

ABSTRACT

Multi-Protocol Label Switching (MPLS) is a data forwarding method through a network using label information which is assigned to IP packet. Unfortunately IP network has a serious weakness in deploying QoS. QoS architecture which could be used is Differentiated Services (DiffServ). DiffServ and MPLS are complementary techniques which could be deployed in IP-QoS network. DiffServ provides scalable QoS mechanism meanwhile MPLS provides traffic engineering and routing technique which optimizing network resource. Service provider will be able to provide various class of services with QoS guarantee using MPLS QoS to its customer.

This Final Project explains DiffServ, MPLS, and DiffServ + MPLS concepts. Improving QoS level effort which is explained furthermore is using tagging method with IP Precedence. The problems which will be observed are how to deploy QoS using DiffServ architecture and analyze how it could improve QoS level at PT Telkom's MPLS based network. QoS parameter used is provided by ITU-T. The QoS parameter is obtained by doing experiment and observation directly using Network Management System (NMS).

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

Keywords: mpls, quality of service, differentiated services, ip precedence