ABSTRACT

DESIGN AND IMPLEMENTATION OF COMPUTER NETWORK USING LAN AND WLAN WITH QOS (QUALITY OF SERVICE)

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Everyday by day the number of users of internet technology is increasing to carry out information exchange activities in cyberspace, according to O'Brien, The internet in the now is an technology that is growing rapidly on a global scale and provides various benefits for various aspects such as in education, business, to government networks which connect divisions with other subdivisions. The business company PT. Satu Tujuan Kapital are already have internet network services installed and used as infrastructure services for the client, but the network infrastructure is not enough effective and needs to be improve because it is proven by the results of measuring the QoS (Quality of Service) parameter and the weak of signal strength by -81dBm, it is recorded that it has one data index value. which is not good, the data parameters analyzed include throughput, delay, jitter, and packet loss. In this research, the design and implementation of the network is carried out using Lan (Local area network) and WLAN (Wireless local area network). The test is in the form of measurements using iPerf and Wireshark software as data traffic catchers on the TCP (Transmission Control Protocol) protocol with a two-sided scheme, namely client - server, on the server side using a public server by iperf.biznetnetworks.com and the client side in the form of a laptop that connected to the object by router. Based on the test, it was found that there was a significant increase in the throughput parameter, then the delay and jitter parameters were classified as perfect, and there were also packet loss parameters which tended to be categorized as good. Analysis of the results of the QoS parameter data is categorized based on the TIPHON (Telecommunications and Internet Protocol Harmonization Over Networks) performance index value. there is an increase in signal strength results with a value of -46 dBm from the client or user side.

Keywords: Internet Networking, Quality of service, Tiphon, Lan, and Wlan