

PM on LAG

[draft-li-ippm-stamp-on-lag](#)

[draft-li-ippm-otwamp-on-lag](#)

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Motivation

- LAG Scenario

- Link delay of each LAG member link varies because of different transport paths.
- To provide low latency service for time sensitive traffic, we need to explicitly steer the traffic across the LAG member links based on the link delay, loss and so on.
- That requires a solution to measure the performance metrics of every member link of a LAG.

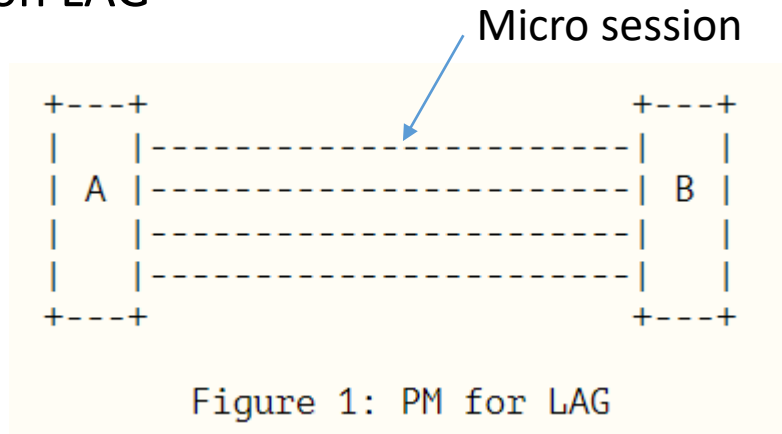
- Existing active PM methods

- Running a single test session over the aggregation without the knowledge of each member link would make it impossible to measure the performance of a given physical member link.
- The measured metrics can only reflect the performance of one member link or an average of some/all member links of the LAG.

- See BFD on LAG (RFC7130)

Solution Overview

- Extend OWAMP and TWAMP and STAMP to implement performance measurement on every member link of a LAG.
- The proposed method could also potentially apply to layer 3 ECMP (Equal Cost Multi-Path), e.g., with SR-Policy [I-D.ietf-spring-segment-routing-policy].
- Micro Session on LAG



- New command types to indicate the set of micro sessions of a LAG.
- Correlate the test packet to a particular micro session.
- Carry the member link information for validity check.

OWAMP/TWAMP Extensions

- Control message

Value	Description	Semantics Definition
TBD1	Request-OW-Micro-Sessions	This document, Section 3.1
Value	Description	Semantics Definition
TBD2	Request-TW-Micro-Sessions	This document, Section 4.1

- Test packet in unauthenticated mode

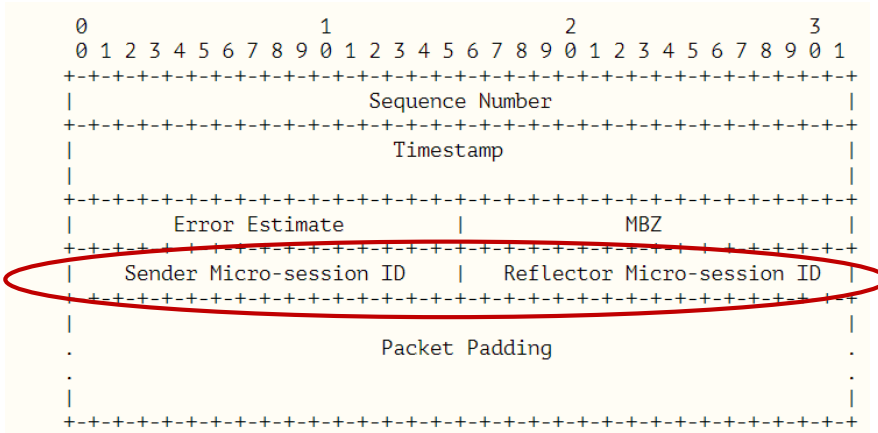


Figure 2: Micro Session-Sender Packet format in Unauthenticated Mode

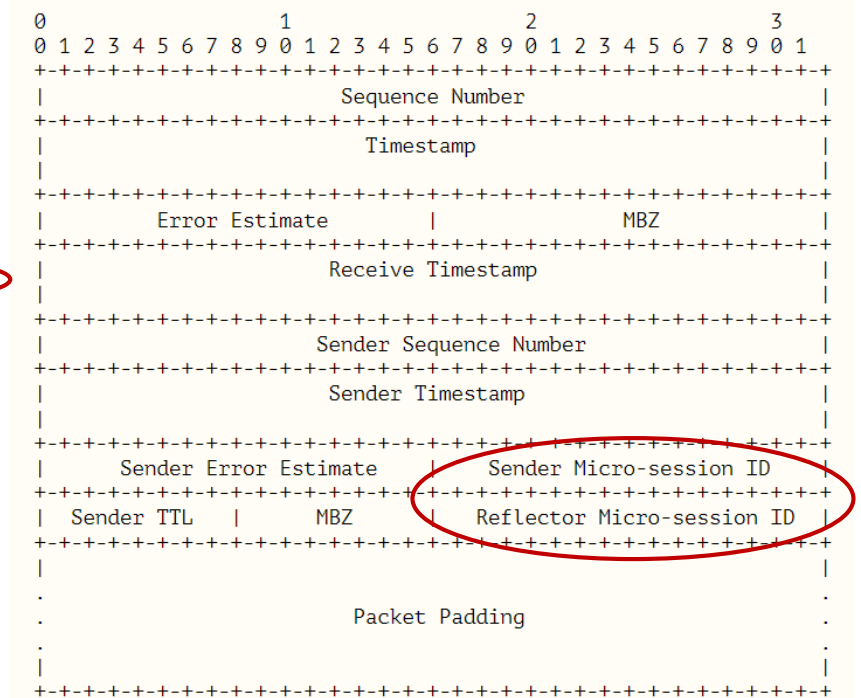


Figure 4: Micro Session-Reflector Packet Format in Unauthenticated Mode

OWAMP/TWAMP Extensions (Cont')

- Test packet in authenticated mode

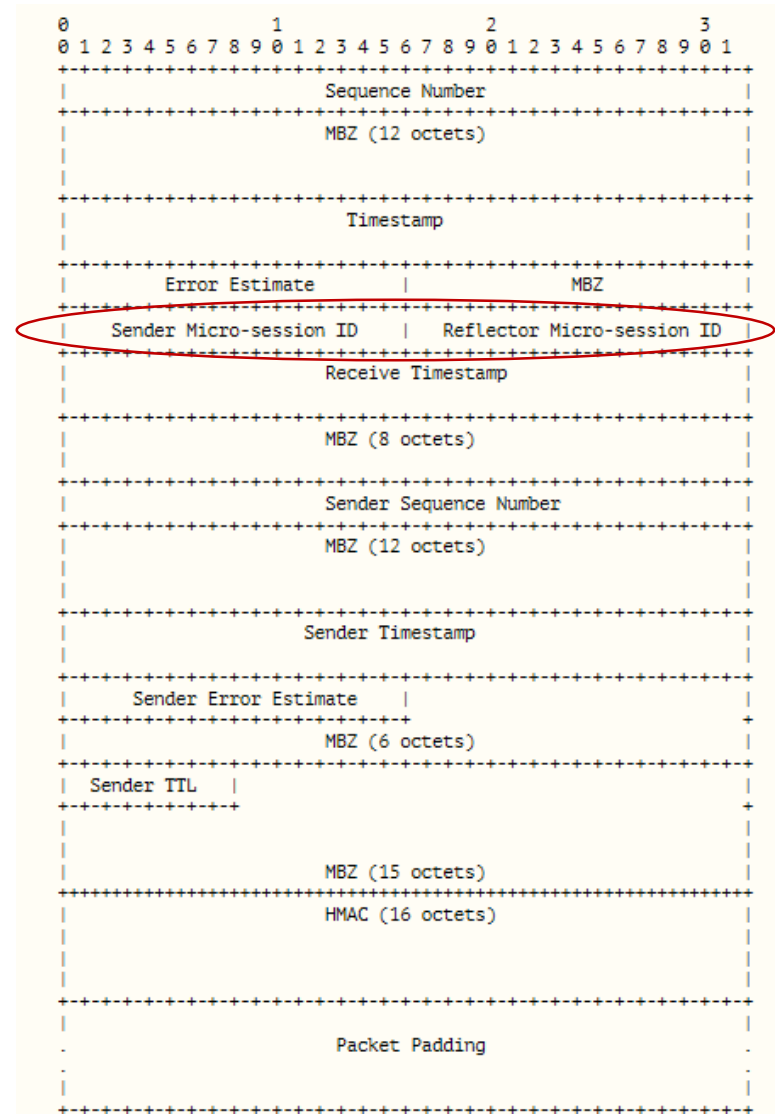
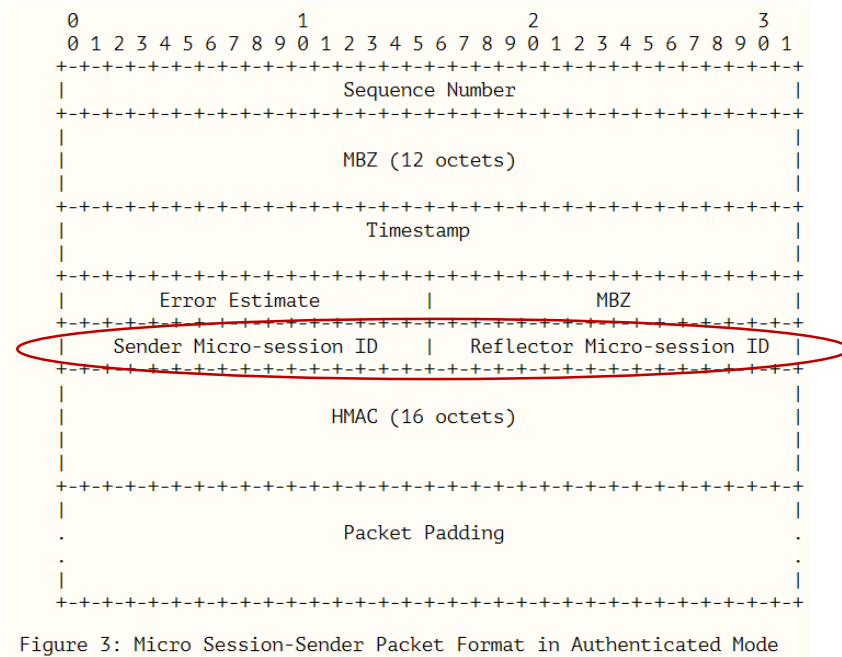
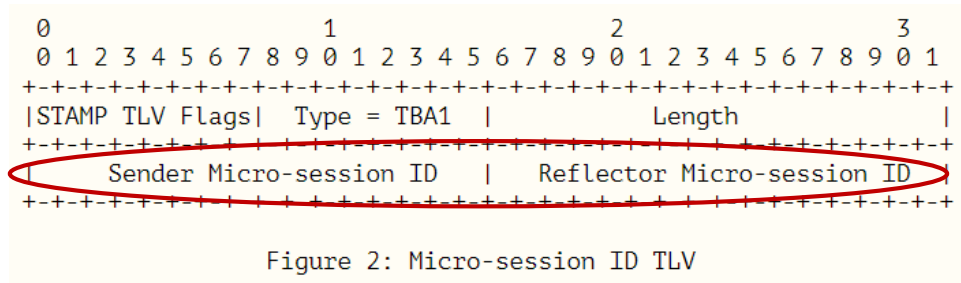


Figure 5: Micro Session-Reflector Packet Format in Authenticated Mode

STAMP Extensions

- STAMP TLV [RFC8972] mechanism extends STAMP Test packets with one or more optional TLVs.
- Micro-session ID TLV



Suggestions in the mailing list

- The LAG PM figure may be confusing.
- The proposed method could also potentially apply to layer 3 ECMP.
- The proposed LAG PM cannot deal with multi-hop scenario.
- The description of Control messages are not correct.

Next Step

- More comments are welcome.
- Both drafts are mature to be adopted by the working group.

Thank You