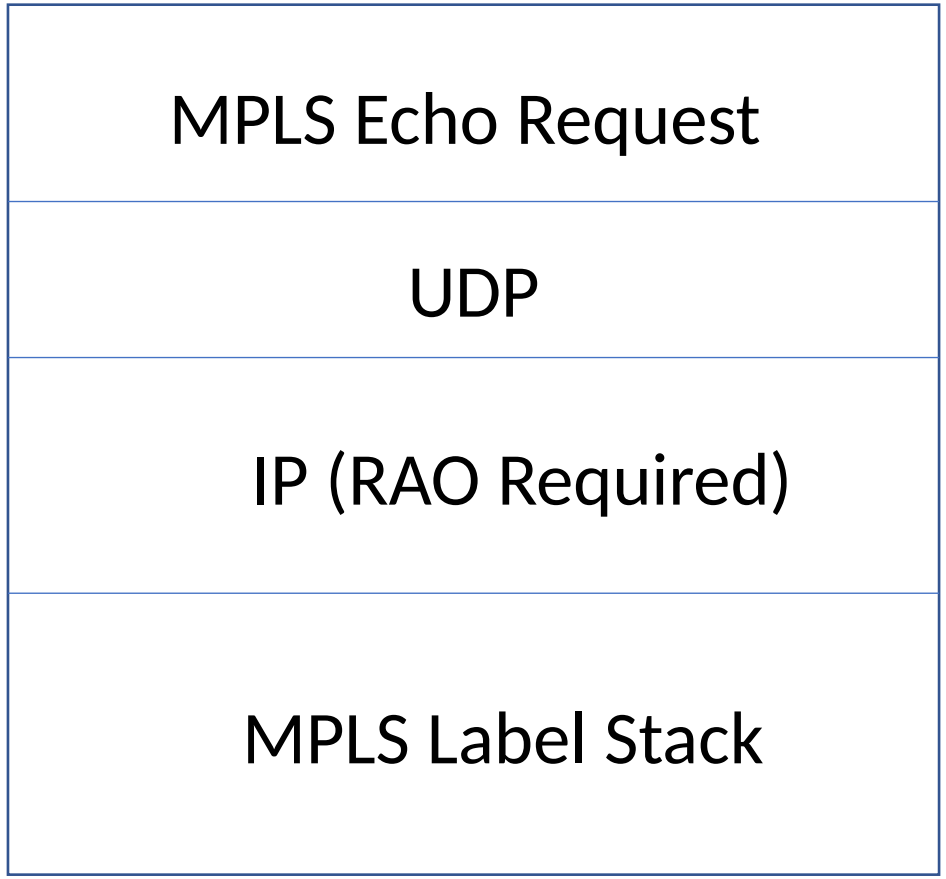
Kireeti Kompella

Ron Bonica

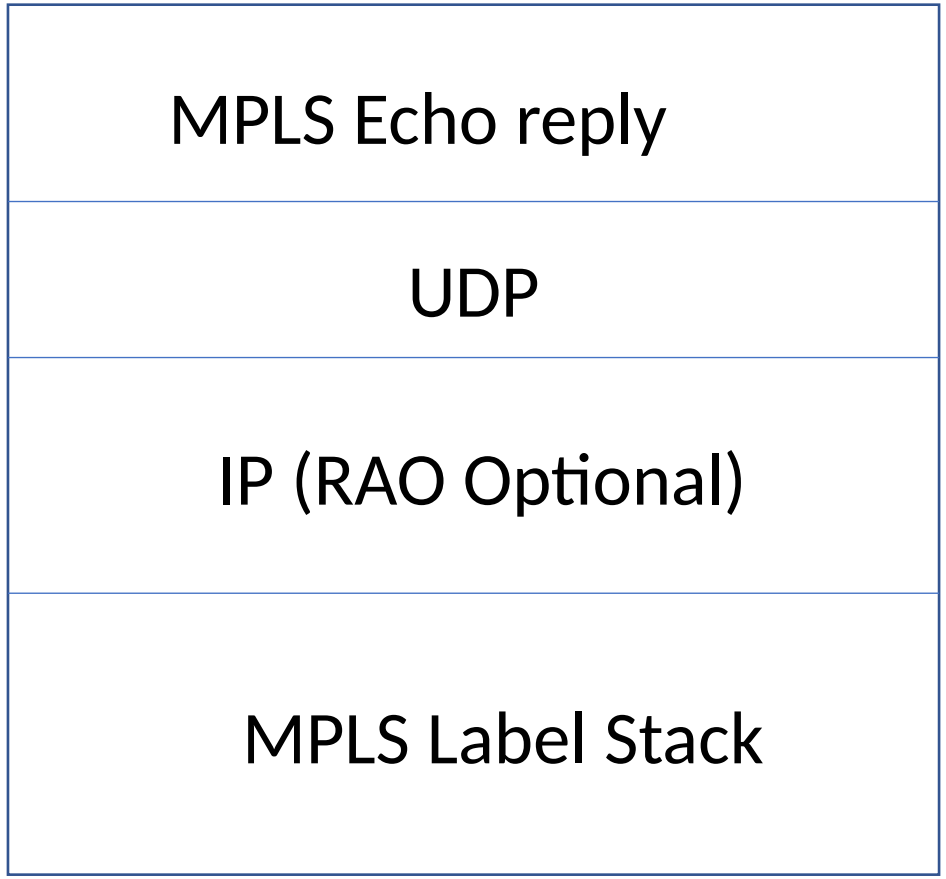
Proposal

- Remove the IPv4 and IPv6 Router Alert Options (RAO) from LSP Ping
  - Reclassify RFC 7506 to Historic
  - Update RFC 8029
- Rationale
  - RAO Security Considerations (RFC 6398)
  - Give additional degrees of freedom to the 6man effort to rethink the IPv6 Hop-by-hop Options header (draft-ietf-6man-hbh-processing)
  - Motivation for including the RAO in LSP Ping is questionable

LSP Ping Echo Request



LSP Ping Echo Reply



Motivation for RAO in Echo Request

- The Echo Request message must not be forwarded beyond the egress LSR
- Mandatory protection mechanisms
  - Destination address must be chosen from 127/8 (IPv4) or 0:0:0:0:0:FFFF:7F00:0/104 (IPv6)
  - IPv4 TTL or IPv6 hop count must be set to 1
  - RAO
- Two levels of protection are sufficient to prevent forwarding beyond egress
- This document recommends that the RAO be omitted

Motivation for RAO in Echo Reply

- LSP Ping has the following reply modes
  1. Do not reply
  2. Reply via an IPv4/IPv6 UDP packet
  3. Reply via an IPv4/IPv6 UDP packet with Router Alert
  4. Reply via application-level control channel
- Motivation for third reasons third type is questionable
  - According to RFC 8029, "If the normal IP return path is deemed unreliable, one may use 3 (Reply via an IPv4/IPv6 UDP packet with Router Alert).
  - Huh?

Next Steps

- WG Review
- Call for adoption