

ABSTRACT

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Title : QoS Analysis and Security of VoIP Communication Systems Using OpenVPN

With The rapid development in technology, Technology of IP-based communication is growing rapidly as well. Currently the internet is not only focused on data package services and standard applications such as the WWW (World Wide Web), HTTP, SMTP, FTP, or other data services that are non-real-time and do not have QoS. At present the need for multimedia-based services for IP networks has become possible because of the discovery of network QoS supporting technologies such as RTP, Streaming via the Internet which makes IP networks reliable for sending real-time data such as voice or video .. But one obstacle in implementing VoIP, the data sent is not guaranteed so that anyone can capture and manipulate the data. one of the solution is use a VPN (Virtual Private Network). In this experiment the author will use OpenVPN. VPN itself is known as one of the reliable methods of dealing with network security issues, especially for sending important data. In addition to other data security problems the constraints are the performance of VoIP services such as delay, jitter, packet loss and throughput on data networks that need to be considered. From there comes a thought to do Analysis QoS and Security of VoIP Communication Systems by Using OpenVPN. The analysis is to find out QoS (Delay, Jitter, Packet Loss and Throughput) whether it still meets the ITU-T standard or not. And to find out the security of the VoIP system after using OpenVPN and before using OpenVPN. the result from analysis and testing using Audio Codec G.711 and G729, it can be seen that the use of Audio Codec G.729 is more optimal. This can be seen from the results of the average Delay, Jitter and Packet Loss in both Audio Codecs. Although the average results of the two are not too much different but throughput or bandwidth used by Audio Codec G.729 lower than Audio Codec G.711. As for VoIP data security, OpenVPN can secure data from security threats of tapping. And before using OpenVPN VoIP data can be recorded and played back.

Key words:

VoIP, QoS, VPN, Audio Codec