ABSTRACT

Today's communication system growth is able to develop network system to carry various traffic such as voice, video, and data with different packet size each. In order to find out this communication system ability and quality,it need to evaluate the QoS (Quality of Service) of network. Many considerations that need to be observe in order to get good quality in the network. Provide more bandwidth is one of many alternative, but this is not increase network effetivity, because traffic which across the network is not always big. Increase network performance is able by doing improvement such as differentiated service, resource reservation protocol, multiprotocol label switching, and routing management.

One of network technology growth is MPLS, this technology has forwarding method across another network using information in label which is stick on IP packet. By using OSPF routing in MPLS network, MPLS is expected to increase network QoS. One of MPLS service is VPN (Virutal Private Network). This service implement a network across another network which is bigger and usually provide rent and security service to provide that network.

Traffic engineering is an extension that is able to make VPN MPLS more efficient. By using VPN MPLS TE, befor packet deliver to destination there is a mechanism to evalulat network condition, how is the bandwidth condition, wether link is full or not, then do the route mechanism.

This project do analysis about how much MPLS TE affected VPN QoS performance and compare it with VPN that only using MPLS with video traffic and background traffic which has variated length. Network QoS performance parameter which will be analized is delay, jitter, packet loss, and throughput.

Keyword: MPLS, MPLS TE, MPLS TE VPN, OSPF, delay, jitter, packet loss, throughput