

Implementation of Call Blasting Using Raspberry Pi

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Abstract- Call Blast is a telecommunication technique and it is one of the PBX features which allows businesses to connect number of customers simultaneously and broadcast a pre-recorded message. It is required to specify the message that is to be broadcasted and a set of contact numbers to be dialled and the rest is taken care of by Hosted PBX system. Firstly, it is required to record a message which has to be “blast” to a large number of contacts. After recording the message, it is required to specify the numbers in the Call Blast Data Base where the message needs to be broadcasted. The time for the call blast is decided after analysing number of contacts. Then the system calls all numbers simultaneously and plays the recorded message.

Keywords- Private Branch Exchange (PBX), Call Blaster

I. INTRODUCTION

Wireless communication plays a vital role in day to day life, a private branch exchange PBX is an old telephone exchange which requires lot of maintenance and huge manpower, extra wiring for new connection and extension is difficult to handle. It is less secure and less flexible. It requires extra wiring for new extension which is very expensive and it does not support advance features like voicemail, call waiting, caller ID etc.

Voice over IP (VOIP) is one of the most exciting new development emerging within the telephony market. Wireless VOIP utilizes wireless LAN technology, the same wireless infrastructure used for the corporate network, in order to communicate. The main goal is to overcome the problem of PBX by implementing IP-PBX.

In public or private organizations there is often a need to convey a message to large number of people so this can be done using voice calls, a recorded message can be sent to the customers using IVR. The call blasting technique replaces the huge labour required for making phone calls. Number of customer can be called with in a single click and this also saves the time. Using raspberry pi instead of old PBX system reduces the cost factor.

II. LITERATURE REVIEW

Naktal Moaid Edan, et-al in [3], paper titled “Drawbacks of Inter-Asterisk Exchange Protocol in V.VoIP” has discussed limitations of the IAX2 protocol in a real world implementation of V.VoIP, primarily of its quality of video calls, based on an Asterisk server. Including the contradictions in the IAX2 standard and compare it with its related work over various issues, such as quality of service, security, CODECs, port, frames, etc.

Mohammad Masudur Rahman, et-al in [4], paper titled “VoIP Implementation Using Asterisk PBX” has discussed focus on the introduction of VoIP and its implementation by the use of Asterisk PBX. The paper has presented the project objective with some introductory theory about VOIP. The project included report on the viability of utilizing the Asterisk PBX as a foundation for conducting research performance studies for VoIP.

David Villacis, et-al in [5], paper titled as “performance analysis of VoIP services over wifi based systems” has discussed a performance analysis about the capabilities of Alix board for handling VoIP over WiFi based systems with an embedded Asterisk server and studied the characteristics of all components of the Alix board to determine the possible options for operating systems that can run within this board using an Asterisk server.

Naser K.A. Aljami, et-al in [6], paper titled as “Performance Evaluation of VoIP Protocols within Certain Number of Calls: Jitter” has discussed the comparison of the two widely common signaling protocols, Inter-Asterisk eXchange Protocol (IAX) and the VoIP extension of the extensible messaging and presence protocol. Each one of the chosen protocols has its methods to exchange the data between the users. Call setup and teardown sessions are out of this study.

III. METHODOLOGY USED

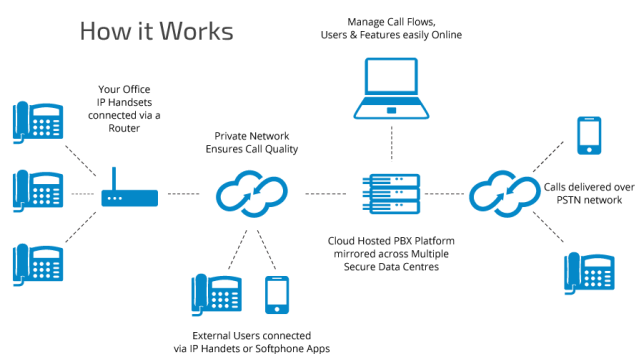
Call Blasting is what we call Simultaneous Call Forwarding. If you have more than one call forwarding number on an extension, Call Blasting will ring each line simultaneously to reduce wait times for your callers and send

a pre-recorded message to all the receivers. Using this technique, you can also perform IVR(Interactive Voice Response) blasting which will also send a pre-recorded message with a set of additional instructions.

This concept is achieved with the help of simplified module of Raspberry Pi along with various open source resources. For configuring Raspberry Pi, Putty Software along with “win32diskimager-v0.7” for partitioning and flashing .image file.

The latest version of the Raspberry pi that is used is Raspberry pi 3 Model B having 1GB RAM LPDDR2, a Broadcom VideoCore IV GPU, 4× ARM Cortex-A53, 1.2GHz.

III. CASE STUDY PICTORIAL VIEW



IV. CASE STUDY ANALYSIS

Execution of call blasting is done by using raspberry pi module in which asterisk is run. So first, Raspberry pi needs to be configured. For the further procedure, an external display, keyboard and mouse is required. The storage unit in raspberry pi is the memory card. The memory card is partitioned and configured. In this way raspberry pi is setup for booting procedure.

After booting Raspberry Pi, Asterisk is run and is connected through WiFi. Now, once the Raspberry Pi is configured further work can be done on the Putty software. Putty requires the internet protocol address. In this process a cracked dongle is required to be installed in the “putty”.

For implementing call blasting a database is required which contains the contacts to be blasted and also the pre-recorded message files. A free domain is available in which audio file needs to be uploaded and hence call blasting is implemented.

The basic aim is to create an encrypted module for reducing the cost. The similar procedure is currently implemented in which large number of servers are required which increases the cost. In our project a compact and portable raspberry pi is used which acts as a server. A single dongle can be used to blast the contacts and for a greater number of contacts quantity of dongles can be increased.

V. KEY FEATURES

- To send thousands of messages instantly to customers, students or employees.
- Economic
- No internet required
- No manpower required for operation
- Low maintenance
- Convenient to use

VI. CONCLUSION

The available call blasting system uses internet servers which are costly to install. To overcome this, call blasting system is executed on hardware basis which is inexpensive. This system provides encryption as it doesn't require internet to access it for any updating and this will benefit any firm for marketing where this feature will be installed.

REFERENCES

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