TSVWG 99 Prague

Status update DualQ draft

draft-ietf-.tsvwg-aqm-dualq-coupled-01

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DualQ status

Further improvements on the draft were done:

• Adopted IETF draft submitted

• Overload handling pseudo code is added

• PIE heuristics removed in DualPI2 have been assessed and discussed on the mailing list

• Linux open source release cleanup:
  PI2 config parameters simpler than PIE: Inter-dependencies removed (e.g. between (α,β) and T_update and k)

• Linux upstream submission ongoing
  extra classifier filter hooks to be added
WARNING: Ongoing (r)evolutions

Reno
Sender only

Cubic
DROP / Taildrop

BBR
Delay / Taildrop

ECN/RED
Network only

fq_codel PIE/PI2

Classic AQM / ECN

DCTCP
STEP

All

DualQ Prague

L4S AQM / ECN
Sender only evolution: BBR & Taildrop / Bufferbloat

BBR controls the queue on 20ms on 100Mbps & 20ms RTT link

High throughput and full link for long flows

No drop and limited delay for short flows
Short flow variations build on top of queue target
Network-only and Sender-only clash: BBR & AQM

PIE AQM tries to limit queue to 15ms, needs 5 to 20% drop

BBR enforces bigger Q and does not respond to high drop probability

Very bad short flows completion times

BBR with AQM: https://youtu.be/4eYfyKYe9nM
BBR with Cubic: https://youtu.be/akO1HN2ey48
Network-only and Sender-only clash: BBR & AQM

PIE AQM tries to limit queue to 15ms, needs 5 to 20% drop

BBR enforces bigger Q and does not respond to high drop probability

Will using BBR (as is) force operators to disable AQMs (with ECN)?
Where to solve the clash??

BBR (as is in current Linux release) clashes with AQM
- BBR ignores drop
- AQMs make things worse!
- immediate network solution will be to disable AQMs?

We proposed a possible solution in ICCRG

Who (which WG) should handle this clash?
Questions

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