Analysis for the Differences Between Standard Congestion Control Schemes

draft-nishida-ccwg-standard-cc-analysis-01

Yoshifumi Nishida
nsd+ietf@gmail.com
Background

• Congestion Control standards should provide consistent guidelines, shouldn’t contradict
  • Also, they should be transport protocol agnostic in general

• Analyzing the impacts of Congestion Controls on the Internet won’t be easy
  • It would require long term analysis
  • Having a reference for several checking points could be useful
Goals of this document

• Published as an Informational RFC for a reference

• Clarify differences between congestion control standards
  • They should provide the consistent guidelines to avoid conflicts
  • Initiate discussions for the next steps

• Could be used as a reference for future analysis on the impacts of congestion controls on the Internet
What’s in this draft?

• A list for differences on certain topics in CC standards
  • TCP Reno(RFC5681), QUIC Reno(RFC9002), CUBIC(RFC9438)

• Difference between TCP Reno and QUIC Reno
  • Ideally, TCP Reno and QUIC Reno should not be different with regard to aggressiveness

• Difference between Reno and CUBIC in terms of fairness
  • Ideally, Reno and CUBIC should coexist ‘mostly’ fairly
    • It’s fine CUBIC archives better performance, but shouldn’t push away Reno
Relationship with RFC5681bis

• The doc can be an useful reference to revise RFC5681
  • Contains discussions for Initial Window, Loss window, Min RTO, ABC, etc

• The doc also contains discussions other than Reno
  • Discussions for CUBIC with Reno fairness issue, etc
  • Could be reference for future congestion control analysis on the Internet