

## ABSTRACT

Since bandwidth available is limited and congestion problem, need some method to control the congestion to give the best performance in their work. There are some methods to increase network performance: differential service, resource reservation protocol (RSVP), multiprotocol label switching (MPLS), and scheduling management (queuing).

With multiprotocol label switching (MPLS) as a backbone network and using queuing mechanism into it, can avoid congestion problem. Beside that, with using queuing mechanism can give better performance in their work in the MPLS network.

In this final task, compare queuing mechanism: FIFO (*First In First Out*), DRR (*Deficit Round Robin*), RED (*Random Early Detection*), dan REM (*Random Exponential Marking*) in MPLS network with simulation tool: network simulator-2 (NS-2).

The results of this observation are in scene 1 network, DRR give the best delay value, RED and DropTail have a same perform. In overload network, only DRR and RED can control the congestion with give a good result of packetloss.

Key word: MPLS, Quality of Service (QoS), FIFO, DRR, RED, REM, RSVP, *differential service*.

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