TWAMP Extension for Direct Loss Measurement

draft-xiao-ippm-twamp-ext-direct-loss-01

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Intention of this draft

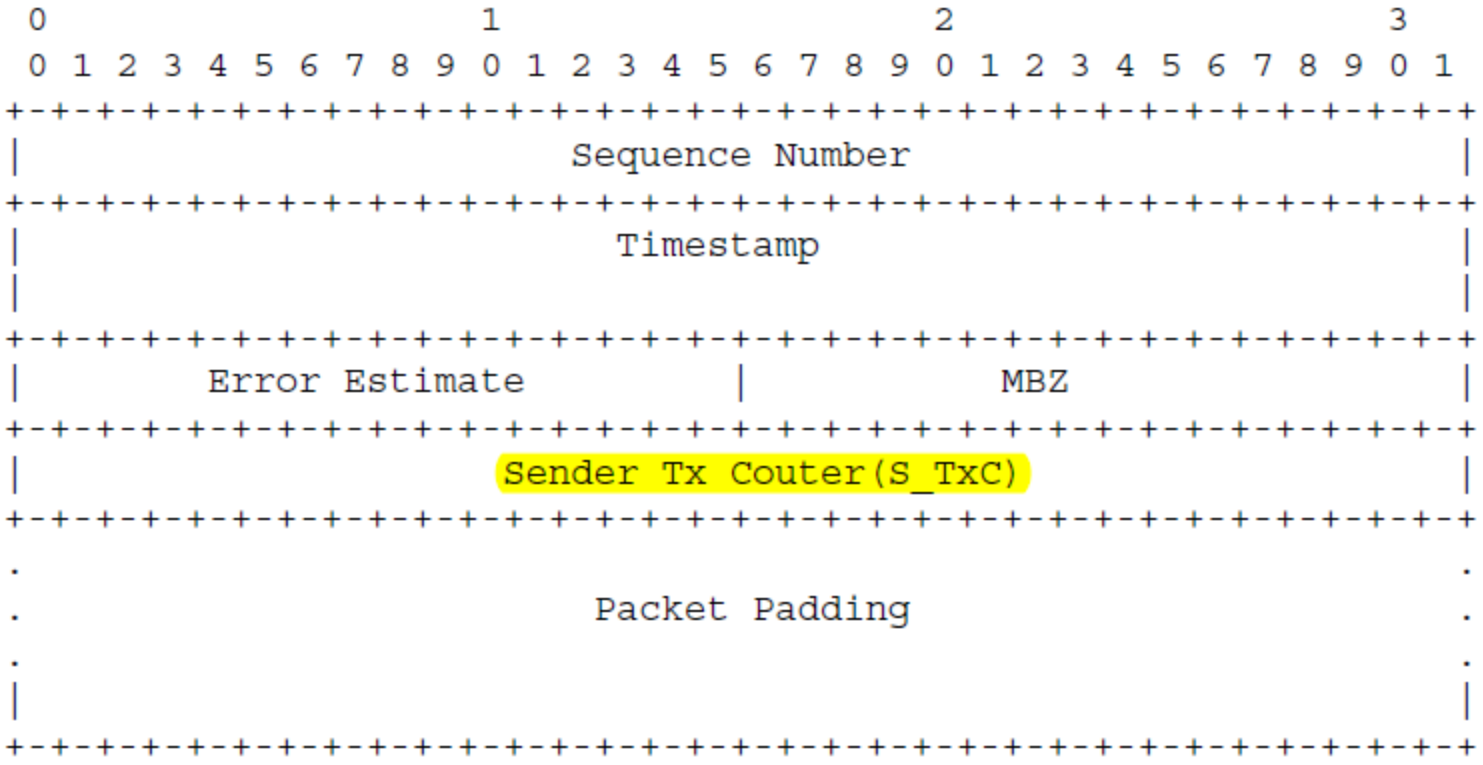
- Introduce direct loss measurement to TWAMP
  - TWAMP has been widely used
  - TWAMP supports a kind of “synthetic” loss measurement currently
  - “synthetic” loss measurement isn’t considered accurate enough, more accurate loss measurement requested by the customers
  - Extending TWAMP to support direct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

TWAMP-Control Extension

Bit Pos	Description	Semantics Definition	Reference
10	Direct Loss Measurement Capability	Section 2	This Document

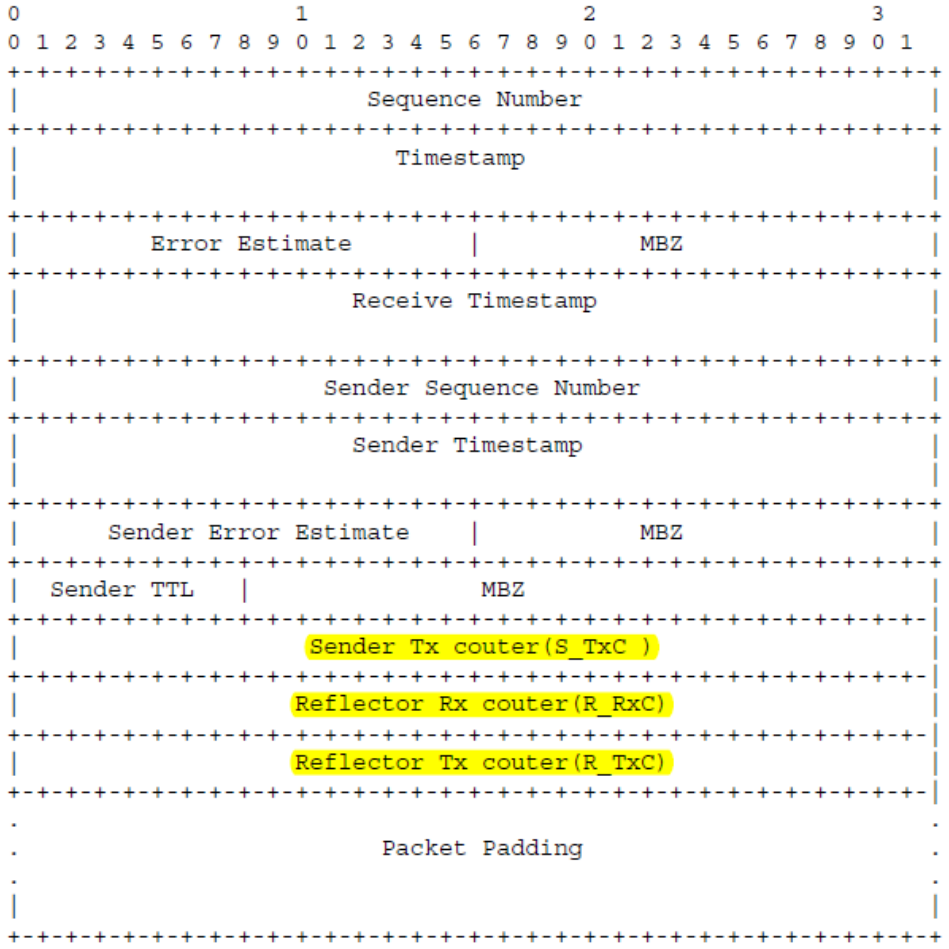
- a new Direct Loss Measurement flag is requested from IANA
- Server sets this flag in Server Greeting message and Client sets this flag in Setup Response message
- the new flag can be used in combination with other defined flags and it’s backward compatible

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

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

TWAMP-Test Extension (3) Traffic Loss Calculation

- Far-end loss: F_Loss[n-1,n] = (S_TxC[n] - S_TxC[n-1]) - (R_RxC[n] - R_RxC[n-1])
- Near-end loss: N_Loss[n-1,n] = (R_TxC[n] - R_TxC[n-1]) - (S_RxC[n] - S_RxC[n-1])
- Far-end loss ratio: F_LossRate[n-1,n] = F_Loss[n-1,n] / (S_TxC[n] - S_TxC[n-1])
- Near-end loss ratio: N_LossRate[n-1,n] = N_Loss[n-1,n] / (R_TxC[n] - R_TxC[n-1])

Next steps

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