ABSTRACT

IP Multimedia Subsystem (IMS) is one of the architectural frameworks that is quite widely used in the telecommunications industry today. IMS can provide multimedia services such as voice, video, data and other third-party services with good QoS guarantees. Acceleration of technological development coupled with high demand for services to make IMS based on dedicated hardware is considered to significantly increase the Capital Expenditure (CAPEX) and Operating Expenses (OPEX), so a solution is needed to implement IMS that later will make it easier to update and manage.

This research will discuss IMS performance using NFV architecture and container-based architecture. The test was conducted to determine the extent of the difference in the performance comparison of both when running voice services using parameters of Delay, Jitter, Throughput, Packet loss and Mean Opinion Score (MOS).

Based on the results of tests conducted, for the call setup delay parameter under normal conditions NFV IMS has a better value of 1.32 ms while for the round trip time delay parameter in normal conditions Container-based IMS has the lowest value of 42.42 ms. For jitter under normal conditions each Session Initiation Protocol (SIP) Phone and mini PC in Container-based IMS has smaller jitter values of 7.25 ms and 6.27 ms, while for throughput and packet loss under normal NFV conditions IMS has a better value of 713.64 KBps and a packet loss value of 0.0491%.

Keywords : *IMS, NFV, hypervisor, Container, CAPEX, OPEX*