ABSTRACT

Traffic Control is one of Linux Operating System's feature used to manage data packet flow.Stochastic Fairness Queueing is one of classless packet scheduling algorithm in traffic control .This algorithm classify the incoming data stream using hash function and then bring out the output queue in round robin to reducing waiting time of packet queue.This algorithm is applied to manage data stream of VoIP application,file transfer with HTTP and FTP and expected to provide good QoS value for each application .

This final project create local area network using PC-based Ubuntu router to implement traffic control and analysis . This implementation is focused to QoS performance which consist of delay, throughput, and packet loss. These parameters would be basic points for comparing stochastic fairness queueing algorithm and first in first out algorithm.

The result of the implementation analysis performed on each of the scenarios show that the use of stochastic fairness queueing algorithm for voice applications and download using file transfer protocol is better then first in first out algorithms.This can be seen from the results of the analysis indicae that the usage of stochastic fairness queueing causes decreasing delay of 5% for voice packets, jitter reduction of 13.24% for voice communication and 7.7% for application download using file transfer protocol, increasing throughput of 8.75% for communication voice and 7.15 for applications download using file transfer protocol.

Key words : *Stochastic Fairness Queueing*, *First In First Out*, *Traffic Control*, **QoS.**