ABSTRACT

In traditional networks, the use between control plane and forwarding plane becomes one. Network design like this is considered to be less flexible in controlling and managing the network. There is a network system that is considered more effective than existing conventional networks called Software Defined Network (SDN). SDN serves to separate explicitly between the control plane and the data plane so that there is better network management. With this systematics network management will be better and more flexible through programmable controllers.

There are many types of controllers using different programming languages. Some controllers use the Java programming language and some use the Python programming language. In this test, the controller used is a controller with a java programming language. The controllers used are Floodlight controllers without Johnson algorithm, Foodlight with Johnson algorithm and OpenDaylight. These three controller models will be tested for their performance using QoS parameters with ITU-T G.1010 standardization.

The results obtained by the Floodlight controller without the Johnson algorithm are superior to the other two controllers for data and VoIP services. But for sending video services, OpenDaylight controllers are better than others. Because only OpenDaylight controllers can send video packages. For testing resource utilization, the highest memory consumption is owned by the OpenDaylight controller. Based on the ITU-T G.1010 standardization of Floodlight controllers without the Johnson algorithm, Floodlight using Johnson and OpenDaylight algorithms only meets the delay standard for data services only.

Keywords: Controller, Performance, Floodlight, OpenDaylight, QoS, Resource Utilization