

ABSTRACT

Nowadays, internet has become one of the public's most important needs in Indonesia. And one of the newest concept of future networks that currently being studied is Software-Defined Network (SDN). On SDN, the control plane and data plane of the network is separated, where the control plane is placed on the network's controller, and the data plane is still on the switch, so network centralization can be happening. There are a lot of controller that SDN can use, two of them are POX and Ryu. Because there are so many controllers, therefore, to make sure that the result are maximum, the controllers need to be compared to each others. The purpose of this research is to find out which one between POX and Ryu, that can produce the maximum Quality of Service, by testing them using Mininet.

This research will be done on Mininet emulator by comparing network performances while using POX and Ryu as controller. There will be three scenarios using 4, 5 and 6 switches that are connected to 2 hosts each. The topology will be using 100 Mbps bandwidth traffic on each scenario, also 100 and 200 Mbps background traffic. Research data will be collected using D-ITG.

The results of this research is that Ryu has 67% lower score on delay and 2,94% lower score on jitter than POX. Meanwhile, POX has 3,57% higher throughput score than Ryu. On packet loss, Ryu didn't experience any packet losses, meanwhile POX still has packet losses on scenario 1 and 2.

Keywords : *Software-Defined Network, QoS, Mininet, D-ITG, delay, jitter, throughput, packet loss.*