ECT(1) and the Internet

TSVWG Interim Meeting – Feb 20, 2020

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(on behalf of the TSVWG Chairs)
Note Well

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BCP 9 (Internet Standards Process)
BCP 25 (Working Group processes)
BCP 25 (Anti-Harassment Procedures)
BCP 54 (Code of Conduct)
BCP 78 (Copyright)
BCP 79 (Patents, Participation)
https://www.ietf.org/privacy-policy/ (Privacy Policy)
Now this is not the end. It is not even the beginning of the end. But it is, perhaps, the end of the beginning.

-- Winston Churchill (1942)
The End of the Beginning

• TSVWG needs to make a decision about ECT(1) usage in the Internet
  • Core element of Issue #20 in the Issue Tracker
• TSVWG Chairs: Propose to make that decision in Vancouver (March)
  • But, what exactly is to be decided?
• The End of the Beginning: Agreeing on the decision to be made.
ECT(1): Agreeing on the Decision to be Made

• Next two slides: TSVWG Chairs attempt to state the decision
  • Goal of this Interim Meeting: Rough consensus on decision to be made
  • Non-goal of this Interim Meeting: Actually make the decision

• Vancouver meeting plan (in order):
  1. Begin with revised versions of next two slides
  2. L4S and SCE each present a few slides on best use of ECT(1) for the Internet
     • TSVWG Chairs set time & content guidelines, review and post in advance (1 week or more)
  3. TSVWG Chairs frame and moderate Vancouver meeting discussion
  4. A small miracle happens, and the decision is made (we hope)

• Now: Review next two slides for content
  • Do not attempt to make decision now.
DRAFT Vancouver SLIDE 1: Framing the ECT(1) Codepoint Decision

Background: RFC 4774 “Specifying Alternate Semantics for the Explicit Congestion Notification (ECN) Field”
- RFC 4774 assumes DSCP as signal of alternate ECN semantics.
- TSVWG situation: Two proposals that use ECT(1) as that signal [L4S, SCE]

Decision: How ECT(1) signals alternate ECN semantics to network:
  A. Input, e.g., classifier for “queue” selection [L4S]
  B. Output, e.g., indication of lesser degree of “queue” congestion [SCE]

At Internet scope: Choose at most one, not both.
Both proposals [L4S, SCE] employ RFC 4774 Option 3 (section 4.3):
  • Incremental Deployment Option 3: Friendly Coexistence with Competing Traffic
  • Competing Traffic uses existing TCP congestion control, e.g., Reno, Cubic, etc.

Coexistence Focus: Shared bottleneck queue with ECN AQM [RFC 3168]
  • FQ network nodes: Not a significant cause of coexistence problems

Scenario: Traffic competition at shared bottleneck queue:
  1. Starvation of one class of traffic is not an acceptable outcome.
     a. Starvation may occur in network and/or at endpoints (e.g., caused by congestion response)
  2. Competing Traffic drives bottleneck queue occupancy level.

Proposals need to explain how to deal with this scenario.