# L4S Issues 26, 27, 22

TSVWG Virtual Interim

Feb 20, 2020

Greg White

g.white@cablelabs.com

# Issue 26: Admission Control

- Issue summary:
  - In Dual-Q, high rate unresponsive traffic in the L4S queue could cause problems
  - NQB draft recommends Queue Protection to prevent problems with "misbehaving" NQB-marked flows
  - Shouldn't DualQ-coupled-AQM also recommend QP to prevent problems with misbehaving ECT(1)-marked flows?

- Non responding traffic of any type can hurt any type of other traffic due to the coupling
- Overload protection makes sure that this is also the case in extreme non-responding cases that saturate the coupling
- L4S does not create a DoS vector

- Proposal:
  - Many L4S nodes may also support the NQB PHB, where QP is recommended already
  - For those that don't, additional policers can be added to protect the L4S queuing latency from misuse on an as-needed basis.

# Issue 27: The term "Classic"

- Lots of opinions expressed - no consensus
- Proposed Compromise
  - Existing TCP
    - Don't refer to existing standard TCP as "Classic"
    - Instead use "non-L4S TCP" or "TCP using classic congestion control"
  - Congestion Control
    - Continue to use the term "Classic Congestion Control" – defined in the document to mean Reno-friendly or $1/\text{sqrt}(p)$
  - RFC-3168 ECN
    - Continue to use the term "Classic ECN" – defined in the document to mean RFC-3168 ECN
  - Dual-Queue Description
    - Continue to use the terms "Classic Service", "Classic Queue", "Classic Packets", "Classic sender", "Classic AQM", "Classic Traffic" to differentiate from "L4S *"

# Issue 22: Deployment Feasibility

- Issue Summary:
  - DualQ classifies CE-marked packets to the L4S queue
  - A non-RACK-capable, RFC-3168 ECN-Capable TCP Connection, operating on a path where an RFC-3168 ECN AQM bottleneck precedes a DualQ bottleneck, could experience packet reordering
    - Likely one or more CE packets arriving ahead of some lower-sequenced ECT(0) packets

- Question:
  - In the case of a single CE marked packet, wouldn't the sender see one dupack with ECE flag, then the normal ack sequence?
  - In the case of multiple (n) consecutive CE marked packets, wouldn't the sender see n dupacks with ECE flag, then the normal ack sequence?
  - In both cases, wouldn't the sender simply cut its cwnd one time?   Since that is the desired behavior anyway, is there a problem to solve?

- Proposal:
  - This seems like an unlikely situation to happen in practice
  - This topic is already discussed in Appendix B.1 of the ecn-l4s-id draft
  - This seems like a relatively low priority item, but it could be tested if need be.