

ABSTRACT

Telecommunication's needs nowadays has been driving the business market to start utilizing Internet Protocol (IP) based technologies. One of the emerging IP-based framework architectures is the IP Multimedia Subsystem (IMS). IMS framework that ensures network convergence as well as session quality strongly supports various types of real-time service concepts. But the benefits of IMS can not be separated from several other supporting factors, including a reliable, flexible and efficient charging mechanism.

One of the charging mechanisms in IMS is the offline charging. In this final project, the implementation of offline session-based charging is tested over IMS network in Video Call and VoIP service. The scenarios that being tested are comparison of the delay between the network that applies charging and the network that doesn't, the accuracy of duration record in each service session, and the analysis whether or not charging with volume parameter can be apply with session based approaching. This research involves Clearwater as the IMS server, RestComm jDiameter as the Charging Data Function, AWS as the cloud provider, and X-Lite as user softphone.

After being tested, it can be seen that the network that doesn't implement charging has the lower session setup delay value than the network that does, with a difference of 0.34 seconds for VoIP service and 0,25 seconds for Video Call service. The error percentage of rate accuracy itself is within range of 1,38% to 3,13% or greater than the actual duration. While the volume parameter with session based approaching is proven not effective because the VoIP and Video Call service consecutively lost Rp 0.53 and Rp 2.34 every second the services occur.

Keywords: *ims, video call, voip, session based, offline charging*

KATA PENGANTAR

Segala puji syukur penulis sampaikan kehadirat Allah SWT atas rahmat, taufik, karunia, serta seluruh hidayah-Nya sehingga Tugas Akhir ini dapat berhasil disusun. Shalawat serta salam juga turut tercurah kepada *Rasulullah* Muhammad SWT. Tidak lupa ucapan terimakasih kepada setiap individu yang telah memberikan dukungan dan bantuan selama pengerjaan Tugas Akhir ini.

Tugas Akhir ini dibuat sebagai pemenuhan syarat kelulusan Sarjana Teknik program studi Teknik Telekomunikasi Fakultas Elektro Universitas Telkom dengan judul “*Analisis dan Implementasi Offline Charging Berbasis Sesi untuk Layanan Video Call dan VoIP pada Jaringan IMS di Komputasi Awan*”.

Penulis menyadari terdapat kekurangan maupun ketidaksempurnaan dari Tugas Akhir ini. Oleh karena itu, setiap kritik serta saran yang membangun dari pembaca sangat diharapkan demi perbaikan yang akan datang. Kritik dan sara dapat disampaikan melalui *e-mail* ameliagdhn@codebalt.com. Dengan segenap kerendahan hati, penulis berharap agar Tugas Akhir ini dapat memberikan manfaat bagi pembaca khususnya dan bagi ilmu pengetahuan pada umumnya.

Bandung, Juli 2018

Penulis