VoIP Security

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Abstract

When we study VoIP, we can divide it into two issues, the first one is signaling communications, which include call establishment between two parties or more. And the second one is Data communications which include transfer of Voice Data itself. We concentrate our research on call establishment phase. This stage is the most important phase in VoIP communication, because the security of call establishment includes the security of key exchange which is in most cases piggy backing over SIP messages. These keys will be delivered to end parties securely as well. Then we can use SRTP or IPSec for securing voice data. Our research goals are to study, analys and compare the security solution which are used to protect VoIP, the concentration will be on their performance through studying the effect of applying these solutions on the delay during call establishment and the efficiency during exposure to different attacks in our test environment. The ultimate goal is to reach a good solution through gathering and adapting different components

Keywords: Voice over Internet Protocol, signaling communication, data communication, signaling protocol, secure call establishment, protection mechanisms, attack.