Reactions to Signaling from ECN Support for RTP/RTCP

draft-carlberg-tsvwg-ecn-reactions-01.txt

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Background

- RFC 3168: Addition of ECN to IP for TCP
  - Two layer design: IP ECN field, Transport negotiation & feedback
  - Specifies support for TCP
  - Obsoletes rfc-2481, and updates rfc-2474
- draft-ietf-avtcore-ecn-for-rtp-06
  - Specifies signaling to support ECN for RTP/UDP flows
    - Specification for SDP signaling extensions
    - Define RTP/AVPF ECN feedback packet
    - Define RTCP eXtended Report (XR) for ECN summary information
  - Specifies default reaction based on congestion control algorithm
    - Note: discussion of algorithm(s) is out-of-scope
    - MAY be other reactions
Updates: Comments from IETF82

• Comments from Perkins, Kutscher @ IETF82
• Updates on TFRC based transport protocols
  – DCCP, DCCP:CCID3 (TFRC for DCCP) [RFC4342]
  – *TFRC: The Small Packet Variant*, [RFC4828]
  – *Unicast UDP Usage Guidelines for Application Designers*, BCP145[RFC5405]
  – draft-gharai-avtcore-rtp-tfrc-01
• Updates on relevant 3GPP standard for base-station specifications
  – *E-UTRA and E-UTRAN Overall Description, Stage 2*, 3GPP, Release 10, September, 2011 [ts36.300]
Updates: Rtcweb/Rmcat

- New text on Rtcweb/rmcat new delay-based congestion control
  - Perceived shortcomings of TFRC
  - Problem with TCP flow competition and low delay
  - It will be some time before new congestion control standards emerge
“Alternative Reaction for Emergency Communications”

Outlines ECN-IGNORE scheme for authorized entities
  - Provides higher throughput for all TCP like congestion control algorithms
  - Where Throughput $\sim 1/\sqrt{\text{total_loss} = \text{loss} + \text{ECN}}$

Updated simulations section
  - Added details on 5% ECN-IGNORE simulation scenario
  - Behaviour is dependent upon Congestion Congestion control and AQM mechanisms

Added text on delay behavior of TFRC
  - TFRC is loss-based so will naturally fill any buffers till loss occurs
  - Delays dependent on buffering and configuration of the path
Questions/Issues

• Should the Reactions draft avoid singling out a single CC algorithm and only identify a variety of approaches?
• Should we only focus on ECN-IGNORE?
• Working group adoption?