

ABSTRACT

Advances in technology and communication-based packet switches, prioritize performance and network packet switch utility. This technology makes the user can relate to each other with the appropriate quality of service standard. Network packet switch developed a method of forwarding packages such as MPLS. Communication quality based packet switch was strongly influenced by delay, packet loss, throughput and other parameters. Voice and video communication must be realtime and reliable, because it can support the user convenience in communicating. The usual method is done to increase the performance and the performance of a network such as Multi Protocol Label Switching (MPLS), Resource Reservation Protocol, and the use of the method of routing. Multi Protocol Label Switching (MPLS) is a method of forwarding data over a network by using information in the label placed on the IP packet.

With the routing method that is applied in MPLS, are expected to improve the performance and increase the value of QoS on the network. With the development of technology, MPLS offers the function of traffic engineering that disappear. The use of tunneling functions in MPLS-TE LSPS are based on who can create forwarding packages become more disappear. In the process of information delivery networks need to consider the method of the queue.

In this final task, the author compares the existing queue algorithms on MPLS network that is Class-Based Weighted Fair Queueing (CBWFQ) and Low Latency Queueing (LLQ) to get the best quality of service. From the results of testing performed on the network MPLS-TE with LLQ queue algorithms improve delay 91.99% on VoIP service, 53.02% on the Streaming Video service, and FTP service 84.95%. For jitter parameters obtained improve 83.53% for VoIP services and service for Video Streaming 49.67 %. Test results on the MPLS-TE network with CBWFQ queueing algorithm improve delay 72.64% on VoIP services, 47.22% on service Video Streaming, and 91.44% for the FTP service. And for jitter parameter obtained an improvement of 19.59% and for Video Streaming 48.11%. The use of the MPLS-TE can produce a better. QoS when using queue algorithm LLQ, can be seen from the throughput, delay, packet loss, and jitter. By using the network MPLS-TE has combined queue algorithm is better with MPLS-TE network without queue algorithm.

Keywords : MPLS, MPLS-TE, CBWFQ, LLQ