ABSTRACT

Currently the process of monitoring and maintenance of network devices such as routers and switches in government agencies is done the majority still manually or using paid software or opensource. Software Defined Network (SDN) is a new concept in computer network where the control plane is separated from the data forwarding function (data plane) so that in the network architecture of SDN, the controls are centralized and do not need much configuration on each network device. This concept can be used in real network to facilitate network administrators in configuring the network in the control plane, as well as using network orchestration technology that is real-time data visualization to perform network device monitoring.

In this final task is implemented Platform implementation Opensource Router and Switch Device management on network SDN. SDN network proof is carried out on a device consisting of two routers Mikrotik RB951G-2HnD, one piece of router Mikrotik RB751G-2HnD and two switches TP-LINK WR1043N v5 as Switch Openflow, Routeflow that functioned as Control Plane, and monitoring the device in SDN network using Opensource Software namely Grafana Server as Data Visualization, and using InfluxDB and Telegraph as Data Collector.

Result of this final task is Server Monitoring can display router device parameters and switches such as CPU Load Router, Uptime, Status Port, Router and Switch Throughput graph, and can send Notification Alert from Monitoring Server to Handphone. As well as the results of the test performance of the SDN network showed that the value of QoS on the implementation measured by Iperf namely, 90.25 Mbps for throughput with TCP protocols, 0.13015 s for delay of H2, and 0.2128 s from H3, 2.9354 ms for Jitter, and 0% for packet loss, and Convergece time value 2.075 seconds.

Keywords: *SDN,* data_visualization*, data_collector ,monitoring*