Abstract

Computer network system that has been used widely is very important to be maintained in order to maintain its optimal performance. Optimal performance is defined as a system that has a good Quality of Service (QoS): low round-trip time (RTT), packet loss, and jitter. One of the development of the network system is software-defined network (SDN). SDN is a network architecture that separates between the control plane (controller) with data plane (switch, router, hub) and the network device can be set with any software brand device. To improve the security of the SDN system, a firewall is used.

Packet filtering firewall that will be discussed in this research filters the packet by dropping packets based on rules that have been set. Packet filtering has two types of filters, namely: stateless filter and stateful filter. Different process occurs on each filter, and affects the system performance.

Therefore, to learn how big the influence of the process that occurs on each of the two pieces of the filter, and to find out which filters are most appropriate for the system that requires optimum performance, in this research the testing simulation of stateful and stateless filter on SDN will be done using QoS as its performance parameter

The results obtained from the analysis of the test results show that the stateful filter has better performance with lower RTT of 10,51% and lower packet loss of 70% making it suitable for use on systems that require optimal performance.

Keywords: stateless, stateful, firewall, SDN