Abstract

Conventional congestion control methods (e.g. DROP TAIL) discards all received packets after the queue is full moreover results in low-network performance. To address this problem, RED was proposed to improve the performance of TCP connections. As a queue management mechanism, it drops packets in the considered router buffer to adjust the network traffic.
behavior according to the queue size. In application, TCP Variants (Reno, NewReno, Vegas, Fack and Sack1) show oscillatory curve of packet reception if RED is considered for queuing, besides, some variants out performs in receiving packets over different network parameters that this paper analyzes and finds out. However, an increase in link capacity (with the resulting increase of per-flow bandwidth) will cause significant degradation in TCP’s performance, irrespective of the queuing scheme used. Hence the network is prone to instability with the rise in the number of High-bandwidth-delay product that is also attended to in this paper.

Reference

- C.V. HOLLOT, VISHAL MISRA, DON TOWSLEY AND WEI-BO GONG: A Control Theoretic Analysis of RED. IEEE INFOCOM 2001
- YIGUANG HONG, YONGHAN CAO, HAIRONG SUN, KISHOR S. TRIVEDI: ‘RED parameters and Performance of TCP Connections’. In part by ARO-MURI “Mathematics of Failures in Complex Systems”.
- DINA KATABI, MARK HANDLEY, CHARLIE ROHRS: Congestion Control for High Bandwidth-Delay Product.
- NS, The network simulator-ns-2.27. URL:http://www.isi.edu/nsnam/ns
- “The ns Manual”, The VINT Project, A Collaboration between researchers at UC Berkeley, LBL, USC/ISI, and Xerox PARC.
Random Early Discard (RED-AQM) performance analysis in terms of TCP Variants and Network Parameters: instability in High-bandwidth-delay network

**Index Terms**

Computer Science

**Key words**

RED

AQM

BW

TCP Variants

NS-2