ABSTRACT

With a lot more research on Software Defined Networks (SDN) providing innovations made to facilitate network users. The problem of traffic density in SDN networks can be solved by planning made network traffic at the OSI layer to improve network performance at certain traffic. The Intent Monitor and Reroute (IMR) service provided by the Open Network Operating System (ONOS) controller can be used to maximize the use of each link on an SDN-based network.

This final project analyzes the quality of SDN networks using IMR on the ONOS controller version 1.14 which can be understood on OS Ubuntu 16.04 in the vitualbox hypervisor. This research was conducted by providing two scenarios, namely providing a number of different switches in each topology imposed and adding traffic to each topology of 8 switches, 10 switches and 12 switches. The parameters measured in this study are bandwidth usage and service quality parameters (QoS).

The results of the efficient use of bandwidth on each topology with an average of 5 Mbps background traffic is 4.9 Mbps, for 10 Mbps background traffic is 9.3 Mbps. And for background traffic 15 Mbps is 9.5 Mbps. QoS testing on each topology results in an average delay of 150-300Ms. Data throughput on each topology shows the higher the background traffic provided, the greater the value of the throughput with a value> 1,200 Kbps. From each test carried out, the packet loss result is 0% for the use of background traffic of 5 Mbps and 10 Mbps. At the time of 15 Mbps traffic, there is a packet loss of 0,000684% on the 8 Switch topology, and 0.00100% on the 10 Switch topology and on the 12 Switch topology shows a packet loss of 0.00155%. The conclusion from this study shows that IMR can be used in every topology because it has effective bandwidth usage and good quality.

Key Word : ***Software Defined Network, Intent Monitor and Reroute,*** **ONOS,** ***bandwidth, Quality of Service, delay, troughput, packetloss*****.**