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ABSTRACT

Quality of Service (QoS) represents important matter which must be paid attention in a communications system. To many consideration which need to be paid attention in getting good quality value at network. Levying of big bandwidth represent one of alternative, but this effective matter becoming not because overcome traffic do not continually have big traffic value. To increase network performance able to be conducted by *Differential Service, Resource Reservation Protocol* (RSVP), *Multi Protocol Label Switching* (MPLS), and usage of management of routing.

Multi Protocol Label Switching (MPLS) is a method of data forwarding passes a network by using information in attached label at package of IP. With type of routing applied at MPLS network, expected can to give the make-up of value of QoS at network.

In this final task, compared to module of routing exist in network pass network simulation of MPLS. Routing the compared is OSPF (Open Shortest Path First), RIP (Routing Information Protocol), DVMRP (Distance Vector Routing Protocol multicast), and PIM-SM (Protocol Independent Multicast - Sparse Mode). Expected from this activity can be yielded a module of routing most efficient for application at MPLS network.

Result of analysis of simulation which is to be got that by applying routing at MPLS network, DVMRP routing assign value best performance at delay, package loss and throughput, while ugly happened at PIM-SM routing. OSPF and of RIP yield value of performance better of PIM-SM, but a few compared to lower of DVMRP.

Key word : MPLS, quality of service, integrated service, differentiated services, OSPF, RIP, PIM-SM, DVMRP, RSVP.