Issues(1): L4S-Internet Coexistence

- Receiver cannot distinguish whether CE marks are L4S vs. RFC-3168 (Classic)
  - Fundamental confusion that underpins most of the L4S issues
  - Not compatible with RFC 4774 Option 3 (Friendly Coexistence)
- L4S transports assume CE marks are L4S signals - often untrue today
  - Significant middlebox deployments of RFC 3168
  - Alternative Backoff with ECN (RFC 8511) requires multiplicative decrease, L4S transports don't do that.
- If L4S & conventional flows share a FIFO & AQM:
  - Conventional flows may suffer (badly),
  - Even though the FIFO & AQM comply with all applicable RFCs
- Safety, Compatibility, Coexistence - still problematic in L4S "running code"

Issues(2): Dual Queues and AQM

- Creates DoS (Denial-of-Service) vulnerability in some tunnels
  - Attacker advances replay protection window by sending low-latency traffic
  - Conventional traffic arrives after window has advanced, gets discarded
- Uncontrolled throughput bonus to traffic in low latency queue
  - Easily exploited – no enforced congestion control or required admission control
  - Diffserv PHB would likely require admission control (e.g., VOICE-ADMIT)
- AQM disadvantages fragmented and small-MTU traffic
  - Congestion marking algorithm biased against small packets
- DualQ AQM algorithm intolerant of bursty traffic
  - Bursty applications (e.g., real-time video) and links (e.g., WiFi)
    cause large reduction in goodput