

# PM on LAG

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

[draft-ietf-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.

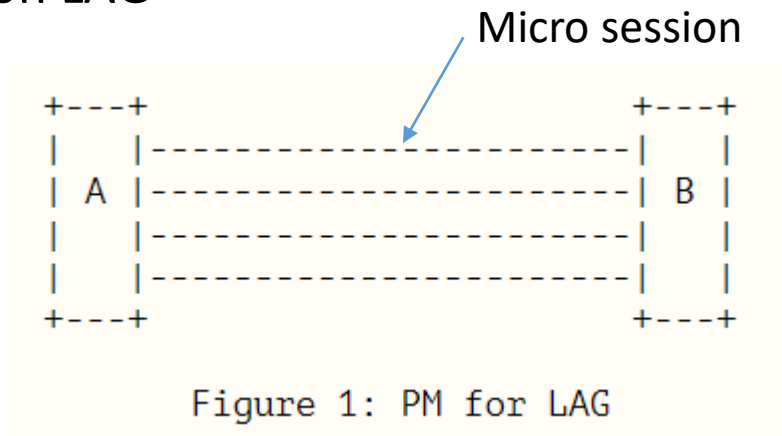
- Existing active PM methods

- 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 [RFC9256 ].
- 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

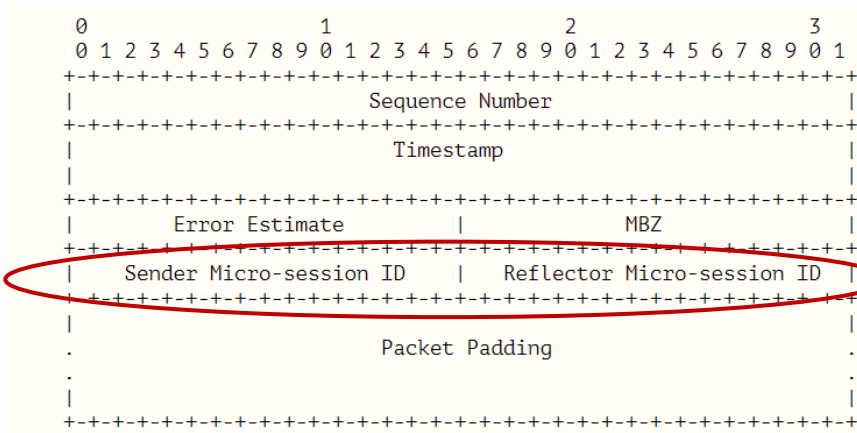


Figure 2: Micro Session-Sender Packet format in Unauthenticated Mode

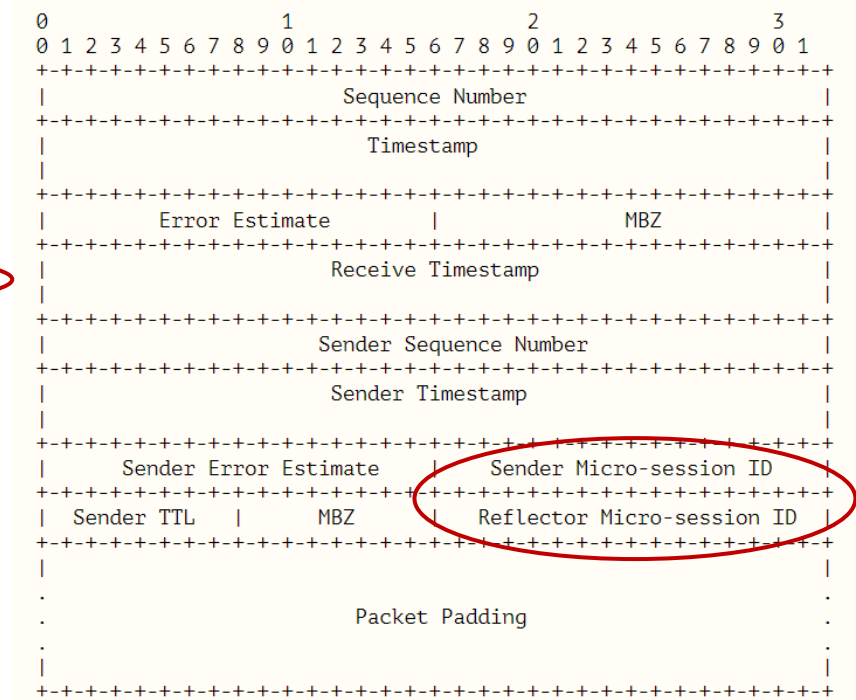


Figure 4: Micro Session-Reflector Packet Format in Unauthenticated Mode

# OWAMP/TWAMP Extensions (Cont')

- Test packet in authenticated mode

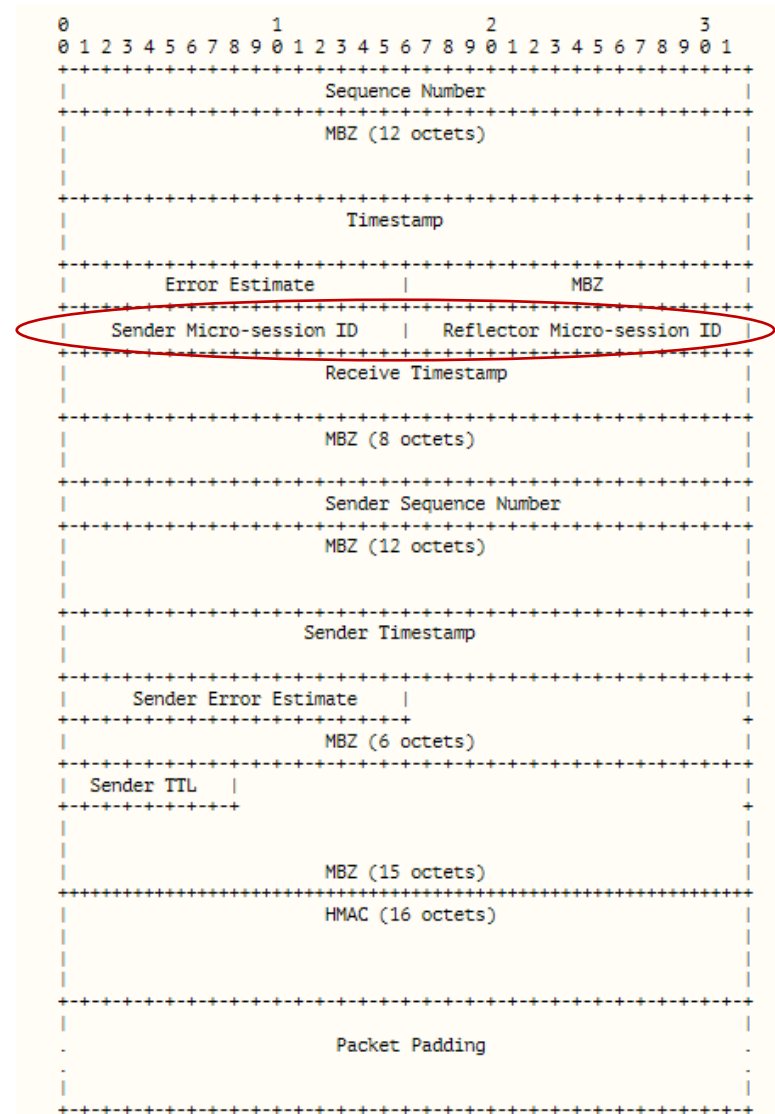
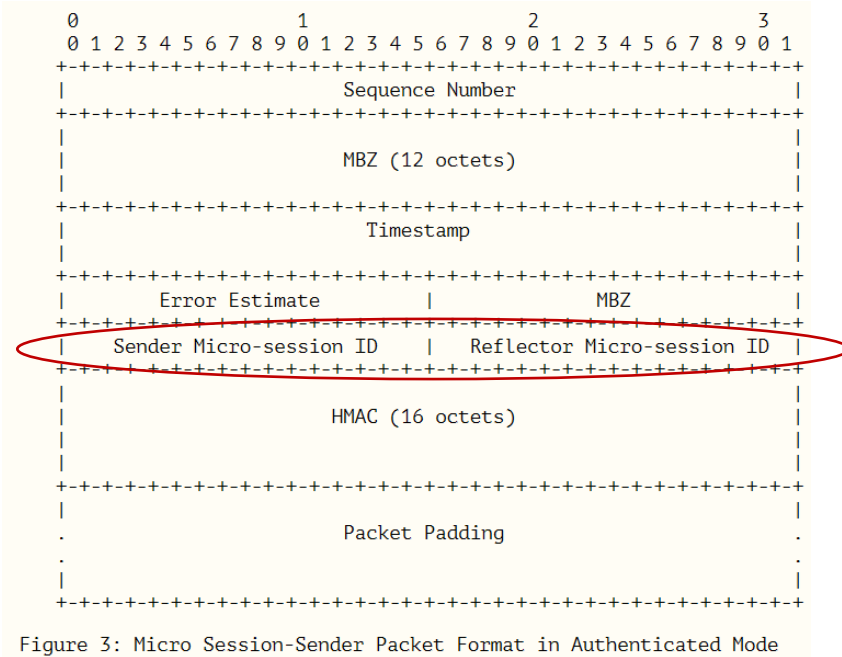
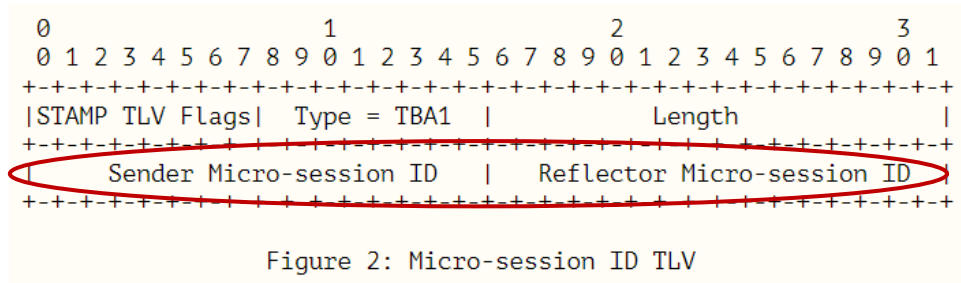


Figure 5: Micro Session-Reflector Packet Format in Authenticated Mode

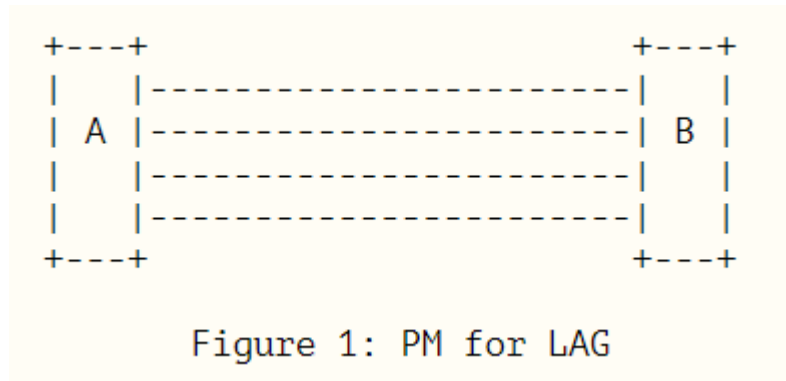
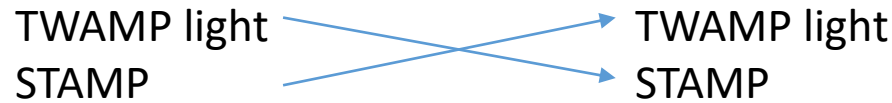
# STAMP Extensions

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



# Discussions during the adoption call

- The interoperability issue



1. There is no “requirement” for such deployment. This only happens when misconfiguration.
2. If there is misconfiguration, existing mechanism described in PM on LAG can detect. Than the operator can correct it.
3. An operator can choose not to use PM on LAG and the micro sessions, but to use independent session for each link.
4. Will describe this as operational considerations.

# Next Step

- Add stateless process for STAMP extension.
  - STAMP support both stateful and stateless mode.
  - Stateless reflector may simply copy the received micro-session-id in the reflector session-id.
- More comments are welcome.

# Thank You