PM on LAG

draft-li-ippm-stamp-on-lag
draft-li-ippm-otwamp-on-lag

Zhenqiang Li   CMCC
Tianran Zhou   Huawei
Jun Guo        ZTE
Greg Mirsky    Ericsson
Rakesh Gandhi  Cisco

IETF 113 IPPM Working Group
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 micro session.
  - Carry the member link information for validity check.
OWAMP/TWAMP Extensions

• Control message

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
<th>Semantics Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBD1</td>
<td>Request-OW-Micro-Sessions</td>
<td>This document, Section 3.1</td>
</tr>
<tr>
<td>TBD2</td>
<td>Request-TW-Micro-Sessions</td>
<td>This document, Section 4.1</td>
</tr>
</tbody>
</table>

• 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
STAMP Extensions

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

![Diagram of Micro-session ID TLV](image)
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