**ABSTRACT** 

Bachelor of Information System (BIS) is a study programme under School

of Industrial Engineering in Telkom University. BIS has five laboratory that

responsible for a lab activity that corresponding to a respective subject.

BIS lab activity is divided into offline and online. Online lab activity is

established for minimizing BIS resource and infrastructure constraint. But there

still are problems on online lab activity such as long duration of file upload, this

is happened because file transfer protocol has some problems. Furthermore, a

HTTP is used to access online lab activity, so these two protocols are important

on online lab activity process. A multiprotocol label switching (MPLS) is one of

many option that can solve this problem.

This MPLS network will be simulated on GNS3 simulator. To examine

MPLS-implemented network performance, a test on quality of service (QoS)

parameter such as throughput, delay, jitter and packet loss will be established.

Then, its quality result will be based on ITU-T G.1010 and TIPHON.

The Result of this MPLS-implemented network shows some escalation of

QoS parameter such as throughput, delay and packet loss that have very-good

category based on ITU-T G.1010 standard and jitter that have very-good category

based on TIPHON.

Key words: Information System, MPLS, QoS, FTP, HTTP.

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