ABSTRACT

In an advancement era of information and communication technology that is increasingly rapidly, the need for IP-based multimedia services is even higher. Examples of IP-based multimedia services that are most widely used today are voice and video communication.

In providing these services, separate internet networks must also be able to be built and connected to each other so that customers can send and receive data traffic without having to think that some providers or networks are involved in transporting the data packet delivery. In MPLS networks, there are several methods to meet these needs. One of them is the MPLS VPN Inter-AS (Autonomous System) method.

In this Final Project the implementation of IMS services in the form of VoIP and Video Call has been carried out on the Inter-US MPLS-VPN Back-to-Back VRF network. Comparisons are made with other Inter AS methods in 0, 1, 5, 10, 20 Mbps background traffic.

The test results show the throughput value is inversely proportional to the value of the background traffic. The throughput value of VoIP services decreases from a value of 0.08576 Mbps to 0.06265 Mbps and decreased by 0.6802 Mbps to 0.5806 Mbps in video call services. In both services, the average jitter value is $\ll$ 1 ms and the delay is <150 ms. And obtained packet loss value from both services in both methods entered into a feasible category for 0 Mbps, 1 Mbps and 5 Mbps background traffic.

Keywords: MPLS-VPN, Autonomous System, OSPF, VRF, VPN.