

# VOIP in PEER-TO-PEER using Session Initiation Protocol

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## ABSTRACT

Session Initiation Protocol (SIP) is an application layer protocol for multimedia sessions developed by IETF. It is a signaling protocol for voice over IP (VoIP). Originally, SIP was specified as a client server protocol to set up multimedia communications. However, recent proposals suggest using SIP in a peer-to-peer setting. The initiators of P2P SIP claim higher robustness against failure as well as easier configuration and maintenance as in the main motivation for peer-to-peer SIP. Clearly, a peer-to-peer setting imposes new security threats to SIP communications; design decisions that affect security, which include node-ID computation, overlay routing, authentication of nodes, SIP message semantics, and representation of identity. For instance, the lack of a central authority makes authentication of peers a hard problem. Without authentication, adversary nodes can spoof identity and falsify messages in the network. The peer-to-peer network may be affected by attacks like bootstrapping, identity enforcement, free riding, and anonymity. The requirements for secure network are secure node-ID assignment, secure routing table maintenance and secure message forwarding. In our project, we focus on providing secure node-IDs. Solely the IP address (without port) is used for node-ID generation. It is suggested as a better choice than using a combination of IP address and port which is being originally used.

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