

ABSTRACT

The increasingly fast-pace of development of information and communication technology is finally become the primary needs of people, especially in various fields of long distance communication services. Voice services is one of the needs. To meet the requirement for a very large and on-time voice services, it needs a network that can accommodate these requirements; reliable and seamless. An alternative form of voice services applications famously known right now is Voice-over Internet Protocol (VoIP). Cloud computing networks can be one solution to address these needs.

In this final project will be using technology in Software Defined – Wide Area Network (SD-WAN) to connecting the VoIP services. The planned of network will be provisioning with traditional network (Multilabel Multi Switching) before deployed into Virtualization (Networks Function Virtualization).

From the results of the tests obtained, it was concluded that SD-WAN networks are better than MPLS networks because they use NFV technology that is flexible so that it can manage and allow changes in QoS parameters. For QoS parameters (delay, jitter, throughput and packet loss) on VoIP services. Results of the measurement of delay on SD-WAN is better, with a value of 0,058% compared to MPLS. The two tested networks produce jitter averages <1ms, throughput with a value of 20,75 Mbps. and QoS results after testing on MPLS and SD-WAN networks on virtualization technology (NFV), with traffic loads resulting in a "Good" value, without heavy traffic loads.

Keyword : VoIP, Virtualization, NFV, SD-WAN, QoS.