

Simple Two-Way Active Measurement Protocol Extensions for Reflecting STAMP Packet Headers

draft-gandhi-ippm-stamp-ext-hdr-00

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Agenda

- Requirements and Scope
- Summary of Procedure
- Next Steps

Requirements, Goals and Scope

Requirements:

- Reflect STAMP Packet Headers
 - Hop-by-hop measurement
 - Control STAMP headers on return path

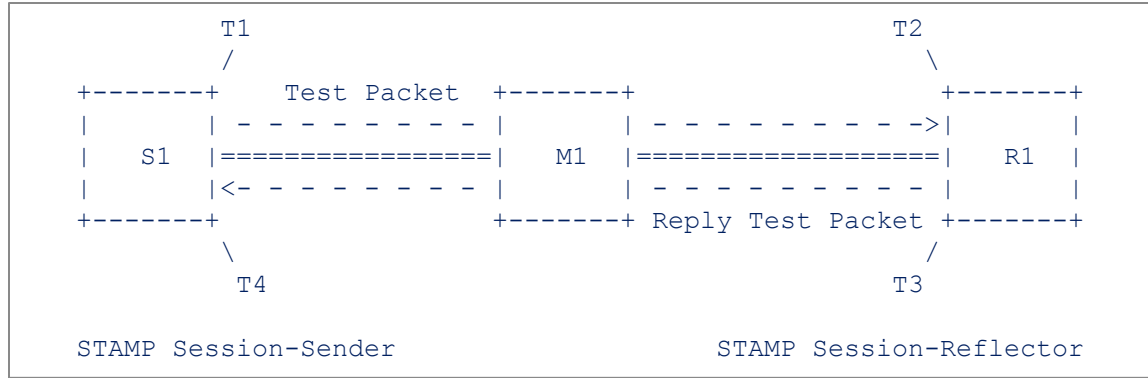
Goals:

- Leverage existing implementation on midpoint nodes
- Avoid IPv6 and MPLS protocol extensions

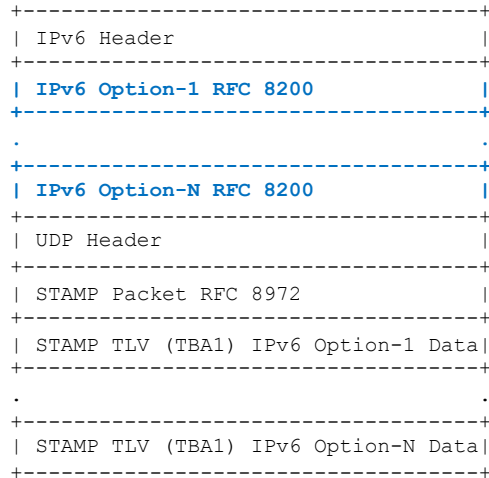
Scope:

- STAMP [RFC 8762] and STAMP Extensions [RFC 8972]
- IPv6 Options [RFC 8200]
- MPLS Network Action Sub-Stack [draft-ietf-mpls-mna-hdr]

STAMP Example for IPv6 Data plane



In-situ OAM IPv6 Options
[RFC 9486]

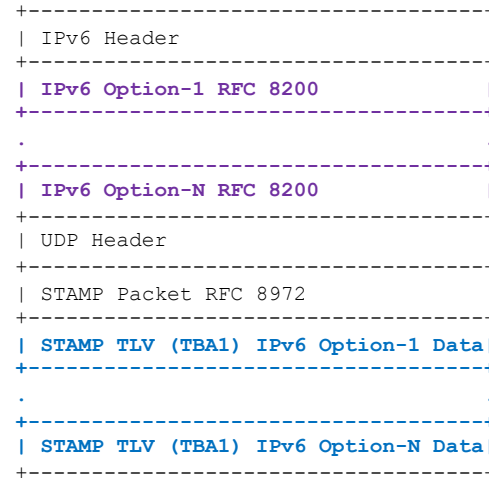


Session-Sender Test Packet

1 Transmit



Pre-allocated Empty TLVs in the same order



Session-Reflector Test Packet

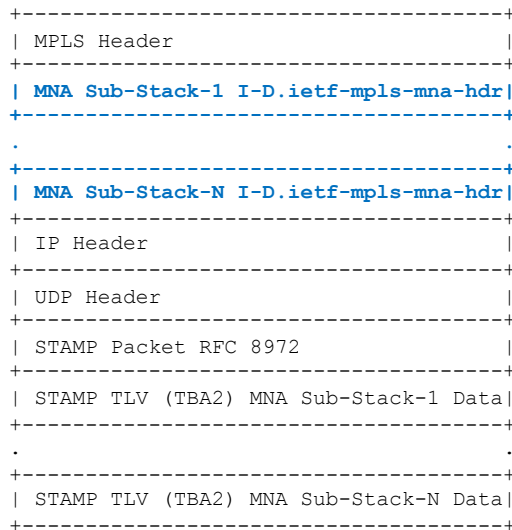
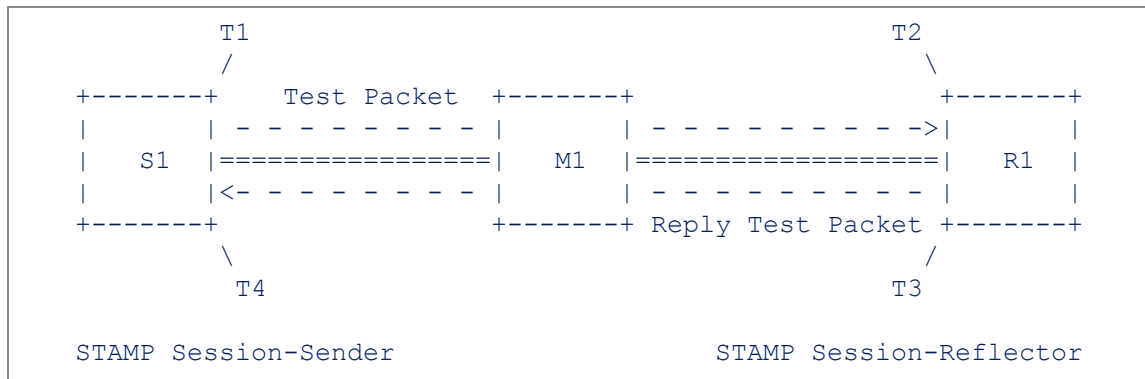
4 Reflect



3 New Headers (Optional)

2. Copy Options in STAMP TLVs as Data

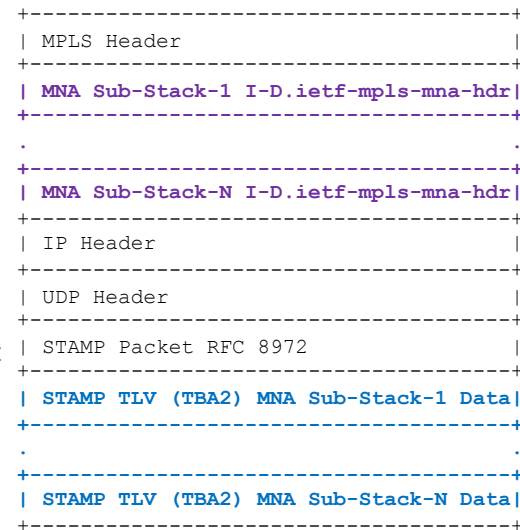
STAMP Example for MPLS Data plane



Session-Sender Test Packet

1 Transmit

Pre-allocated Empty TLVs in the same order



Session-Reflector Test Packet

4 Reflect

3 New Headers (Optional)

2. Copy Sub-Stack in STAMP TLVs as Data

One-Way Measurement with STAMP

1. Measurement only required in the Session-Sender to the Session-Reflector direction
2. New Sub-TLV “**Extension Header Control**” (Type TBA3) is defined for STAMP TLV “Reflected Test Packet Control TLV” [draft-mirsky-ippm-asymmetrical-pkts]
 - a) When Session-Sender Test Packet is received with “Extension Header Control” Sub-TLV, Session-Reflector will not add (IPv6/MNA) Extension Headers in the Session-Reflector Test Packet
 - b) Session-Reflector will always copy the (IPv6/MNA) Extension Headers from the Session-Sender Test packet into the Session-Reflector Test packet STAMP TLVs (Type TBA1 and TBA2)

IANA Requests for New STAMP TLV Types

Value	Description	Reference
TBA1	Reflected IPv6 Option Data	This document
TBA2	Reflected MNA Sub-Stack Data	This document

STAMP TLV Types

Value	Description	Reference
TBA3	Extension Header Control	This document

Sub-TLV Type for Reflected Test Packet Control TLV

STAMP Documents in other WGs

1. Performance Measurement Using STAMP for Segment Routing Networks
 - <https://datatracker.ietf.org/doc/draft-ietf-spring-stamp-srpm/>
2. Encapsulation of STAMP for Pseudowires in MPLS Networks
 - <https://datatracker.ietf.org/doc/draft-gandhi-mpls-stamp-pw/>



Welcome your comments and suggestions

Next Steps

- Thank you, Greg and Xiao Min for your review comments
- Welcome further comments and suggestions
- Request WG adoption

Thank you

One STAMP TLV Carry all Extension Headers

- Why not combine the multiple IPv6 Option Data STAMP TLVs into one IPv6 Data STAMP TLV?
- In this way, the STAMP Session-Reflector doesn't need to parse the received IPv6 Extension Headers, it just mirrors the received STAMP headers and leaves all the parsing work to the STAMP Session-Sender
- Reflector may not need to copy all Extension Headers in STAMP TLVs (e.g. Direct Export Option). The Sender may not add STAMP TLV for it.