ABSTRACT

In the first conventional network, dynamic routing is the most important to manage a network. A network engineer must to individually configure every intermediate device on network infrastructure. Then came a concept or new paradigm in design, manage, and implementing network called Software Defined Network (SDN). Basic concept of SDN is explicitly separate between control plane and data plane which in conventional network control plane and data plane are in one device. OpenFlow is one of component in SDN architecture which is used for communication protocol between control plane and data plane. Routing Information Protocol v2 (RIPv2) is the develompment of RIP which is the first IPv4 routing protocol that used distance-vector algorithm (Bellman Ford).

In this final project, simulation and implementation to know the performance of the RIPv2 routing protocol on small scale SDN network used mininet emulator as a simulation and TP-Link WR-1043ND v2 as a implementation. Controller that used in this final project is POX installed on Ubuntu 12.04 in VMware as Virtual machine and apply RouteFlow conventional routing. Routing Protocol used in this simulation and implementation SDN network is Routing Information Protocol v2 (RIPv2)

In this final project the result of testing performance of implementation routing RIPv2 on SDN network used RouteFlow as controller showed that convergence time value for simulation is 14,32 second dan 15,32 second for implementation. The value of QoS on simulation is 100,21 Mbps for throughput, 47,43 *ms* for delay, 0,018 *ms* for jitter, and 0% for packet loss. While on implementation is 99,94 Mbps for throughput, 63,38 for delay, 0,332 for jitter, and 0% for packet loss.

Keywords : sdn, rip, pox, *RouteFlow,* tp-link wr-1043nd v2