

ABSTRACT

PT. XYZ is an Internet Service Provider (ISP) company that has been using Multiprotocol Label Switching (MPLS) technology. There are several problems in existing condition. The downtime failover from the main path to the backup path and the increasing number of customers and services that making the main traffic path become congested. With these conditions PT. XYZ wants to improve the performance and utilities on the existing network in stages.

Traffic Engineering (MPLS-TE) is a technology that can cover up the above problems. By using this technology PT. XYZ can improve network performance and utility.

In the migration process, the hybrid technology of MPLS-IP and MPLS-TE needs to be applied to gradually migrate to the corporate network and not to interfere with PT. XYZ's existing network and services.

The result is a design of migration process with a hybrid technology of MPLS-IP and MPLS-TE using Network Development Life Cycle (NDLC) method. And the result of the analysis consists of two parameters, there are availability and Quality of Service (QoS). The value for availability network with MPLS TE shown value 2,753ms and for the QoS is throughput is 43,98 kbps, Delay is 0,03 s, and the packet loss is 38,79%.

Keywords: Migration, Performance and Utility, MPLS, Traffic Engineering, Hybrid MPLS, Network Development Life Cycle