

## ABSTRACT

Software Defined Network (SDN) is a new concept in computer networks where the network control functions (control plane) is separated from the forwarding function data (data plane) that were previously in the conventional network control plane functions and function data plane still in one device, so in a network architecture SDN, then control become centralized and in the network architecture SDN called Controller. Routing configuration is a way to build a network of the internet. The larger the network, the more the device is needed and also needed a lot of configuration process.

In this final Project has been done implementation Network Software Defined Network with OSPF Routing and POX as Controller. Authentication network SDN performed on a device that is composed of 5 pieces of devices forwarding Plane consisting of two router Mikrotik RB 951Ui-2HnD, 2 TP-LINK WR1043N, 1 piece of TP-LINK Archer C20 AC750 as Switch Openflow, and TP-LINK has been installed OpenvSwitch connected with a Laptop that has been installed in a VMware controller POX serves as a Control Plane.

The results of testing the performance of application routing OSPF on network SDN RouteFlow indicates that the value-based QoS implementation as measured by iperf i.e., 87.98 Mbps throughput with Protocol to TCP, a 0.1144 s for delay, jitter, ms to 0.1607 and 0% packet loss, and the value of time convergence 1.82 seconds for the implementation.

**Keywords: SDN, openflow, ospf, router, pox controllers, routing**