

ABSTRACT

In this research, performance analysis was carried out on the Ryu and Opendaylight Controllers using Quality of Services (QoS) as the test parameters. This research aims to know which controller who has the best performance, which the parameters that will be tested were throughput, packet loss, delay and jitter. QoS testing is carried out using the Distributed-Internet Traffic Generator (D-ITG) as the test method. This test was performed with TCP traffic and provided variations to traffic loads ranging from 50 MB, 100 MB, 150 MB, and 200 MB. The provision of traffic load has a great influence on the results of the tests to be carried out. The greater the traffic provided, the denser the network condition will become. After doing the test, the results obtained that Ryu had a better QoS value compared to Opendaylight. The standard of testing performed for QoS parameters is TIPHON standard (1999). For throughput, a very good throughput category is worth >1200 Kbps, and the average throughput result obtained from Ryu is 435.159.11 Kbps, while Opendaylight has an average value of 250.866.49 Kbps. For packet loss, a very good packet loss category is by 0%, the average for packet loss value in Ryu is 0.02% while Opendaylight is 0.03%. For delay, a very good delay category is by <150 ms, and the average obtained for delay value in Ryu is 0.0002 ms while Opendaylight has an average delay of 0.007 ms, and the last test is jitter, for jitter, a very good jitter category is by 0 ms, and the average value obtained in Ryu is 0.00004 ms and the jitter value obtained in Opendaylight is 0.0009 ms.

Key Words: Software Defined Network (SDN), Ryu Controller, Opendaylight Controller, Quality of Services (QoS), Distributed-Internet Traffic Generator (D-ITG)