Abstract

The emergence of cloud computing as a new paradigm in building a variety of services dynamically and has a rapid-elasticity expected to overcomes the problem of availability of service and resource efficiency of telecommunication services especially for VoIP service. However, many existing cloud computing platforms currently have not support the allocation of resources dynamically and automatically yet. In this thesis will be built VoIP over IP Multimedia Subsystem (IMS) based on cloud computing. The use of IMS because IMS as the de facto technology is widely used by telecommunications operators in developing various communication services such as VoIP. By using cloud computing, this system has the ability to allocate resources in particular computing resources dynamically and automatically called by auto-scaling. Auto-scaling system that made use of predictive models of the system so as to avoid system failure precisely, the prediction method used is the Exponential Moving Average (EMA). Auto-scaling systems are made to improve service availability parameters as measured by the mean time to repair (MTTR), mean time to filure (MTTF) and mean time between failure (MTBF) and improves efficiency in the use of memory.

Keywords : *Cloud Computing, auto-scaling, IMS, VoIP, EMA, availability, efficieny of memory usage*