ABSTRACT

Multiprotocol Label Switching (MPLS) has been a common *packet* transport platform which helps us to run network easily with lower cost. The basic concept of MPLS itself is to embed the information on the labels of IP *packet*s. Because of these advantages, some parties are interested in implementing end-to-end MPLS.

However, MPLS has some lacks, and one of them is the length of service *provisioning* time on different MPLS network with different *domain*s, therefore an innovation of MPLS platform is needed to develop MPLS scope and fix its lacks. Seamless MPLS is a solution to the aforementioned problems. Seamless MPLS refers to the establishment of an unified IP/MPLS control plane for all IP devices. Seamless MPLS allows operators to provide faster service and lower cost.

In this study, we dig into the implementation of Seamless MPLS to obtain centralized control on MPLS network which is simulated in Telkom RDC Bandung. The choice of this location is based on the availability of simulator devices in the RDC lab.

Research of MPLS network and Seamless MPLS network resulted in an improvement of the performance quality of Seamless MPLS network which is a 49,37% parameter delay during without background traffic with an injection of 30.000 routes of table routing. There was also efficiency of the use of memory capacity on Provider Edge (PE) router which was ±7% during the addition of 30 routes, ±8% during the addition of 300 routes, ±16,5% during the addition of 3000 routes, ±76% during the addition of 30000 routes.

Keywords : MPLS, Seamless MPLS, BGP-LU.