

## Abstract

*Security on the network is important, the more secure network is better. In the network model research SDN still needed, particularly in the security (security), especially on the right of access and monitoring packet. One of solution that can be used is to use a firewall. Firewall is one method that can be used to secure data traffic and access rights in a network. With the application firewall on the SDN on network security models will be safer, will be able to monitor incoming and outgoing packets and user access rights can be determined.*

*In this final project will be the implementation of the firewall by using the controller floodlight using whitelisting approach. This experiment is to test the application firewall with a scenario that has been made and the QoS of the network when using a firewall and not using a firewall, QoS testing parameters in this study is the latency, packet loss, jitter and throughput.*

*From the results of tests performed, the effect of QoS firewall against the SDN network model with four parameters are as follows. Average latency for data service 33,382 ms before firewall and after firewall 34,369 ms, video service 56,186 ms and 56,807 ms, VoIP service 41,062 ms and 41,371 ms. Average jitter for data service 0,532 ms before firewall and after firewall 0,586 ms, video service 1,305 ms and 1,336 ms, VoIP service 0,594 ms and 0,615 ms. Average Packet loss for data service 4,098% before firewall and after firewall 4,36%, video service 28,530% ms and 30,768%, VoIP service 4,088% and 4,698% and average Throughput for data service 36,929 Kbps before firewall and after firewall 36,888 Kbps, video service 3649,08 Kbps and 3645,11 Kbps, VoIP service 70,041 Kbps and 69,610 Kbps.*

**Keyword:** *Software Define Network (SDN), Firewall, Privileges, Floodlight, Whitelisting*