ABSTRACT

In the core network side, MPLS is expanded for decrease complexity from forwarding mechanism that base IP network make. MPLS combine label swapping mechanism in layer 2 with routing in layer 3 for quick sending package. MPLS introduced forwarding method with make labeling for every package that will come in to the network.

Utilized *Multi Protocol Label Switching* (MPLS) as backbone network and use queue mechanism in it expected can solve the congestion. Utilized queue management can increase MPLS network performance.

In this final task, the research wants to analyze the QoS of user access network performance in MPLS network with combine 2 queue method. These researches use 4 queue methods such as Drop Tail, SFQ, DRR, RED. These researches wants to get some conclude about combine 2 queue method in MPLS network that can produce the most optimal work. This MPLS backbone used LDP route. Analyze is made with simulate the network by software. Performance parameter of QoS that wants to analyzes such as delay, packet loss, throughput, and jitter.

The result of this research show that from some combination can get conclude that combination of queue method such as Drop Tail – SFQ, DRR – SFQ, RED – SFQ produced more good of delay, packet loss, throughput and jitter than another combination.

KEY WORD : Multi Protocol Label Switching (MPLS), DropTail, SFQ, DRR, RED.