

STAMP over MPLS LSP

draft-mirsky-mpls-stamp

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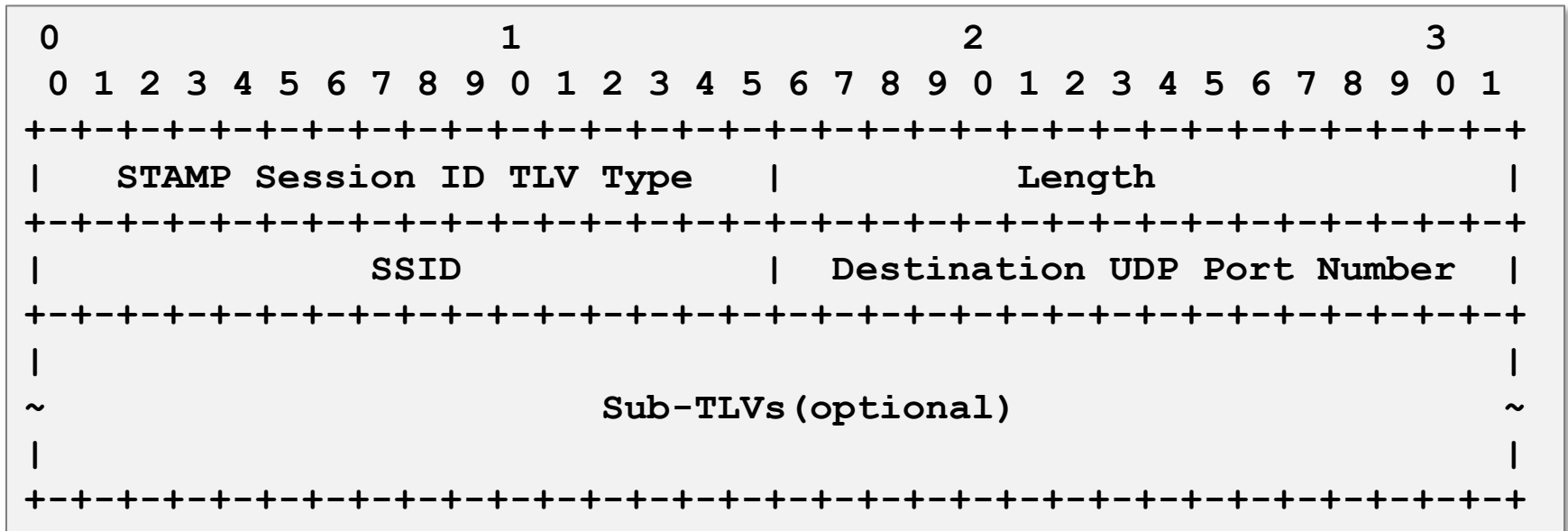
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Simple Two-way Active Measurement Protocol

- RFC 8762 STAMP and RFC 8972 STAMP Extensions defined the baseline protocol and several extensions (e.g., Extra Padding, Direct Loss Measurement, Timestamp Source Reporting, Follow-up Telemetry).
- The protocol supports measurements of packet delay, packet loss, and detection of packet duplication and re-ordering.
- Actors – Session-Sender and Session-Reflector.
- Mechanism – echo request, echo reply.

Proposed Mechanism for Bootstrapping a STAMP Test Session over MPLS

- Use IP/UDP encapsulation:
 - Destination IP address:
 - From 127/8 range for IPv4
 - From Dummy IPv6 range (see draft-ietf-mpls-p2mp-bfd)
 - STAMP Session ID TLV Type allocated from IANA's Multiprotocol Label Switching Architecture (MPLS) Label Switched Paths (LSPs) Ping Parameters – TLVs
 - Destination UDP port number – 862 is recommended; a number from the Dynamic port numbers range - optional
 - TTL/Hop count – 255
- Use LSP Ping to bootstrap STAMP test session:



Mandatory Bootstrapping Parameters

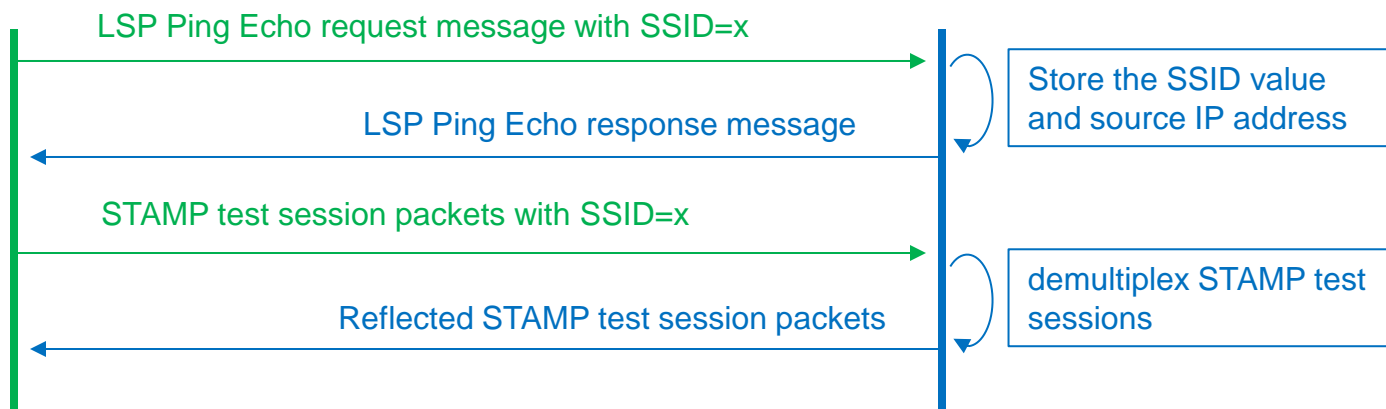
- SSID field is a two-octet field that identifies the STAMP test session at the STAMP Session-Sender.
- UDP Destination Port Number is a two-octet field. The field indicates the value of the UDP destination port in test packet transmitted by the Session-Sender for the test session with SSID.
- The Session-Sender MAY set the value of the Destination UDP Port Number field to 862 that is assigned by IANA as TWAMP-Test Receiver Port. If the value of the field is not equal to 862 then it MUST be one from the range of Dynamic ports, i.e., from 49152 to 65535. Any other value of the UDP Destination Port Number field is invalid and the Session-Reflector MUST send an Echo Reply message with the received STAMP Session Identifier TLV and set the Return Code field to "UDP Destination Port Unavailable".

Optional Sub-TLVs

- The optional Sub-TLVs field MAY contain any non-multicast Target FEC Stack sub-TLV for TLV Types 1, 16, and 21 of the MPLS LSP Ping Parameters registry.
- The Non-FEC Path TLV, defined in [I-D.ietf-spring-bfd], MAY be used to specify the path for a STAMP reflected test packet in the SR-MPLS environment.
- None, one or more sub-TLVs that control the reflected STAMP packet path MAY be included in the Sub-TLVs field. If no sub-TLVs are found in the STAMP Session Identifier TLV, the STAMP Session-Reflector MUST revert to transmitting the STAMP reflected packets over the IP network.
- If the STAMP Session-Reflector cannot find the path specified in the Sub-TLVs field, it MUST send Echo Reply with the received STAMP Session Identifier TLV and set the Return Code to "The specified Reflected Packet Path was not found".

STAMP Session Establishment

- Session-Sender sends an LSP Ping Echo request message with SSID value in STAMP Session ID TLV.
- Session-Reflector receives the LSP Ping Echo request message, and if the validation succeeds:
 - Send an LSP Ping Echo response message.
 - Store the SSID value and source IP address in the Echo request packet.
- Session-Sender sends STAMP test session packets with the same SSID as that in the LSP Ping Echo request message.
- Session-Reflector receives the STAMP test session packets and demultiplexes them by the source IP address and SSID in the Echo request message.



In Conclusion

- **The authors believe the document is ready for WG adoption**
- This work is complementary to draft-ietf-mpls-stamp-pw and draft-ietf-spring-stamp-srpm
- Welcome comments and questions

Thank you!