TWAMP Extension for Direct Loss Measurement

draft-xiao-ippm-twamp-ext-direct-loss-00

Xiao Min xiao.min2@zte.com.cn
Dou Zhanwei dou.zhanwei@zte.com.cn

IETF-99  July 2017, Prague
Intention of this draft

- Introduce direct loss measurement to TWAMP
  - TWAMP has been widely used
  - TWAMP supports a kind of “synthetic” loss measurement currently
  - “synthetic” loss measurement isn’t considered accurate enough, more accurate loss measurement requested by the customers
  - Extending TWAMP to support direct loss measurement is the simplest way
TWAMP-Control Extension

<table>
<thead>
<tr>
<th>Bit Pos</th>
<th>Description</th>
<th>Semantics Definition</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Direct Loss Measurement</td>
<td>Section 2</td>
<td>This Document</td>
</tr>
</tbody>
</table>

- a new Direct Loss Measurement flag is requested from IANA
- Server sets this flag in Server Greeting message and Client sets this flag in Setup Response message
- the new flag can be used in combination with other defined flags and it’s backward compatible
TWAMP-Test Extension (1)

Sender Test Packet

- S_TxC is set to the number of IP packets of the particular monitored flow transmitted towards the Reflector for Unauthenticated Mode.
**TWAMP-Test Extension (2) Reflector Test Packet**

- **S_TxC** is copied from the received Sender Test Packet
- **R_RxC** is set to the number of IP packets of the particular monitored flow received by the Reflector
- **R_TxC** is set to the number of IP packets of the particular monitored flow transmitted towards the Sender

For Unauthenticated Mode
TWAMP-Test Extension (3)
Traffic Loss Calculation

- Far-end loss: \( F_{\text{Loss}}[n-1,n] = (S_{\text{TxC}}[n] - S_{\text{TxC}}[n-1]) - (R_{\text{Rx}}[n] - R_{\text{Rx}}[n-1]) \)
- Near-end loss: \( N_{\text{Loss}}[n-1,n] = (R_{\text{TxC}}[n] - R_{\text{TxC}}[n-1]) - (S_{\text{Rx}}[n] - S_{\text{Rx}}[n-1]) \)
- Far-end loss ratio: \( F_{\text{LossRate}}[n-1,n] = F_{\text{Loss}}[n-1,n] / (S_{\text{TxC}}[n] - S_{\text{TxC}}[n-1]) \)
- Near-end loss ratio: \( N_{\text{LossRate}}[n-1,n] = N_{\text{Loss}}[n-1,n] / (R_{\text{TxC}}[n] - R_{\text{TxC}}[n-1]) \)
Next steps

• Ask for more reviews and comments
• Revise this draft to resolve comments
• Ask for WG adoption