

ABSTRACT

There are some deficiencies on the implementation of distributed controller (active-backup) architecture in SDN network, such as limited load on the controller. If the controller is overloaded, the performance of a network decreases so that the architecture does not have the ability to manage a larger network. This will affect the reliability and scalability of the network. Therefore, a solution is needed to overcome this problem. This study proposes distributed controller (active-active) method. This architecture allows all active controllers to work together to manage a network simultaneously. Based on performance comparison tests between distributed controllers (active-active) and distributed controllers (active-backup), it can be seen that distributed controllers with active-active methods affect network performance with a throughput difference of 7.9% greater by using background traffic. In CPU usage testing, distributed controllers (active-active) gets a number 9% lower than the distributed controller (active-backup). Whereas, in failover-time testing on distributed controller (active-active) gets 19.75 faster than the distributed controller (active-backup). Based on the results of the test, it can be concluded that the distributed controller (active-active) affects the reliability and scalability of the network.

Keywords: SDN, throughput, CPU usage, failover time, controller