ABSTRACT

In general user usually uses a public network or a network that was created by the Internet Service Provider (ISP) to communicate with each other. Problems found in the ISP's network, the lack of security and QOS are awake. To overcome this there's a tunneling technology but, on this technology there's a shortage on the complexity of the backbone network that is used and supported by tools that have a high price.

To satisfy this need comes the technology to cover the tunneling technology is Virtual Private LAN Services (VPLS). VPLS is a network where multiple ethernet LANs from different customers for each location connect via a network service provider (service provider), thereby emulates a single Ethernet LAN segment for these customers. This technology allows the user a different geographical location can communicate as if in a private LAN network. To support the reliability of its network added also features Traffic Engineering Tunnel on the VPLS network that offers functionality that generates the LSP based packet forwarding become more efficient and to provide availability services also contribute to integrated server OpenIMSCore to enrich the multimedia service availability to completed the NGN technology.

In this final project, the author implements VPLS-TE tunneling on Mikrotik Router. The test result of adding TE Tunnel feature on VPLS network show improved 72.1% in delay for VoIP service and 63.65% for video call. For throughput parameter showed a improved 1.83% for VoIP service and 10.4% for video call.

Keywords : *VPLS, VPLS-TE TUNNEL, LAN, OpenIMSCore, QoS.*