## ABSTRACT

To build a Virtual Private Network, requires a server as a service provider and as a user management utility. The use of devices conforming capable such as desktop server or high-end router as a VPN server on a small-scale network such as SOHO (Small Office / Home Office) network is less efficient, therefore, need other alternatives for making the VPN server. Accordingly, the implementation of this final project, implemented a VPN server by using a mini PC.

In the process, a mini PC servers using Linux operating system as the main foundation. Server is also integrated with VPN Softether applications, where this application can support multiple VPN protocols such as L2TP / IPSec, OpenVPN, and MS-SSTP. In testing, performance comparison will be performed, a mini server will be compared with desktop PC and non-VPN network. In addition it will count the CPU performance when active user simultaneously.

Results obtained under some scenarios, among others obtained the highest value on throughput data download of 20.353 Mbps for mini PC, 20.384 Mbps for desktop server, and 21.224 Mbps for non-VPN network. On the measurement of VoIP, the lowest value for the delay, jitter, packet loss, and MOS respectively is 20.82 ms, 1.172%, 1.153 ms, and 4.09 for mini PC, 20.32 ms, 1,014 %, 1.66 ms, and 4.22 for desktop server, and 20.03 ms, 0.514%, 0.704 ms, and 4.18 on non-VPN network. The highest percentage of CPU usage was 93% in the use of the protocol L2TP / IPSec with user active simultaneously.

Keywords : VPN, Mini PC, Desktop Server, Softether VPN