

## **ABSTRACT**

*The high of human needs for networking today require the telecommunication operators to improve their quality of service provision. One of its development is virtualization, which is a technology that turns any device (physical) into virtual function. Virtualization technology has the flexibility, security, ease of configuration and management, and also inexpensive cost. One of the virtualization technology that is being developed is VMware ESXi hypervisor. In the development of virtualization, emerged a new paradigm called Network Function Virtualization (NFV). NFV is a new concept to define, create, and manage a network by replacing the function of networking devices with software and automation.*

*This final project discussed about the development of VNF Juniper router that runs on a server using VMware ESXi hypervisor, by comparing the VNF's services on video streaming and FTP. This final project research aims to determine the performance of VNF Juniper router with throughput, delay, jitter, packet loss and vCPU Usage parameters.*

*From the result, can be concluded that the VNF Juniper router has a good QoS performance. It can be proven by the result of the performance test on video streaming service that the VNF has about 3,27 of indeks value which is can be defined as "Good Performance" qualification and compatible with the TIPHON standard. When it was run on FTP service, the result showed that the quality of QoS performance has a "Very Good Standard" conform the TIPHON standard. It can be proven by the total of packet loss in the amount of 0%.*

**Keywords :** Network Function Virtualization, Virtualization, VNF, virtual router, hypervisor ESXi, QoS.