

ABSTRACT

With the development of technology, many multimedia services has developed in the internet. One of these service is VoIP.

VoIP technology has lot of benefit because its uses IP based network that has complex networking in the world. Therefore the cost to make long distance call is more efficient than using analog telephone. But VoIP have weakness which is there no guarantee of security. Because of its IP based, then everone can sniffed and record VoIP data traffic. From this case, a research on how to make VoIP data securer without reducing the performance of the VoIP network itself came to our thought. One of it was Virtual Private Network Method. VPN itself has known as one of the powerful method to handle security problem, especially securing important data. To implement this idea than a VoIP over VPN system is made. Than the performance and security of VoIP before and after using the VPN is analyzed. Wheater the voice that created by VoIP over VPN system is fulfil the ITU-T standar based on delay, jitter and packet loss. From the testing with G.729 codec, the performance with 96 kbps bitrate (delay, jitter and packet loss) with VPN sebelum dan sesudah menggunakan VPN. Apakah voice yang dihasilkan oleh VoIP over VPN isn't significantly change (there is increase for 1% until 8%). But when bitrate setting is below 64 kbps then the performace of VoIP is decrease drastically. (delay is increasing 1000%, jitter 100% and packet loss increase to 83% - 87%). Meanwhile for the security of VoIP data, VPN can secure VoIP data from security threat. Before using VPN, VoIP data can be recorded and replay with audio player. The payload data is captureable and visible but after using VPN, VoIP data can't be record and the payload data is invisible.

Key Word : VoIP, VPN, delay,jitter,packet loss