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Congestion Window Validation

draft-ietf-tcpm-newcwv-03

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Updates since draft -02

- Response to congestion in non-validated phase

- Start of recovery:

$$\text{cwnd} = (\text{Max}(\text{pipeACK}, \text{LossFlightSize})) / 2$$

- End of recovery:

$$\text{cwnd} = (\text{Max}(\text{pipeACK}, \text{LossFlightSize}) - R) / 2$$

'R' is the retransmission volume

- pipeACK considered for 'End of Burst losses'

- Validated phase when pipeACK is undefined

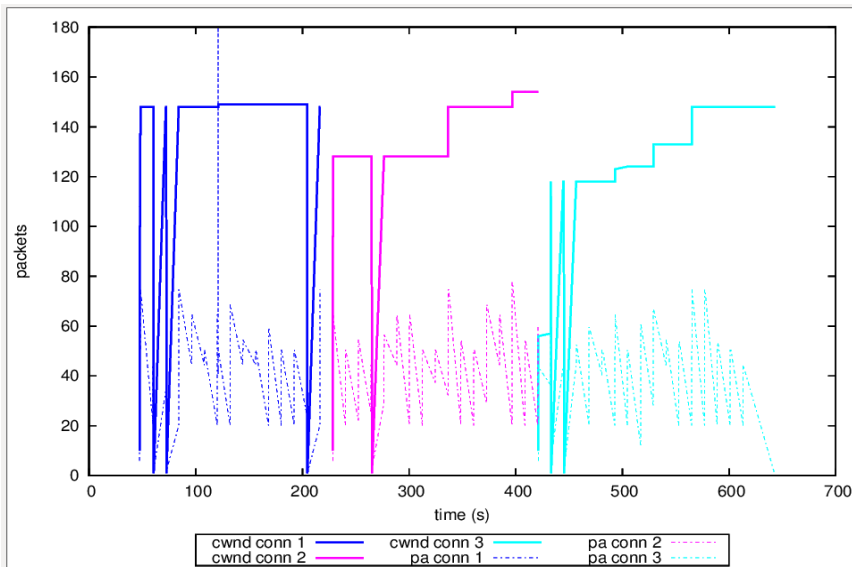
- at the initial stage and after recovery

Expt Linux newCWV module

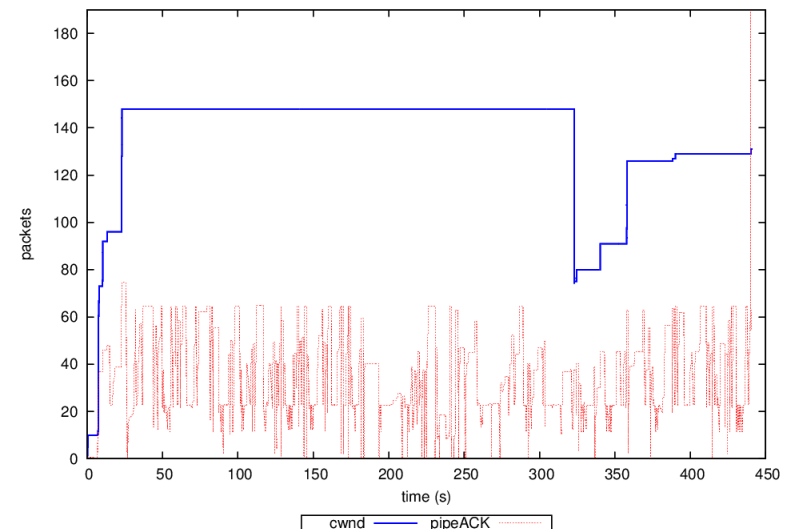
- Module follows the latest draft
- Implements the example pipeACK calculation
- Linux kernel versions > 3.0 required
- Code file and compilation instructions:
<https://github.com/rsecchi/newcwv>
- Feedback very welcome

newCWV with different applications

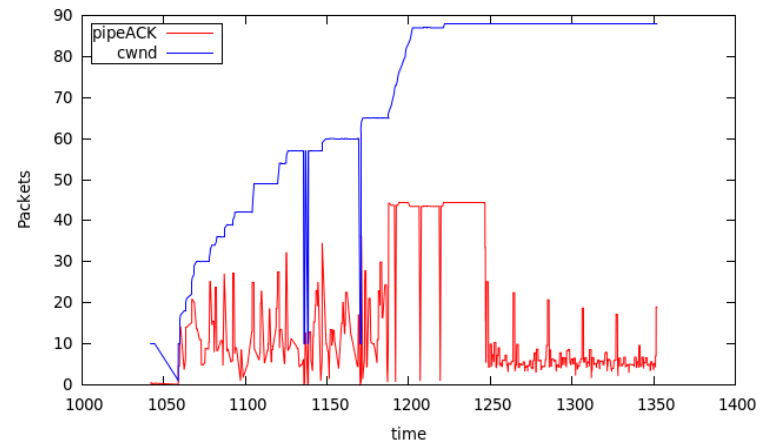
HTTP streaming (DASH player)
3 persistent connections to server



FTP application (Filezilla) – cwnd reduction of one connection after NVP of 5 mins



Video streaming (VLC)



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:
 - This work was partly funded by the EC under its 7th Framework Programme through the RITE project (ICT-317700)
 - Zia Hossain helped with analysis and Linux Coding
 - Thanks to all who commented on-list and off-list!