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.
  • LAG will introduce jitter 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
  • 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

  ![Micro session diagram](image)

  Figure 1: PM for LAG

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

• Control message

<table>
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<th>Value</th>
<th>Description</th>
<th>Semantics Definition</th>
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<td>TBD1</td>
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<td>TBD2</td>
<td>Request-TW-Micro-Sessions</td>
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• Test packet in unauthenticated mode

![Figure 2: Micro Session-Sender Packet format in Unauthenticated Mode](image)
![Figure 4: Micro Session-Reflector Packet Format in Unauthenticated Mode](image)
OWAMP/TWAMP Extensions (Cont’)

• Test packet in authenticated mode
STAMP Extensions

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

Figure 2: Micro-session ID TLV
Discussions in the list

• STAMP support both stateful and stateless modes. Should PM on LAG also consider both modes?
  • STAMP Session-Reflector maintains the test state, thus allowing the Session-Sender to determine directionality of loss using the combination of gaps recognized in the Session Sender Sequence Number and Sequence Number fields, respectively.

• Add the following clarification:
  • The micro STAMP-Test supports both stateless and stateful modes.
  • However, the micro STAMP-Test does not introduce any additional state to STAMP, i.e, any procedure with regard to the Micro-session ID is stateless.
Next Step

• Ready for working group last call.
• More comments are welcome.

Thank You