ABSTRACT

The necessary of qualified and realible video and voice communication service is very needed to the recent telecommunication system, especially a communication in VoIP (Voice over Internet Protocol). In VoIP network, voice or video conference communication is converted into the shape of digital data that passed in a data network (internet). That means, voice and video need a routing from sender client in order to reach a receiver client in a real-time.

One of the device who responsible for voice and video routing is a router. To support real-time communication, needed a VoIP configuration with router which have good level of reliability, thus the real-time communication is able to occur optimally. And one of the way to make it happened is by implementing VRRP (Virtual Router Redundancy Protocol) in each router who involved in VoIP network. VRRP is a protocol who has responsibility in routing faling-over in a Local Area Network. By implementing VRRP, when a router who act a master router facing a disruption or performance descent, so VRRP enables to manage data packet routing mechanism, thus data flow can be routed into backup router which have been prepared prior.

In this final project will be built a VoIP network configuration using Asterisk server then integrate it with VRRP router which act as a virtual router that separate aterisk server with client locating on a different network area. After that, this final project will analyze the QoS (Quality of Service) performance of VoIP network when the router who act as a master is shutted down. For router function in this VoIP network's VRRP implementation will be used PC router who installed with Mikrotik operating system. PC router is a comon PC (Personal Person) who functioned as a router with by adding two LAN cards and an operating system to do routing.

Keywords : *VRRP, VoIP, PC router, Asterisk, Mikrotik*