ABSTRACT

The development of the current network technology that led to the NGN (Next Generation Network), where the NGN will be implemented all existing network-based IP. One of the technologies that will become the standard technology of NGN is IMS (IP Multimedia Subsytem). IMS is a technology that basically integrates data services, voice and multimedia service over an IP network infrastructure.

In the application later with the ever-expanding use of IP and NGN networks were adopted as the standard operators will use IMS as their core network. Therefore, there will be interconnection between operators where the domains are different from one operator to another operator. At this final task the writer implemented interdomain IP Multimedia Subsystem that the user of the two different domains can communicate with each other using a IPSec VPN (Virtual Private Network) as tunnel mode between the two domains that are interconnected. The the writer analyzed the server performance of PDD (Post Dialing Delay) value and the successful call of the system at the time without and with the use of VPN with a particular background traffic to the PDD value generated is still a maximum eligible PDD ITU-T. Besides analyzing the PDD and successful call, call admission delay measurement is also done in the scenario without VPN for find maximum call admission delay of IMS server in the resulting PDD still meets the ITU-T standards.

Obtained from the experiment, the larger algorithm cipher key used then the larger PDD was resulted. Maksimum PDD value which still qualified for the ITU-T standard is 2.2712275 s for interdomain calls that use VPN with AES256 algorithm when the background traffic is 2 calls/s. Maximum call admission delay without VPN scenario is 0.38 s for PDD 0.904376767 s when background traffic is 2 call/s. At successful call interdomain measurement when call rate happen from 1 call/s to 4 call/s obtained result 100% successful call.

Keyword : NGN, IMS, *IPsec*, PDD, *Call Admission Delay*, *Successful Call*