

ABSTRACT

TCP / IP is a data communication standard used in the process of exchanging data from one computer to another on the Internet network. The increasing number of internet users and the increasing load on the network, often results in congestion. In the TCP / IP network requires a method for controlling queue (congestion control) to improve the performance of QoS (Quality of Service), in the form of AQM (Active Queue Management). The use of AQM routers is one of the congestion avoidance mechanism that is applied to deal with a decrease in network performance. AQM uses a feedback system that can dynamically see the average queue and conclude when and where the package will be discarded.

AQM method which were recommended by IETF (Internet Engineering Task Force) is RED (Random Early Detection). RED is one of the data queue management algorithms to determine the size of the average queue length of the data before it goes into the router and discard packets with a certain probability. This final project conducted a study to analyze the effect of the addition of RED scheduling algorithm in TCP / IP network with buffer size, RTT (Round Trip Time), and as well as the number of hosts on AQM router. Parameter simulation results that will be analyzed are packet drop, throughput, delay, and jitter. Performance analysis was done by using ns-3.

The test results showed RED has smaller delay and slightly better throughput and index fairness than droptail.

Keyword : TCP / IP, Active Queue Management, Random Early Detection