RFC 1323 update

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Status since IETF58

- Nothing has really changed
  - No new draft
  - No discussion on the mailing list
- But… now part of TCPM WG

RTO adjustment

- When taking multiple RTTMs within one RTT, you must adjust the RTO estimator to take into account the more frequent measurements by decreasing the weighting factor.

Enabling TS midstream

- Turn on when PAWS is needed
  - short (<2 GB) connections don't need PAWs
- Still negotiate in SYN?
- Begs the general question: "Do most current TCP implementations properly handle unknown options midstream?"
  - In the past, some machines only handled unknown options on the SYN packet

PAWS & DF BIT

- Should PAWS require that the IPv4 DF bit be set?
    - PAWS protects first fragment
    - Other fragments protected by IP id (16 bits!)
    - TCP checksum should notice
    - Pathological case is ongoing loss of packets due to bad reassembly.

RTTM from DUP ACK

- Get valid RTTM after idle period, if first packet is lost
- Interoperability issues with current implementations?

RTTM from DUP ACK: Issues

- Need to copy SEG.TSval to SEG.TSecr in ACK, without updating TSrecent.
  - Updating TSrecent would break PAWS for re-ordered packets
  - One option: Split TSrecent
    - Keep TSrecent for PAWS
    - Add TSecho for what to put into SEG.TSecr for outgoing packets.
    - TSecho same as TSrecent except when out-of-order data received

RTTM from DUP ACK: Issues

- Need a definition for "DUP ACK":
  - 1. the TCP sender has outstanding data, AND
  - 2. the ACK number is the largest seen so far, i.e., it acks snd_una, AND
  - 3. the ACK is a pure ACK, i.e., SEG.LEN == 0, AND
  - 4. the advertised window info didn't change, i.e., this is *not a window update*.

Outstanding issues/questions

- RTO adjustment
- Enable TS midstream
- PAWS & DF bit
- RTTM from DUP ACK

Non-technical issues

- HS-TCP and others depend on window scaling
- Eifel depends on Timestamp option
- Should SACK even be discussed?
- MUST/SHOULD/MAY updates
- Update discussions with last 10 years of experience

Document & Mailing list

- draft-jacobson-tsvwg-1323bis-00.txt
  - Will expire real soon…
- tcpm@ietf.org