STAMP Extensions for Reflecting STAMP Packet IP Headers

draft-ietf-ippm-stamp-ext-hdr-05

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123rd IETF, IPPM WG

Agenda

- Requirements
- Updates
- Next Steps

Requirements, Goals, and Scope

Requirements:

- STAMP Extensions to Reflect packet IP headers:
  - ✓ Hop-by-hop and edge-to-edge measurements
  - ✓ Two-way and one-way measurements

Goals:

- Leverage existing implementation of extension headers on midpoint nodes
  - ✓ Midpoints nodes are agnostics to STAMP protocol

Scope:

- STAMP [RFC8762] and STAMP Extensions [RFC8972]
- IPv6 Data plane: IPv6 Extension Headers [RFC8200]

Updates

- Split *draft-ietf-ippm-stamp-ext-hdr* into two drafts:
    1. IPv4/IPv6 Data plane - draft-ietf-ippm-stamp-ext-hdr
    2. MPLS Data plane - draft-gandhi-ippm-stamp-mpls-hdr

STAMP TLV Extension for IPv6 Data plane

```
            T1                                           T2
           /                                               \
    +-------+     Test Packet     +-------+                 +-------+
    |       | - - - - - - - - - - |       | - - - - - - - - ->|       |
    |  S1   |=====================|  M1   |===================|  R1   |
    |       |<- - - - - - - - - - |       | - - - - - - - - - |       |
    +-------+                     +-------+ Reply Test Packet +-------+
           \                                               /
            T4                                           T3

 STAMP Session-Sender                          STAMP Session-Reflector
```

```
+-----------------------------------------------+
| IPv6 Header                                   |
+-----------------------------------------------+
| IPv6 Extension Header-1 RFC 8200              |
+-----------------------------------------------+
~ ...                                           ~
+-----------------------------------------------+
| IPv6 Extension Header-N RFC 8200              |
+-----------------------------------------------+
| UDP Header                                    |
+-----------------------------------------------+
| STAMP Packet RFC 8972                         |
+-----------------------------------------------+
| Reflected IPv6 Header-1 Data STAMP TLV (TBA1) |
+-----------------------------------------------+
~ ...                                           ~
+-----------------------------------------------+
| Reflected IPv6 Header-M Data STAMP TLV (TBA1) |
+-----------------------------------------------+
            Session-Sender Test Packet
```

1. Transmit

Pre-allocated Empty TLVs in the same order

4. Reflect

```
+-----------------------------------------------+
| IPv6 Header                                   |
+-----------------------------------------------+
| IPv6 Extension Header-1 RFC 8200              |
+-----------------------------------------------+
~ ...                                           ~
+-----------------------------------------------+
| IPv6 Extension Header-L RFC 8200              |
+-----------------------------------------------+
| UDP Header                                    |
+-----------------------------------------------+
| STAMP Packet RFC 8972                         |
+-----------------------------------------------+
| Reflected IPv6 Header-1 Data STAMP TLV (TBA1) |
+-----------------------------------------------+
~ ...                                           ~
+-----------------------------------------------+
| Reflected IPv6 Header-M Data STAMP TLV (TBA1) |
+-----------------------------------------------+
          Session-Reflector Test Packet
```

3. New Ext headers (two-way measurement)

2. Copy Extension headers in STAMP TLVs

Next Steps

- Thank you, Will Hawkins for your great work on the Teaparty open-source implementation for this draft
- Welcome your review comments and suggestions
- Ready for WG LC

Thank you!