

Abstract

SDN network already have firewall features to protect access to the local network from outside threats. However, the firewall still stateless. The main drawback of stateless firewall is not able to store the information from the packet are checked (no connection tracking). It slows the flow of packet processing to the table. The effects of the slowdown resulted in a decrease in performance, for example, the throughput to be down, the value of delay increases. To overcome these problems needed a stateful firewall that can store information packet (connection tracking) and then add the information to the flow table. Both firewall adding flow entries for each inspection of packet to anticipate upcoming traffics. Tests carried out using mininet as emulators and Ryu as a controller for comparing the performance of both firewall. From the test results, it was found that the stateful has a throughput value of 8813 pps, rtr of 5.7 ms and packet loss of 1%, while the stateless has a throughput value of 8402 pps, rtt of 6.6 ms and packet loss of 2.3%. And in terms of security, a stateful firewall can be more reliable than the stateless firewall.

Keywords: SDN, Flow Table, Stateless Firewall, Stateful Firewall.