ABSTRACT

In the era of technology that toward to Next Generation Network, IP Multimedia Subsystem (IMS) present as a technology which manage for each multimedia interactive session. However, the security aspects in IP-based systems must be considered. Secure GRE tunnel is a GRE tunneling mechanism that uses the methods of security by using IPsec. Secure GRE Tunnel implement site-to-site VPNs, traffic of packets between two separate sites pass through a virtual point-to-point path.

This final project implementated VoIP and VoD based on IMS and using Secure GRE Tunnel in core network. Sniffing is done to test how secure GRE over IPSec tunnel is and to prove that the packet is encapsulated with GRE Header and ESP Header. Besides testing attack of the tunnel, performance of VoIP and VoD services based on IMS which implemented GRE Tunnel and Secure GRE tunnel in the core network, will be analyzed with reference to the value of inter-arrival delay, jitter, throughput and packet loss.

From the research, concluded that Secure GRE Tunnel is a site-to-site VPN which provide third layer security, but a better network performance is while implemented only GRE Tunnel alone. In the Secure GRE Tunnel occurs overhead on IPSec and encryption process causes packets need a longer processing time. The value of delay, jitter and packet loss on GRE Tunnel inVoIP and VoD services is smaller than the tunneling GRE over IPSec. And the throughput on the GRE tunneling even greater than in the GRE over IPSec tunneling.

Key words: GRE, IPSEC, IMS, VoIP, VoD, sniffinG