Simple TWAMP (STAMP) Extensions for Segment Routing Networks

draft-gandhi-ippm-stamp-srpm-00

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Agenda

- Requirements and Scope
- History of the Draft
- Summary of Extensions
- Next Steps

Requirements and Scope

Requirements:

- Delay and Synthetic Loss Performance Measurement
- Support stand-alone direct-mode Loss Measurement

Scope:

- STAMP [RFC 8762]
- STAMP TLVs [draft-ietf-ippm-stamp-option-tlv]

History of the Draft

- Feb 2019
  - Draft was published - *draft-gandhi-spring-twamp-srpm-00*
- Mar 2019
  - Presented *draft-gandhi-spring-twamp-srpm-00* at IETF 104 Prague in SPRING WG
- May 2019
  - Added STAMP TLV for Return Path
- July 2019
  - Presented *draft-gandhi-spring-twamp-srpm-01* at IETF 105 Montreal in IPPM WG
    - Slide 9 Titled - Applicability of STAMP
- Nov 2019
  - SPRING Chairs announced in the meeting the agreement with IPPM chairs to progress the draft in SPRING WG
  - Presented *draft-gandhi-spring-twamp-srpm-04* at IETF 106 Singapore in SPRING WG
- Mar 2020
  - Moved STAMP support to *draft-gandhi-spring-**stamp**-srpm-00*
  - Keep TWAMP Light support as informational in *draft-gandhi-spring-**twamp**-srpm-08*
- Jul 2020
  - Presented *draft-gandhi-spring-stamp-srpm-01* at IETF 108 in SPRING and IPPM WG
- October 2020
  - Split draft into *draft-gandhi-**spring**-stamp-srpm-03 and draft-gandhi-**ippm**-stamp-srpm-00*

STAMP - Session-Sender Control Code Field

In a Query: Session-Sender Control Code

0x0: Out-of-band Response Requested.
This is also the default (current) behavior.

0x1: In-band Response Requested.
Indicates that this query has been sent over a bidirectional path and the probe response is required over the same path in reverse direction.

0x2: No Response Requested.

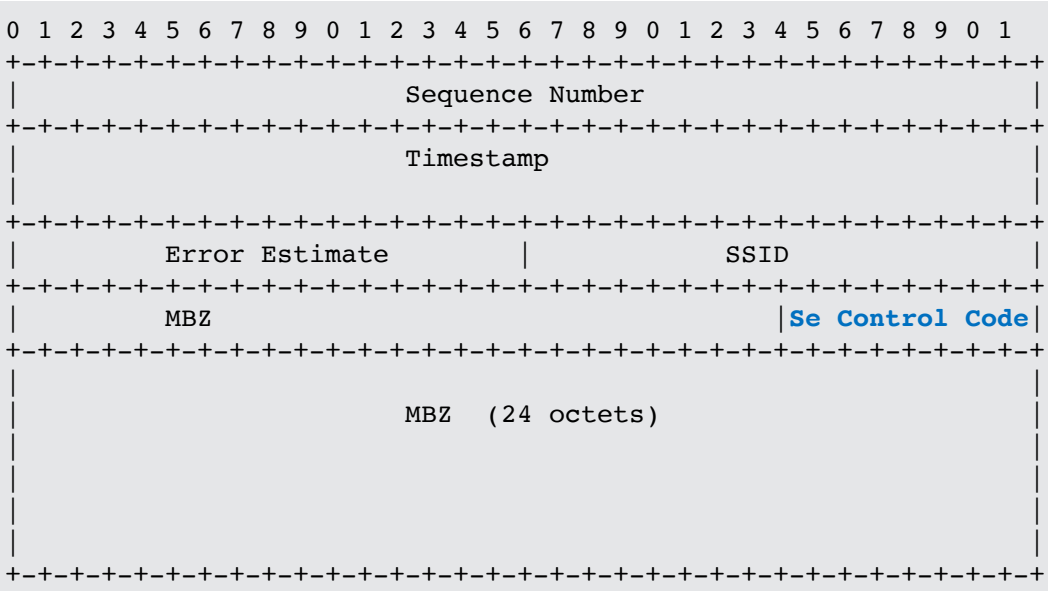

Figure: Session-Sender Control Code in STAMP DM Message

- With this, the Session-Reflector node does not require any additional state for PM

STAMP - Stand-alone Direct-mode LM Message Format

- Stand-alone Direct-mode Loss Measurement (LM) query and response messages defined
  - Hardware efficient counter-stamping
    - Well-known locations for transmit and receive traffic counters
  - Stand-alone LM message, not tied to DM
- Direct-mode LM message format is also defined for authenticated mode
- User-configured destination UDP **Port2** is used for identifying direct-mode LM probe packets
- Does not modify existing STAMP (which is for DM) procedure as different destination UDP port is used for direct-mode LM

STAMP - Destination Node Address TLV

Destination Node Address TLV (value TBA1):

- Indicates the address of the intended recipient node of the query message.
- The Session-Reflector node **MUST NOT** send response if it is not the intended destination node of the query.
- Useful when query is sent with 127/8 destination address.

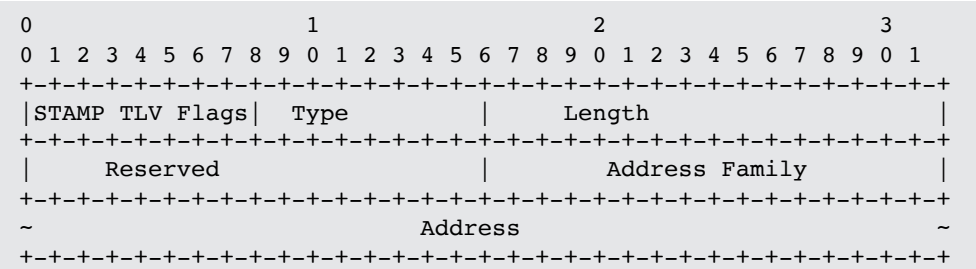

Figure: Node Address TLV Format

STAMP - Return Path TLV

Return Path TLV (value TBA2):

Sub-TLVs Types:

- Type (value 1): Return Address. Target node address of the response; different than the Source Address in the query
- Type (value 2): SR-MPLS Label Stack of the Reverse SR Path
- Type (value 3): SR-MPLS Binding SID [draft-ietf-pce-binding-label-sid] of the Reverse SR Policy
- Type (value 4): SRv6 Segment List of the Reverse SR Path
- Type (value 5): SRv6 Binding SID [draft-ietf-pce-binding-label-sid] of the Reverse SR Policy

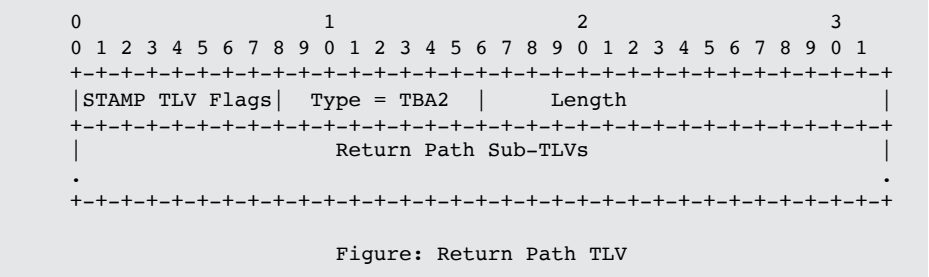

Figure: Return Path TLV

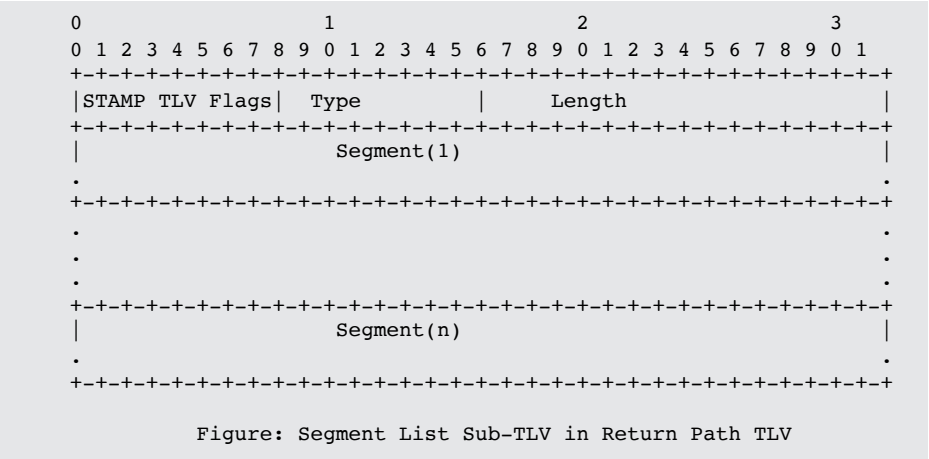

Figure: Segment List Sub-TLV in Return Path TLV

Next Steps

- Welcome your comments and suggestions
- Request IPPM WG adoption

Thank you