Congestion Window Validation

draft-ietf-tcpm-newcwwv-03

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Updates since draft -02

• Response to congestion in non-validated phase
  – Start of recovery:
    \[ cwnd = \frac{(\text{Max}(\text{pipeACK}, \text{LossFlightSize}))}{2} \]
  – End of recovery:
    \[ cwnd = \frac{(\text{Max}(\text{pipeACK}, \text{LossFlightSize}) - R)}{2} \]
    ‘\( R \)’ is the retransmission volume
  – pipeACK considered for ‘End of Burst losses’

• Validated phase when pipeACK is undefined
  – at the initial stage and after recovery
Expt Linux newCWV module

• Module follows the latest draft
• Implements the example pipeACK calculation
• Linux kernel versions > 3.0 required
• Code file and compilation instructions:
  https://github.com/rsecchi/newcwv
• Feedback very welcome
newCWV with different applications

HTTP streaming (DASH player)
3 persistent connections to server

Video streaming (VLC)

FTP application (Filezilla) – cwnd reduction of one connection after NVP of 5 mins
Issues to address ...

• Non Validated Period (NVP)
  – We must decay after a “long” time
    • Path changes, apps going idle, etc.
  – Is 5 mins too long to halve cwnd? Or OK?
  – 0.19% HTTP connections in one hour (CAIDA traces)

• Do we need pacing of line-bursts in NVP?
  – Max burst method does not work with no ACK-Clock
Summary

• We think this is NEARLY ready!!!
• We need people to experiment with it...
• We need some help to finish...

• Finally, thanks to:
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  – Zia Hossain helped with analysis and Linux Coding
  – Thanks to all who commented on-list and off-list!