ABSTRACT

In communicating between data centers, the limited isolation space will result in a decrease in network quality, therefore technology is needed that can ensure data security in the network isolation process. There is an overlay network technology that can maximize the physical network architecture by building a virtual network. The overlay network formed using the Virtual Extensible Local Area Network (VxLAN) tunnel protocol has a multi-tenant concept, with scalability of up to 16.7 million VLAN ID segments, and Ethernet Virtual Private Network (EVPN) integration is used to carry layer 2 and layer information. 3 simultaneously. In this study, it is implemented via external Border Gateway Protocol (eBGP) routing with Open Network. Network quality measurement is done by sending User Datagram Protocol (UDP) and Transmission Control Protocol (TCP) traffic protocols in a scenario without background traffic and using background traffic. Data testing scenario 1 without background traffic shows the use of an average throughput of 8.88 Mbit / s, an average delay value of 15.44 ms, and an average jitter value of 3.754 ms. Test scenario 2 using background traffic shows an average throughput use of 15,130 Mbit / s, an average delay value of 35,350 ms, and an average jitter value of 6.80 ms. The increase in each parameter value in each scenario is influenced by the increase in data size and background traffic. In both scenarios, the results of each Quality of Service (QoS) parameter show that in the process of sending traffic using the UDP protocol is better than using TCP, and the average final test results vary by 20-30% in each scenario. Based on TIPHON standardization, the measurement of each QoS parameter by changing the size of the data and background traffic is considered good.

Keywords: VXLAN-*EVPN, Overlay network,* FR*Routing, BGP.*