Voice Quality of VoIP

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Abstract

Perceived voice quality is a very important metric for QoS for VoIP applications. The primary purpose of this research project is to carry out an investigation of the measurement mechanisms developed to evaluate VoIP service quality, and to conduct experiments to assess and analyze the impact of packet loss, delay and jitter on perceived voice quality. The study, based on NIST Net which is capable of emulating the real IP network, utilized an objective perceptual method for measurement and assessment. The impact of packet loss, delay and jitter was investigated for two codecs (G.711 and G.729) under different scenarios, using the ITU-T P.862 PESQ and MOS-LQO algorithms. Results show how packet loss and jitter negatively impact the voice quality. Delay has, in general, no obvious influence on the voice quality based on the same measurement model. This research project should help to develop efficient QoS monitoring strategies for VoIP applications, for example, by selecting the ideal coding and packet size under certain network conditions to achieve better voice quality.