

ABSTRACT

Software Defined Networking is a network that can be managed to be more centralized because it separates the control plane and data plane. This study analyzes the performance of OSPF routing using the RYU and POX controllers on SDN. OSPF routing is an IGRP type routing protocol that can only be run on the internal network of an organization or company. The implementation of the Dijkstra algorithm from OSPF routing to the fat tree topology on SDN will be measured its performance based on Quality of Service parameters, namely delay, jitter, and packet loss in scenarios without background traffic. Measuring is done by sending traffic in the form of packet transmission control protocol (TCP) and User Data Protocol (UDP). In the experiment, the result is that when using the RYU controller it is better for TCP and UDP protocols because it has a delay value of 2.0786 ms, 0.16 ms, jitter of 0.011 ms, 0.039 ms and packet loss of 0%, 6.89%. While the pox controller is very good for the TCP protocol because the packet loss is 0%, the pox controller for the UDP protocol is highly discouraged because it has a value of 33.94% for data transmission in packet loss.

Keyword : *Software Defined Networking, Routing OSPF, Ryu controller, Pox controller, fat tree topology*