

## ABSTRACT

*Voice over Internet Protocol (also called VoIP, IP Telephony, Internet telephony, or Digital Phone) is a technology that allows voice conversations remotely via the Internet. The voice data is converted into digital code and through a network that sends packets of data, rather than through traditional telephone analog circuits.*

*In this final task has created a network of VoIP network implementation that uses Voice over Internet Protocol technology as its server, and use the PLC (Power Line Communication) as its broadband network. PLC is a system for carrying data on a conductor also used for electric power transmission. This will certainly facilitate the implementation of the network because any building or room would have its own electricity network. Then to make the server computer is made using one of the Linux operating system, namely Ubuntu, and by utilizing Asterisk applications, as applications that connect VoIP networks to all users of the VoIP service itself. Once the server and all the services that will be made have been completed, and then connected to the rest of the network in each room, used PLA (Power Line Adapter). PLA attached to any electrical terminals in the desired room. By using UTP cable at the desired network, it creates a simple network that uses electricity to the media of the data transfer.*

*The end result of this design has been created to measure the QoS (Quality of Service). QoS is used as a reference in which the effectiveness of a network can be measured. Where the value of throughput, jitter, delay, and packet loss can be measured.*

*Keyword : VoIP, PLA, QoS, Asterisk, Ubuntu*