ABSTRACT

AToM technology developed after seeing the huge success of the MPLS-VPN technology that provides secure data delivery solutions and fast because it uses a private network (VPN) and using MPLS as a backbone network. However, layer-2 technologies like Leased Line, ATM, and Frame Relay is still the largest revenue contributor for the service providers [1]. This technology is still chosen by customers because most companies and using products that use protocols that can not be carried by IP (example: IBM FEP) [1].

Based on that later ATOM technologies developed, with an atom then the network provider can skip the layer-2 traffic such as ATM, Frame Relay, etc.. through the MPLS network. So that only by having a single network but can offer two major services, namely MPLS-VPN and the atom then the amount of investment that has to be removed can be minimized.

ATOM technology is starting to be used by service providers who have an extensive network of [5]. In this final task will be implementing the technologies of atoms in the small network and use GNS3 software.The results of this implementation is expected to present a picture comparison between the MPLS QoS-Frame relay, MPLS, ATM, and MPLS-Ethernet.

From the measurement results can be seen that ATM over MPLS technology has the highest throughput with the smallest difference in value amounting to 177,095 bps from Frame Relay over MPLS and 209,986 bps Ethernet over MPLS. While the value of delay, packet loss, and jitter is obtained from a network that uses ATM over MPLS technology has a good value compared to networks using Ethernet over MPLS and Frame Relay over MPLS.

Keywords: MPLS, Atom, Frame Relay, ATM, Ethernet