

## ABSTRACT

Network systems today have some problems in the configuration, maintenance, and control network devices are very large. One solution is the use of software systems Define Network (SDN). Service computing platform that supports and SDN is OpenStack. OpenStack is a smart cloud capable of providing service control, configuration and maintenance and management more efficient and reliable. This makes the author's interest to analyze and implement OpenStack.

OpenStack system is an answer to the problems of maintenance and management of network devices are very much in control. OpenStack-based OpenSource. Some of the services contained in the OpenStack is a service compute, storage, and identify the network. Service OpenStack is built from multiple platforms such as Horizon, Nova, Icehouse, Swift, Cinder, Glance, Keystone, and Neutron (network service).

The design of the author of two control model compute servers with one server controller. Service network will contribute more in control of all the compute servers, provide the address ip address automatically to each virtual server on each server compute, maintain network security with firewalls and security group to run the service layer 3 on each compute node.

Tests using two different types of networks are LAN network and MPLS. Tests were conducted involving five users. The first test of the system to create instances in OpenStack to measure floating DHCP and IP and generate 12.3376 second time to get a DHCP IP and 1.8596 second for floating IP. The second test is to create a network, subnet, and a router in the two types of tissue and produce an average of 0.60 times, 0.63 and 0:55 on the second LAN network, whereas in the MPLS network produces an average Watu 0533, 0532 and 0.5185 second. The third experiment by measuring performance ssh access and HTTP. The results obtained for ssh access in jaringan LAN with an average time of 1.1692 second, while in the MPLS network 0.9112. results HTTP access to the LAN network produces 6,748 Mbps bandwidth, while at the MPLS network generates bandwidth of 9328 Mbps.

**Keywords :** *OpenStack, Neutron,dhcp-agent ,keystone, Nova, Icehouse, cinder*