

ABSTRACT

Internet network is one of the computer network system technology that is currently growing rapidly, to build an Internet network, it takes a technology called routing, because routing is a major part in providing a performance in the network. To larger the Internet network system, then the routing configuration will be more complex, the control section will be more complicated, inflexible and difficult to manage. Software Defined Network (SDN) is a network paradigm where the control plane is separate from the data plane, making it easier for us to configure on the control plane side. With the SDN is expected to run methods that exist on conventional networks such as IP forwarding and routing.

In this final project, network simulation Software Defined Network with RouteFlow RouteFlow Open Shortest Path First (OSPF) routing protocol, as well as transmitting packets with UDP protocol from sender to receiver, and a network path termination scenario to prove OSPF routing performance. The proof is done by doing a network simulation, which consists of 5 switches that are connected to the control plane device as a network controller using the POX controller, and connected to the forwarding plane using a mininet emulator, whose performance Quality Of Service (QoS) is measured using iperf.

The result of OSPF routing performance testing on RouteFlow-based SDN network shows that QoS value with total 128Kbps package in SDN simulation is 2.1 Mbps for throughput, 0.06708 s for delay, 0.0825 ms for jitter and 0% for packet loss, -rata time convergece for SDN simulation is 3 seconds, and the addition of Background traffic of 25Mbps, 50Mbps, 75Mbps, 100Mbps, and 125Mbps.

Keywords: mininet, software-defined network, OSPF, RouteFlow, UDP, POX, QoS, iperf