

## **ABSTRACT**

*As time goes on, there are more and more internet users on this earth. The more internet users, the more devices connected to the network. The need for resources that can accommodate the number of connected networks. In this regard, the use of Spine and Leaf architecture using Software-defined Network on data resources is very useful.*

*The use of Software-defined Network architecture on resources is very useful than the use of traditional (conventional) architectures. The Software-defined Network architecture is expected to be able to provide better QoS results than the previous architecture. The Spine and Leaf Data Center architecture is applied to an ONOS SDN controller. Better QoS results are expected to occur in the Spine and Leaf architecture. Testing using parameters Latency, Throughput, Packet Loss, etc.*

*Based on the results of the tests carried out, it was found that the performance of the SDN Controller architecture was superior to the conventional architecture. The performance is obtained by comparing the Quality of Service results from each architecture. Each architecture gets a good Quality of Service value, but if you compare the values obtained, the SDN Controller architecture is superior to the conventional architecture.*

**Keywords:** *Internet, Spine and Leaf, Data Center, SDN Controller, ONOS, QoS*