ABSTRACT

At this moment a lot of industries ISP (Internet Service Provider) using IEEE 802.1ad Ethernet technology as a bridge from the ISP's up to the customer because the performance is better than the use of wireless.

In this research will be discussed on the implementation and performance analysis of Single & Double VLAN. The device used is 2 routers, 2 switches and 2 pieces of notebook as a client and a server. Software is used to create a virtual machine vmware, iperf as a traffic generator and wireshark to menganilis network performance.

The results obtained in this thesis, a row of SVLAN, CVLAN and Double VLAN as follows. Throughput for TCP protocol on all three methods are 60, 50 and 46 kbps, for UDP is 64, 58 and 56 kbps and SCTP with the following values 56, 44 and 42 kbps. Results of delay for the TCP protocol is 0:27, 0.94 and 1.6 ms, UDP protocol is 0.1, 0.5 and 0.8 ms and SCTP is 0:34, 1.9 and 2.1ms. Then proceeds to jitter on the TCP protocol is 0:04, and 0:16 0.1 ms, the UDP protocol with a value of 0:02, 0:06 and 0.08ms and SCTP are 0:05, 0:18 and 0.24ms. In experiments with background traffic with a bandwidth of 85, 90 and 95mbps performed on the UDP protocol, SCTP and TCP with the acquisition of consecutive packet loss as follows. UDP with a value of 0:34, 1.78 and 2.106%; SCTP with a value of 0115, 0714 and 0.82%. whereas for TCP delay following values obtained 117.2, 205.6 and 290.4 ms.

Key words: Bridge, Tunneling, Vlan, Qos