

## ABSTRACT

Quality of Service (QoS) is one of the most important things that must be considered in a communication system. Many considerations that need to be considered to obtain a good quality in a network. Provide large bandwidth is one alternative, but it becomes ineffective because the traffic is passed does not always have a large traffic value. To improve the network performance can use several methods such as differential service, resource reservation protocol (RSVP), multi-protocol label switching (MPLS), and the use of routing management.

Multi-Protocol Label Switching (MPLS) is a method of forwarding data over a network by using the information in the labels attached to the IP packet. With the type of routing is applied to the MPLS network, expected to be able to provide increased value of QoS to the network.

The results of this final task is, when the MPLS network using PIM-SM routing ; value of the maximum delay is 332.421 ms and the minimum value is 2.46 ms. Maximum Percentage of packet loss is 3.114% and the minimum value is 0%. Maximum throughput value is 445.4 kbps and the minimum value is 17.88 kbps. While the MPLS network using DVMRP routing ; value of the maximum delay is 341.803 ms and the minimum value is 2.549 ms. Maximum Percentage of packet loss is 3.114% and the minimum value is 0%. Maximum throughput value is 445.4 kbps and the minimum value is 17.88 kbps.

*Keywords : MPLS, QoS , PIM-SM, DVMRP.*