ABSTRACT

This study analyzes the comparison of SDN performance using the RYU controller and the Opendaylight controller. The protocols used are TCP and UDP protocols while the routing uses OSPF. The implementation of the dijkstra algorithm from OSPF routing to full mesh topology at SDN will measure its performance based on Quality of Service parameters, namely delay, jitter, packet loss, and convergence time. In this study, there are two test scenarios, namely the TCP & UDP delivery. The results of the TIPHON standard QoS delay <150 ms TCP delivery & the best performance delay is on ryu with a value of 6.6 ms (very good) and 0.97 ms (very good) while the ODL controller gets a value of 7.2 ms (very good) and 62 ms (very good). QoS jitter results with TIPHON <255 ms standard TCP & UDP best performance on the ryu controller with 0.029 ms (very good) and 0.490 ms (very good) while the ODL controller got 0.097ms (very good) and 314.836 ms (very bad). The results of QoS packet loss with TIPHON standards <26% TCP & UDP best performance on the ryu controller with a value of 0% (very good) and 8% (very good) while the ODL controller gets a value of 0% (very good) and 24.94% (very good). The results of the comparison of the time convergence with the RYU controller line disconnection resulted in a shorter time than the Opendaylight controller with a time difference of 1.5 s.

Keywords: *controller, UDP, TCP*