

ABSTRACT

Software Defined Network (SDN) is a new platform in the network configuration that allows administrators to perform maintenance on a network traffic centrally without access directly to network devices or switches. In addition SDN also use OpenFlow protocol that allows the network to use the devices of a variety of vendors and it is open for the operation or development. SDN separates the network into two layers, controller layer and forwarding layer. Controller layer is used for regulate all traffic on the network such as traffic, routing, scheduling etc. While there is a forwarding layer switch that just for stored and forward to deliver a packet according to the instructions of the controller.

With the implementation of OpenFlow protocol in SDN then there is an opportunity to apply flow based routing in SDN network for the data distribution from source to destination. This final project performe an analysis of the SDN network performance by implementing Link State Intermediate System Intermediate System (ISIS) routing use djikstra algorithm. RouteFlow is used as a regulator by using OpenFlow controller POX which uses python programming language to control the traffic on the SDN network.

The network topology is simulated in mininet. Simulation results measured the level of network performance with the Link State ISIS implementation. Analysis of network performance use some QoS parameters such as throughput, delay, packet loss and jitter. Controller device performance also used in this testing.

Keywords: Software Defined Network (SDN), OpenFlow, RouteFlow, POX, Link State ISIS, QoS.