

ABSTRACT

Indonesian society needs high speed internet access will increase, with the development of technologies that utilize the technology emerged grid as transmission media internet network, now known as Broadband over Powerline (BPL) is capable of delivering data packets up to 200 Mbps and is able to run triple play (data, voice, and video) simultaneously.

Final Project aims to determine the BPL network configuration has been implemented in Puri Kencana Depok and analyzes the feasibility of BPL services according to established SLA ICON + on the IP Backbone (MPLS VPN). Observation of activities carried out by measuring the MetroNET performance, and measure the performance of BPL on traffic conditions and the different electrical loads. Further performance compared with the performance of BPL MetroNET for QoS parameters: delay, jitter, packet loss, throughput, bandwidth, and line quality.

Based on observations and analysis of some of the observed performance standard for VoIP communications is: the average delay of 57.85 ms in the predicate acceptable according to the ITU-T G.114. The average jitter of 47.81 ms based on ETSI / V1.2.5 predicated THIPON good speech. Packet Loss for an average of 0.25% according to the criteria entered PINGTEST.NET standards very good. As for the performance of Internet services that analyzed the performance include: the average throughput of 69.47% based on a Service Level Agreement ICON + that the throughput of at least 90% of the allocated bandwidth. Average bandwidth at 354 kbps for downstream and upstream at an average of 203.5 kbps which is based on the standard definition of the FCC about BPL Broadband Bandwidth Puri Kencana then entered the broadband Internet access criteria. Quality Connection with an average value of 71.7 ms ping, an average of 16.35 ms jitter and MOS values has a value of 4.28 grade B in which real-time applications running smoothly, but less than optimal for the game online. Recommendations can be submitted for performance improvement, in order to use the BPL devices that can communicate in both directions simultaneously to minimize delay and IP backbone network chose minimal network load trafiknya eg Clear Channel owned ICON + to stabilize the bandwidth.

Key Words: BPL, Metronet, QoS, VoIP