

## Abstract

Recently, various multimedia services such as IPTV and video conferencing appears to be the main source of traffic in the Internet network. On the network Transmission Control Protocol (TCP) congestion is one cause of the decline in performance. Overly complex control functions allow the delay that can not be tolerated in meeting the multimedia application services. Though the multimedia services are expected to have a low packet delivery delays. Congestion control using queue management with First In First Out (FIFO) causing buffer to be full and increasing the delay. Congestion control using active queue management is expected to minimize the delay by detecting early congestion before the buffer is full.

In this research, we discussed about a new algorithm of active queue management called TSAQM (Traffic Sensitive Active Queue Management) is compared with Adaptive RED active queue management in determining the best QoS in a network. The QoS performance analysis was conducted on the delay, throughput, packet loss and PDR (packet delivery ratio) through several scenarios on both the active queue management to change the bit rate of the packet and analysis of changes in link capacity at a particular observation period, so it can be analyzed further regarding the optimal performance level.

The simulation results show that the queue management TSAQM can maintain better QoS from a small delay value, greater throughput, small packet loss and the large packet delivery ratio in comparison with the ARED mechanism.

**Key words :** *Congestion control, Active Queue Management, TSAQM, Adaptive RED*