ABSTRACT

The rapid development of the Internet of Things (IoT) and the use of IoT in parallel with human life have made increasing the number of IoT devices and varieties. This affects the needs of management in the system, especially on controlling the traffic on the network when sending IoT data.

Software Defined Network (SDN) comes with the concept of separating the control plan from the data plane, so that the control function becomes centralized. As such, SDN provides the flexibility to configure and provides policy management services. This makes the use of the SDN architecture very useful for controlling the dense of IoT data traffic. Open Network Operating System (ONOS) is an SDN controller implementation that provides scalability, high performance and high availability.

This final project analyzes the implementation of internet of things network data control on SDN using the Open Network Operating System (ONOS). By using OpenvSwitch (OVS) as an SDN switch, performance testing was carried out with parameters of delay, jitter, throughput, packet loss also CPU & RAM usage.

The results obtained in this final project can be concluded that the performance of implementation internet of things network data control on SDN using the Open Network Operating System (ONOS) is in a good category for delay parameters based on TIPHON and ITU-T G.1010 standards. The packet loss value is 14.5% when there is an additional 100 mb of background traffic. Meanwhile, the result of throughput value has a decrease compared to the value of background traffic. By using the VM as a switch SDN, the result of RAM usage is 23% - 28% and CPU usage is 1,3% - 6,5%.

Keywords: Software Defined Network, Internet of Things, ONOS