

## **ABSTRACT**

*Voice Over Internet Protocol or commonly called VoIP is a technology that enables voice, data and video using an Internet Protocol-based network to run on packet-based networks. Cloud Computing technology is a technology where the computing resources such as processor / computing power, storage, network, and software into a virtual and given as a service on the network / internet with remote access pattern. The presence of the virtualization concept release physical dependence, as in the Cloud Computing itself can be made more than a physical one that can minimize the cost and physical devices that exist. However, due to Cloud Computing service is mostly located in the area scope of network packet, then the security aspect also needs to be given sufficient attention. Because of the vulnerability of the security aspects of a security system is necessary to maintain the security / confidentiality of conversations taking place at the time of communication.*

*In this final project, implemented Infrastructure As A Service on Cloud Computing system by using Proxmox VE as virtualization software. VoIP server is equipped with Secure Real Time Transport Protocol (SRTP) and Transport Layer Security (TLS) as a support system security.*

*From the test results it can be concluded that the addition of SRTP and TLS security protocols on Cloud Computing-based Asterisk server will add the aspect of integrity, confidentiality, authentication and privacy to the Asterisk server, while the quality of the measurement results obtained VoIP communication largest delay of 20.719 ms and 1.108 ms jitter on communication when using PCMU codec and SRTP and TLS security protocols, and when using iLBC codec the biggest jitter and delay values occurred when using SRTP and TLS protocol in the amount of 1.668 ms for jitter and 60.298 ms for delay*

*Keywords : Cloud Computing, IaaS, Proxmox VE, VoIP, SRTP, TLS*