

ABSTRAC

The developments in internet access mode on a network can be ensured that access to the internet in a client an Internet Service Provider (ISP) through many routers, bridges, node or connection of a third party. If these events occur, then the route would have long since past many routers, bridges, nodes from third parties, etc. Implementation of an Internet-based public wireless networks on the Internet Service Provider (ISP) with heavy traffic, greatly affects the performance of a network that includes sending and receiving data in the past a lot of the route to be taken by the end-to-end user. So, it needs a virtual route so that the route can be reduced.

In this final assignment, implemented a protocol is Ethernet over IP Tunnel is equipped with a VPN (Virtual Private Network) / PPTP (Point to Point Tunneling Protocol) Tunnel, a method of making a virtual network service that refers to the development and utilization of the network tunnel on CDMA (Code Division Multiple access) network which is run in the VPN / PPTP tunnel to access the security system between the existing network. In this implementation, analysis services on aspects of QoS (Quality of Service) with parameters delay, jitter, packetloss, throughput is related to the intensity of the role of Ethernet over IP Tunnel Protocol in MikroTik RouterOS™ on the network performance while running. Analysis is performed based on the results of trials such as 3CX phone VoIP service with some variance existing background traffic with CDMA network infrastructure.

From the result of research, showed that the implementation of the protocol is able to increase the value of QoS EoIP be better made by the method of tunneling over the public internet network on two separate networks to the public internet. VPN / PPTP tunnel with encryption functions can perform well on network implementation EoIP tunnel.

Keyword : *Ethernet over IP,VPN/PPTP Tunnel, Virtual Rute, IP Public, VoIP*

