ABSTRACT

Multi Protocol Label Switching (MPLS) is a data forwarding method through a network using label information wich is assigned to IP packet. Unfortunately IP network has a serious weakness in deploying Qality of Services (QoS). QoS architecture wich could be used is Differentiated Services (DiffServ). DiffServ and MPLS are complementary techniques wich could be deployed in IP QoS network. DiffServ provides scalable QoS mechanism meanwhile MPLS provides traffic engginering and routing technique wich optimizing network resources. Services provider will be able to provide various class of services with QoS guarantee using MPLS QoS to it's costumer.

This Final Project explains DiffServ, MPLS and the both combination to optimizing QoS level. The Problem wich will be observed are how to implemented QoS with DiffServ architecture and analyze how it could improve QoS level on MPLS based network Qos Parameter used is provided by ITU-T. QoS parameter is obtained by using simulation (Network Simulator) and observation using Network Management System (NMS) directly on MPLS based network in this case MPLS network in PT Telkom.

This research shows that in PT Telkom's MPLS based network deploying DiffServ provides good characteristic on latency and packet loss and fulfills good quality requirement for several class of traffic.

Keywords : mpls, quality of services, differentiated services