ABSTRACT

Quality Of Service (Qos) is represent the important thing which must be attention in a communications system. A lot of consideration which require being attention in getting good quality value at network. Wide Bandwidth is one of alternative, but this matter is not effective because traffic overcome not continually in big value traffic. For increasing network performance can be conducted by differential service, resource reservation protocol (RSVP), multi protocol of label switching (MPLS), and use of routing management.

Multi-Protocol of Label Switching (MPLS) is a method of forwarding data through a network by using information in label attached at packet IP. With the type of routing applied at network MPLS, expected able to give increasing of value Qos at the network. Since request of information transfer through internet increasing, MPLS network offer the efficient function traffic-engineering, so that requirement of MPLS VPN also mounts swiftly. BGP (Border Gateway Protocol)/ MPLS VPN is a kind of VPN IP-BASED giving amenity in extending location of customer because has link of peer to-peer of between router PE (Provider Edge) and router CE (Customer Edge) at customer. BGP / MPLS VPN have the advantage offering function of traffic-engineering to personal network.

In this final task, MPLS-VPN will be implemented in small network and use GNS3 as MPLS Router. The result from this implementation is expected to be able to to describe how the MPLS-VPN technology works.

From the implementation in laboratory, the result is MPLS-VPN can make QoS better. Seen from result throughput, delay, packet loss, and jitter which got from network using technology MPLS-VPN is better than network OSPF without MPLS.

Keyword : MPLS, MPLS-VPN, OSPF, BGP