ABSTRACT

In the development of technology, a network architecture is needed that can increase effectiveness and efficiency. Software Defined Network (SDN) is a new network architecture created to increase the effectiveness and efficiency of the previous network architecture. Software Defined Network has a concept to facilitate network configuration by creating a control that must be done. The development of the Software Defined Network (SDN) model and its application to multi-tenant networks, poses many security challenges and requires secure isolation. This study aims to apply network slicing to a Software Defined Network (SDN) network for topological isolation and the author presents an analysis of the application of network slicing using FlowVisor to strengthen the isolation of each silice. This study performs several test scenarios to measure network quality on a Software Defined Network (SDN) topology, including connectivity testing, functionality testing and strong isolation testing. And the results of each test scenario are Quality of Service (QOS) values with parameters Throughput, Delay, Jitter and Packet Loss on the Transmission Control Protocol (TCP) and User Data Protocol (UDP) packets. The results of the Quality of Service (QOS) test in all test scenarios with parameters Throughput, Delay, Jitter and Packet Loss and from all parameters get the value results in index category 4 which is very good according to the TIPHON standard. The results of the resource utility test in CPU usage are 79% on connectivity testing without applying slicing and 89% on functionality testing with applying slicing. For memory usage, that is 76% for connectivity testing without applying slicing and 83% for functionality testing using slicing. From these results, the resource utility test is stated to be greater by applying network slicing. Each test proves that using FlowVisor and POX Controller can apply network slicing on the SDN network and create strong isolation from each silice.

Keywords- ***Software Defined Network (SDN), Network Slicing, FlowVisor****,* ***Quality of Service*** **(QOS),** ***Controller.***