

## **ABSTRACT**

Call center is a centralized telephone call service facility for a company/organization in order to provide various information services, receipt of complaints. In a VoIP environment that is often a constraint is the translation of private addresses to the public and in a convergent network environment is the problem of inoperability between analog phones (calls from the PSTN environment) to the VoIP network.

In this final project a miniature network is designed and realized in a lab that represents the three network environments, namely private IP (LAN) network, public IP network, and PSTN network where the call center is located on a private IP network (LAN) that represents a company with call center facilities with the main component of VoIP server using Elastix software.

Functional testing results with various features they have, the system can function properly as planned. From the results of performance testing (performance) that is QoS (packet loss, delay, jitter, throughgput) and PDD (Post Dial Delay) obtained a comparison using the server by comparing the two server operating modes namely local host and hosting (VPS). The comparison results show insignificant differences where both show packet loss below 3% (according to ITU-T G.1010 standard) delay of less than 150 ms (according to ITU-T G.114 standard) and jitter of less than 50 ms (according to standard ITU-T G.114).  
Key Word : Call Center, Elastix, VoIP, PSTN, Private IP, Public IP