

ABSTRACT

The development of operator network competition in the cloud network era in providing excellent services to users is a concern by network operators. the problems that appear are network performance, telecommunication needs in the metro ethernet services continue to enhance and more complex configuration, control part will be more difficult, inflexible and hard to control. This problems make the network operator become hard to provide innovations for services and provisioning process of the network element become slower. This current network situation was due in part to IP/Optical network and consist by some elements from multi-vendors, it affects the time efficiency and the cost of a NMS (network management system) as well in service provisioning and monitoring a network operator, one of the telecommunication solutions to answer the needs is the ethernet metro facilities that developed by PT. Telkom Indonesia and nowadays the SDN (software defined network) technology change the paradigm of network operator in service provisioning and monitoring a network. In my final project, to improve the optimisation of this network infrastructure, it is necessary to analyze the network performance through SLA parameters (service level agreement). This SLA parameter consists of throughput, latency and frame loss and is measured based on RFC 2544. After testing the 3 services using traffic generator, the results obtained with the received throughput value for 100 Mbps of data sent is 98,814 Mbps on 1518 bytes frame size, 99,111 Mbps on 2000 bytes frame size and 99,142 Mbps on 2100 bytes frame size. Then the result of the latency measurement is around 1,263-1,491 ms with maximum duration of 10 seconds and the measured frame loss is 0% frame loss which prove that theres no frame loss occurred.

Kata kunci : Nokia NSP, E-Line, E-LAN, L3VPN, SDN