ABSTRACT

IMS (IP Multimedia Subsystem) that complements the NGN (Next Generation Network) based on softswitch is designed to assist in improving the user or users, new applications and services available. Different types of applications have different expectations as well, so as to demand better QoS (Quality Of Service) guarantees as well. Applications such as voice and video communication form are very sensitive to delay and jitter. To fix it needed a protocol that can control the QoS. Among them is MPLS (Multi Protocol Label Switching) with Differentiated Service (Diffserv) method which can distinguish and treat packets differently based on the priority of each service class.

In this final project implemented IMS technology using software Open IMS with IPTV and VoD services, which will be passed to the MPLS-Diffserv network used by network emulator, GNS3. From this implementation will be analyzed from a review of his Quality of Service include delay, packet loss, jitter, throughput at the client side.

From the testing and analysis results showed that the use of MPLS can produce a better QoS. Judging from the results of delay, jitter, throughput, and packet loss. Diffserv method can decrease delay until 41,7% and 54,75% for VoD and IPTv services, jitter until 65,65% and 59,17% for VoD and IPTv services, packet loss until 25,86% and 22,98% for VoD and IPTv services, and also can increase throughput until 53,5% and 71,84% for VoD and IPTv services.

Keywords : MPLS, MPLS-Diffserv, IMS, QoS, IPTV, VoD