

**ABSTRACT**  
**IMPLEMENTATION AND QUALITY OF SERVICE ANALYSIS OF RYU,  
ROUTEFLOW, AND FLOODLIGHT CONTROLLER IN SOFTWARE  
DEFINED NETWORK ENVIRONMENT**

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*Choosing the right controller to be implemented in an SDN-based network is very important. This study compares the performance of three SDN controllers (Ryu, RouteFlow, and Floodlight) with the QoS delay, jitter, and packet loss parameters.*

*Network simulation is done by emulator. Mininet by using two different topologies. The controller and emulator run in separate virtual machines. The test scenario that is run is to measure QoS. The experiment was conducted by trying UDP traffic on topology using D-ITG (Distributed Traffic Generator), with several scenarios using different traffic using iperf. The results discussed are QoS values obtained by running background traffic, and the contribution of background traffic to the delay, jitter, and packet loss obtained.*

*After measuring QoS, the results are obtained when running data services, the three controllers show similar performance, while when running VoIP services, the Floodlight controller looks superior to other controllers.*

*Key Words: SDN, Mininet, Quality of Service, Ryu, RouteFlow, Floodlight*