Implementing the VOIP Communication Principles using Raspberry Pi as Server

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Abstract

VoIP stands for Voice over IP (Internet Protocol), a variety of methods are there for establishing two-way multi-media communications over the Internet or other IP-based packet switched networks. VoIP has two goals: The first is reduction in telephone charges by sending the call as packets over the data lines or internet. The second goal is to provide flexible voice networks, like allowing multiple calls on same physical link. Applications of real-time VoIP communication have come into widespread use over the Internet. [2] VoIP in Embedded systems is one of the blind spots, where due to its over reliance on PC environment restricts its application. In this project we have reviewed the application of VoIP on embedded systems and also proposed a system to set its application using better components. The proposed hardware uses raspberry pi board with VoIP protocols. It adapts the SIP (Session Initialization Protocol), IAX/IAX2 (Inter Asterisk Protocol: Open source trucking protocol). The system sets a small intranet that can be used by any organization for communicating within itself at no data charges. The raspberry Pi is programmed at kernel level of Linux and thus works as a server. The system utilizes the freely available telephony software like Asterisk, FreePBX for the development of codes which makes
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the system cost effective.

References

5. Jan Janak, SIP Introduction, Copyright © 2003 FhG FOKUS

Index Terms
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Keywords
VoIP, Embedded Systems, SIP, Asterisk protocols, Kernel codes, Session Initialization Protocol, Server-Client model, Raspberry Pi Board