ABSTRACT

By using VPN-MPLS, VPN configuration can be done by service provider, meanwhile the connection establishment between location/intersite can be done by customer itself, without any additional equipment in customer side. Connectivity can be formed from any node to another (all direction at once), without have to arrange two-direct link series. It can be used as intranet platform which is efficiently base IP network on a company. It also can be used as extranet which connects the companies that bond by aggrement. The problem is how far the quality of data communication which resulted in that VPN-MPLS network..

In this Final Task, measurement and performance analysis of data services in PT. Citra Sari Makmur (CSM) VPN-MPLS network were done for a week observation. The measurement is done with *ping* to one of corporate customer that is PT. Selamat Sempurna (ADR Group) which placed as a head office in Tangerang (Curug), with branch offices in Pluit and Kapuk.

The result of measurement and analysis shows that in speed 128 Kbps, *the average delay* parameter value is 105.29 ms for ping packet with data length 1000 Byte and 212.29 ms for ping packet with data length 2000 Byte. Meanwhile in speed 256 Kbps, *the average delay* parameter for each ping packet is 92.29 ms and 153.57 ms. It also gives *packet loss* parameter value $\leq$ 0.2 % for both transmission speed, less than the guarantee which is 5 %. This is appropriate with *Quality of Service* (QoS) guarantee from PT. CSM which is corporate 1:1.

Keywords : VPN, MPLS, *ping*, QoS, *delay*, *packet loss*.