ABSTRACT

Currently, the availability of IPv4 addresses is running low, so it is unlikely to accommodate all hosts on the internet, so IPv6 protocols are developed instead of IPv4 that can provide more IPv4 addresses. In order not to interfere with the existing network, IPv4 to IPv6 migration needs to be done gradually, consider with compatibility of existing devices. The mechanism of dual stack and configured tunneling is a transition method that has compatibility with existing devices [5] [14].

This final task implements a dual stack and configured tunneling mechanism, and VoIP and video call services are being missed with Clearwater IMS as an IMS server. Performance parameters of both services include throughput, delay, jitter, and an E-Model approach is used to measure Mean Opinion Score (MOS). Furthermore, the measurement of CPU and memory usage on the router.

From QoS measurements, it appears that VoIP and video call services that are passed on dual stack networks tend to have lower throughput values than dual stack mechanisms. The result of one way delay and jitter also, the value obtained by the tunneling mechanism tends to be higher when compared with the dual stack mechanism. The entire scenario still meets the standards set by ETSI. For MOS measurement, all scenarios performed still meet the standards determined under ITU-T P.800 with "Satisfied" category. In the measurement of CPU usage and memory usage, the values obtained by tunneling mechanisms both tunneling 6in4 and 4in6 tunneling tend to be higher than dual stack.

Keywords : IPv6, Dual Stack, 6in4, 4in6, VoIP, Video Call