ABSTRACT

Nowadays, data network has an important role for the economy of a country because most of company use data network for sending all of their recapitulation from branch office to the head office. One technology for accelerating the process of data sending is MPLS (Multi Protocol Label Switched). Moreover, the service provider today competes in providing a technology called MPLS-VPN (MPLS-Virtual Private Network) which can give a private network to communicate with all branch offices.

Practically, Frame Relay technology which works on layer -2 and was the pioneer of MPLS technology is still used by most of service provider. Because MPLS and Frame Relay layers are different, most of service providers separate their network. Based on this problem, new technology has been created that allows Frame Relay to use MPLS network to transport packets with tunneling method called AToM. This technology is a win-win solution for service provider and user because service provider does not have to provide separated network for Frame Relay and MPLS, and for user, they do not have to rent two different networks for two different services.

In this final task, AToM technology on local network using PC router is implemented. The result from this implementation is expected to be able to describe how the AToM technology works.

From the implementation in laboratory, the use of MPLS does not always make better QoS (Quality of Service). It is true, if we see from throughput and delay value, AToM is higher than pure Frame Relay. However, if we see from packet loss and jitter value, pure Frame Relay technology is better than AToM.

Keywords: MPLS, AToM, Frame Relay