

Path Tracing in SRv6 networks

draft-filsfils-spring-path-tracing-05

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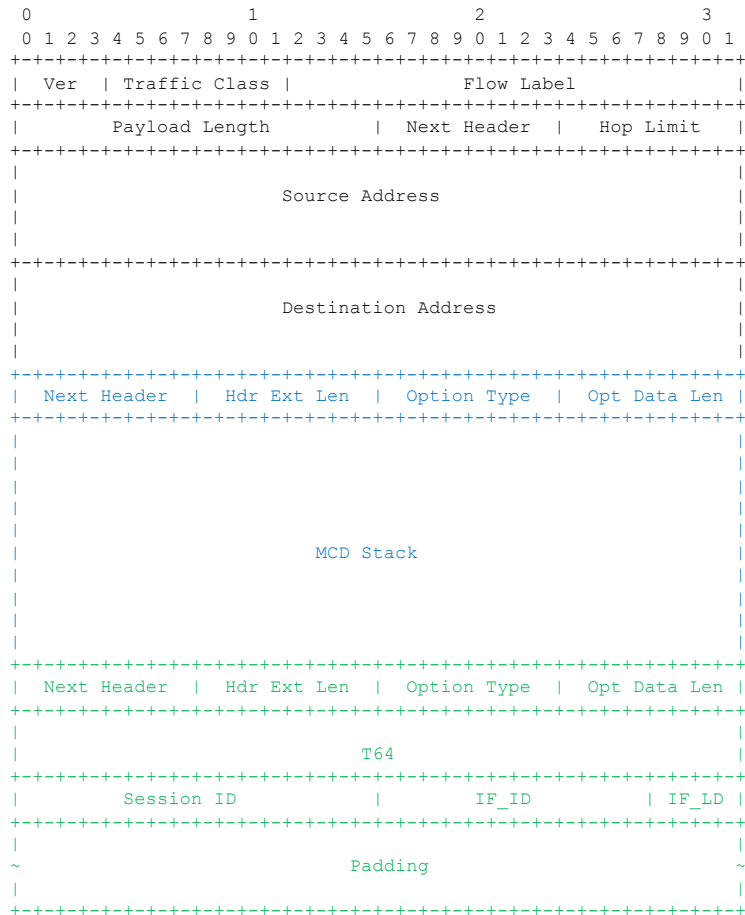
On behalf of the co-authors

Path Tracing (PT)

- Provides a record of the packet path as a sequence of interface ids.
- In addition, it provides a record of end-to-end delay, per-hop delay, and load on each egress interface along the packet delivery path.
- Designed for linerate hardware implementation in the base pipeline:
 - Minimum MTU overhead. Midpoint Compressed Data (MCD) of 3Bytes to record interface ID, truncated TS and interface Load.
 - Headers Optimized for linerate HW implementation. Minimize variability (no options; same editing by all nodes).
- Implemented at line rate:
 - 5 different ASICs from 3 different vendors
 - Plus, several open source stacks/software

PT Headers

- HbH-PT: IPv6 Option for Path Tracing to be carried in the IPv6 Hop-by-Hop Header.
 - Option Type: TBA1-1
 - Opt Data Len: the length of the MCD stack in bytes.
 - MCD Stack: metadata scratchpad where PT Midpoints record their MCDs
 - Each 3-byte MCD contains 12-bit interface ID, 8-bit timestamp and 4-bit interface load
- DOH-PT: IPv6 Option for Path Tracing to be carried in the IPv6 Destination Options Header.
 - Option Type: TBA1-2
 - Opt Data Len: the length of the DOH-PT in bytes (12).
 - T64: 64-bit Timestamp
 - Session ID: Probe Session identifier
 - IF_ID: 12-bit Interface ID
 - IF_LD: 4-bit Interface Load



Next steps

- Review and feedback
- The draft is currently in the SPRING WG
 - Suggestions/feedback
- Early allocation
 - HbH-PT: TBA1-1
 - DOH-PT: TBA1-2

Thank you