

## ABSTRACT

Network security is a means of giving an extra security into a network where one of the common way of doing that is by adding an IPSec VPN Tunnel into the network. This research explain and simulate the effect of using IPSec VPN Tunnel in different condition.

The result of this research shows that a network with IPSec VPN Tunnel has a throughput of 3050,441 bit/s, packet loss at 0%, average one way delay 0,452 ms, and average jitter at 0,236 ms. And for the network without IPSec VPN Tunnel has a throughput value of 3057,234 bit/s, packet loss at 0%, average one way delay at 0,448 ms, and average jitter 0,24 ms.

The result of this research shows that the implementation of IPSec VPN Tunnel does affect the performance of throughput for 0,22%, average one way delay 0,89% and jitter 1,67%, while packet loss does not show any changes in performance.

Keywords: *Network Security, VPN, QoS*