draft-khademi-tcpm-alternativebackoff-ecn-00

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TCPM @ IETF 96

Background

- We want to let the TCP sender react differently to an ECN mark than it does to loss

- The reduction in FlightSize can be less (than with *loss*) since we know an AQM is on the path, providing a shallow buffer
  - This yields better utilisation with negligible impact on delay

- Some text in RFCs 3168 and 4774 prohibits this. <u>This limits experimentation</u>. => an update is proposed in draft-khademi-tsvwg-ecn-response-00

- We propose a beta value for experimentation in draft-khademi-tcpm-alternativebackoff-ecn-00

Timeline

- draft-khademi-alternativebackoff-ecn-00, with simulation + experimental results, was presented in **TCPM, IETF 93**

- Based on recommendations from TCPM chairs, I-D was discussed in ICCRG

- An update (-01) was presented in **TCPM, IETF 94**
  - Some clarifications in the language (e.g. scope, usefulness, practicality)
  - Addressed comments from TCPM and ICCRG ML

- Update to -03 was presented in **TSVWG, IETF 95**
  - E.g. use of FlightSize instead of cwnd

- Based on AD recommendations, -03 was replaced by:
  1. *draft-khademi-tsvwg-ecn-response-00 (updating RFC3168 and RFC4774)*
  2. *draft-khademi-tcpm-alternativebackoff-ecn-00 (Experimental, proposing a concrete backoff behaviour)*

draft-khademi-tcpm-alternativebackoff-ecn-00

- draft-khademi-tsvwg-ecn-response-00 relaxes the ECN-mark reaction to be different than with loss

- draft-khademi-tcpm-alternativebackoff-ecn-00 RECOMMENDS that experimental deployments multiply the FlightSize by 0.8 and reduce the slow start threshold 'ssthresh' in Congestion Avoidance in response to reception of a TCP segment that sets the ECN-Echo flag.

- Choice of ABE multiplier based on the results in:

Khademi, N., Welzl, M., Armitage, G., Kulatunga, C., Ros, D., Fairhurst, G., Gjessing, S., and S. Zander, *"Alternative Backoff: Achieving Low Latency and High Throughput with ECN and AQM"*, CAIA Technical Report CAIA-TR-150710A, Swinburne University of Technology, July 2015
http://caia.swin.edu.au/reports/150710A/CAIA-TR-150710A.pdf

Question

Adopt in TCPM, if draft-khademi-tsvwg-ecn-response-00 is adopted in TSVWG?