Abstract

The security in Voice over IP using SIP initiated IPSec tunnel with the help of Multimedia Internet Keying (MIKEY) protocol has been studied in this paper. Call establishment in SIP initiated IPSec deals with cryptographic processing at the caller and the recipient end. Cryptographic parameter negotiation for IPSec is done through the SIP INVITE message in the calling phase and 200OK response in the answering phase when the responder picks up his phone. This IPSec cryptographic processing at caller end makes it unable to send and receive the RTP media packets at the beginning of the RTP session. This situation is called as call clipping. The caller faces media transmit clipping and media reception clipping at the start of the call due to which the caller can neither send nor receive the RTP media packets for first few milliseconds and hence becomes QoS issue. Ghost ringing is the byproduct of the solution of clipping effect which is rectified with the use of another provisional response at the cost of delayed phone ringing in the ringing phase. An Algorithm for the elimination of clipping effects (Caller’s transmission clipping, Caller’s Reception Clipping) has been proposed in this paper. The Algorithm describes the process for shifting the IPSec cryptographic processing from the answering phase to the calling phase and a solution to ghost ringing.
Algorithm for Elimination of Clipping Effects and Ghost Ringing in SIP initiated IPSec based VoIP

References


Index Terms

Computer Science

Algorithms

Keywords

VoIP SIP IPSec MIKEY MIME PRACK algorithm