Effective Utilization of Router Buffer by Threshold Parameter Setting Approach in RED

Abstract

Active Queue Management (AQM) provide solution to Network congestion of Internet. Random Early Detection(RED) is the first well known AQM recommended by Internet Engineering Task Force (IETF) used for congestion avoidance for last three decades. RED has some disadvantages like hard tuning of control parameters, inefficient congestion notification, insensitivity to variation of traffic load. In this research work above issues are addressed and a mixed approach of threshold parameter tuning in terms of router buffer space and inclusion of traffic load in congestion notification along with average size is used. The approach is given the name LTRED, here L is for length of buffer and T stands for Threshold. In this research work, impact of variation of router queue size in terms of bandwidth under different traffic load scenario is observed and compared with standard AQM’s like RED, ARED and AVQ. Extensive simulations using ns-2 simulator demonstrates that LTRED outperforms others in terms of effective utilization of router buffer space, less packet loss, high goodput and high link utilization.
References


Index Terms

Computer Science Networks
Keywords

Active Queue Management (AQM), Average queue size, Congestion Avoidance, Network Simulator (ns), Random Early Detection (RED).