ABSTRACT

Technology is increasingly evolving, especially with network technology. One form of network technology development is virtualization. Where resources are made into virtual (virtual) resources. Some resources that can be virtualized include hardware, data storage media, operating system (OS), networking, the list will continue to grow.

One implementation of virtualization is Network Function Virtualization (NFV) where network services are designed, managed and distributed by separating network functions from proprietary hardware. In this final project will be built VNF (Virtualized Network Function) in the form of routers, namely the Mikrotik and Juniper routers above the VMWare ESXi hypervisor, which then the VNF will be tested for its performance when it is run in the form of video streaming (offline) and FTP (File Transfer Protocol) . The purpose of this final project is to find out the results of VNF (Microtic and Juniper) performance that is run on the VMWare ESXi hypervisor by using the QOS parameters.

FTP and Streaming Video services can be run on Hypervisor VMWare ESXi. In testing video streaming as traffic load increases, the resulting throughput value tends to decrease. In packet loss parameters, both virtual routers do not meet the ITU-T G.1010 standard when the traffic load increases by 50 to 90 Mbps because it is worth more than 1%. On FTP service testing, the delay results from both virtual routers still meet the ITU-T G.1010 standard, which is below 15 seconds. The packet loss parameter found missing data when the traffic load increased by 90 Mbps on the Mikrotik virtual router and traffic load by 80 and 90 Mbps on Juniper virtual router, which means it does not meet the ITU-T G.1010 standard. Microtik virtual routers tend to produce better value than Juniper virtual routers for video streaming and FTP services.

Keyword : *Virtualization, VNF,* Mikrotik, Juniper, *hypervisor* VMWare ESXi