

ABSTRACT

IP Multimedia Subsystem (IMS) became a mainstay for operators to provide voice, video, data, and other third party services with guaranteed Quality of Service (QoS) is good. The increasing variety of types of services offered, then also increase the number of users who access the services offered by IMS. As a result, operators began to be overwhelmed by the need to replace the new devices to increase capacity at IMS where economically less profitable. Therefore, the idea to move the IMS was originally based on dedicated hardware into software-based inside a virtual environment, called the Network Function Virtualization (NFV). NFV technology has the capability of flexibility in terms of increasing the capacity of the device. This increases efficiency in the use of hardware. Therefore, through this NFV will reduce dependence on hardware purchases, but optimizing the existing hardware with horizontal scalability.

In this final project will be implemented in the NFV IMS with IMS software used is OpenIMSCore and software builders NFV its infrastructure is OpenStack. Services in IMS trials are to be conducted services such as voice, video calls and video streaming. Then, there will be performance measures QoS his form of delay, throughput, and jitter, when carried a call by using the S-CSCF and two S-CSCF for voice and video calls, as well as the reliability of the system in handling service requests incoming to IMS related to CPU Usage and Memory Usage her.

From the measurement of QoS parameters, obtained at the time given the background traffic, visible changes are irregular delay, jitter, and throughput due to the communication traffic between nodes that are not predictable, thus affecting the measurement results obtained. However, when the measurement reliability of IMS on NFV, it appears that at the time given call 8000 calls / s, looks CPU Usage 98.83%, and Memory Usage 349 MB, call success that can be handled by 67 230% of 500000 the number of calls, while the Post-Dial the resulting delay for 0.824864967 s.

Keywords: *IMS, NFV, Virtualization, OpenStack, Quality of Service*