

Nowadays a *computer network* technology is commonly used in the universities, offices, schools, or government offices. It is used to make the time to be efficient in data transfer. Beside it was supported by the rapidly development of the network technology with an equipments that can support the fast data transfer, definitely in process of data transfer there will be a loss of the packet data or information, so that the retransfer is needed. *Bandwidth* as the most important media in the *computer network* has a limit in quantity, so it makes the *bandwidth* price be expensive. To support the need of the network service, the control of the data stream is needed or it is usually called as a *traffic control*. The aim of the *traffic control* is to control the data stream with a certain *bandwidth* allocation to give the guarantee quality of the network service (QoS = Quality of Services).

This last project will simulate the *traffic control* in the LAN network by using *Network Simulator 2* software for several *traffic control* methods which are First in First out (*FIFO*), Stochastic Fairness Queuing (*SFQ*) and Class Based Queue (*CBQ*). From this simulation is expected to be used in analyzing the performance of the *computer network*.

From the simulation that has been done the result is a queuing method of *FIFO* has a better quality network service than queuing method of *SFQ* and *CBQ*. It can be showed in a packet loss value from the output of those queuing methods. *FIFO* has packet loss about 12,386%, *SFQ* about 15,578%, and *CBQ* has a packet loss about 12,836%.

Key words: Bandwidth, Computer Network, Traffic Control, Network Simulator 2, FIFO, SFQ, CBQ