



International Journal of Intellectual Advancements and Research in Engineering Computations

IVR communication system

1. KIRUTHIKA T (I- MBA), K.S.R. College of Engineering

PH – 9840022653 E-mail – kiruthikakkt@gmail.com

2. SASIREKA S (I- MBA), K.S.R. College of Engineering

PH – 9003579196 E-mail – tweetyyasi@gmail.com

Abstract:

The main theme of this project is to define the relationship between the number of calls made in an Asterisk server and use of the processor in this server as the processor is one of the major hardware resources. The concept is based on IP PBX. An IPPBX is a complete telephony system that provides telephone calls over IP data network. The Raspberry Pi is a credit card –size single board computer that does not include a built-in hard disk or solid –state drive, but it uses an SD card for booting and persistent storage which is use for mounting Asterisk code. With the construction of 3G network, value -added services will usher in a new development height for mobile operators. The IVR (Interactive Voice Response) business is one of the great market potential business forms. It becomes particularly important to create a good IVR business market. However, this depends on whether the operator could provide welled-qualified quality control system and automatic dial-rest mechanism for service providers. Therefore, in consideration of the dial-test difficulties cost by IVR service flow complexities in current IVR systems and based on workflow engine implementing flow operations. This paper analysed and discussed the IVR work process design, as well as the main configuration files of OS-Workflow, then put forward a visual process designer idea. And finally the IVR automatic dial-test system is designed.

LINTRODUCTION:

IVR is a technology that allows a computer to interact with humans through voice & DTMF tones via keypad. The interactive voice response, it is a general call for

wireless value-added voice business. Once mobile users dial a specific access number, he can listen to on-demand information or required to participate in voice chat, make friends and other interactive services according the operation tips [1]. IVR service is one of great prospects among various business forms. IVR is rich and varied in functions which meet the diverse needs for users, such as the voice-type magazines. The general principle of IVR service is as follows the user calls a specific access number – PSTN or PLMN telephone network switches call and request to the voice platform – voice platform deals with user’s request information – voice platform interacts with user – voice platform synchronized time billing, the user log records and so on[2]. Owing to the diversity and complexity of IVR service in the current market and most of IVR test operated manually, these make it high cost and low efficiency. But the dial-test system is aiming at the measurements simplifying, translation of the tedious Repeat keystrokes into the computer generated automatically, through the dial-test recording relevant input and output information process and generating a test result document or a quality report. The result being, the tester can easily view the completion of the test tasks as long as landing the system [3]. The Voice over Internet Protocol (VoIP) technology has become the most used Internet in terms of server processors. Obviously the Voice over Internet Protocol (VoIP) technology is used in terms of communication as

well in terms of Internet. The use of various protocol standards shows the orientation of research towards this technology phone by manufacturers. In addition we are now witnessing a convergence towards "everything over IP"[4]. Interactive voice response (IVR) is an automated technology which engages the customer that interacts with callers, shares information and routes calls to the appropriate recipient. IVR system allows customers to interact with a company's host system, with the help of telephone keypad or by speech recognition.. IVR is rich and varied in functions which meet the diverse needs for users, such as the voice-type magazines. After which services can be inquired about the system to the customer through the IVR dialogue [1]. IVR systems are used to respond with pre-recorded or dynamically generated audio to further direct users and inform how to proceed further. IVR systems deployed in the network are sized to handle large call volumes and also used for outbound calling. IVR systems are intelligent than many predictive dialler systems. Applications of IVR system are; used for mobile purchases, banking payments and services, retail orders, utilities, traveling information and telling weather conditions. The main purpose of an IVR system is to take input, process it and return an appropriate result. The term voice response unit (VRU) is used in the same way as well. Despite the increase in IVR technology during the 1970s, this technology was considered complex and expensive for automating tasks. It is essential for good call centres to be able to handle large amount of calls simultaneously, this is because among large companies hundreds of phone calls might come simultaneously. Because of this reason, applying effective call managing options (call queuing, call forwarding, call holding, etc.) has become inevitable [5]. To each and every well functioning call centre has an Interactive Voice Response (IVR) menu taking a lot of toll from the agents as it helps the customers getting access to the basic services in connection which usually contains their account details or the products or the type of services which are available. It is very usual that callers can get access to some simple

actions through the IVR or can also to be forwarded to a live agent. The Voice over Internet Protocol (VoIP) technology is used in terms of communication as well in terms of Internet. To get the better understanding about IVR, it is a voice menu system that can direct the customers to the menu points of their need. It receives the responses from the customer which is given by their touch-tone telephone keypad for entry, also called as DTMF signal. Instead of these DTMF signalling, IVR systems Research Article Volume 7 Issue No.3 International Journal of Engineering Science and Computing, March 2017 4916 <http://ijesc.org/> can be also controlled by human voice commands also termed as voice control [6].

II. PROBLEM STATEMENT EPABX: It is the internal telephone system where all the employees can communicate with each other. One of the main problems in Electronic Private Branch Exchange is a complex wiring. Existing system have limited number of extension due to wired structure. In this telephone system there is an absence of voice mail facility .Flexibility is not provided in the EPBAX system.

III. OBJECTIVES

The main objective of this project is to implement an IPPBX, which is a complete telephony system that provides telephone calls over the network. An IPPBX is a PBX phone system which will uses IP (Internet Protocol) data networks to manage call switching, route calls handle other messaging. This project deals with the system that will be used for calling without internet or Wi-Fi service. The proposed system will reduce wiring complexities as it is wireless network. The proposed system has an easy user manipulation since there is not any allocation of particular location with respect to changed position of client.

IV. PROPOSED PROJECT PLAN

An IP PBX is a complete telephony system that provides telephone calls over the network. All conversations are sent as data packets over the network. The technology

includes advanced communication features and a significant dose of worry-free scalability and robustness is provided. Enterprises do not need to disrupt their current external communication infrastructure and operations. With an IP PBX deployed, an enterprise can keep its regular telephone numbers. In this way, IP PBX switches the local calls over the data network inside the enterprise and allows all users to share same external phone lines. With an IP PBX we can use easily a VOIP Provider for long distance and international calls and monthly savings are significant. If we have branch offices, we can easily connect phone systems between branches and make free phone calls. An IP Telephone system allows us to connect hardware IP phones directly to a standard computer network port. Software phones can be installed directly on the PC. We can eliminate the phone wiring and make adding or moving of extensions much easier. In new offices we can completely eliminate the wiring extra ports to be used by the office phone system. As IVR system is based on VoIP technology, some VoIP components needs to be added to the references in IDE in order to define the default behavior of the IVR in the simplest way. First, simple softphone is needed to be created that has the same functions as an ordinary telephone. It is necessary, because the IVR need to be able to receive calls coming from other telephones so that incoming calls can be managed with the help of this softphone. Now registration for SIP Account to the server is to be done by using the Register method. The system can create the phone line with the help of the account and allowing the IVR can be called. Finally, registration to the phone line is to be done. Voice over Internet protocol (VoIP) integrates voice with other forms of communication and this saves clients money on long-distance charges. But there's more to this deploying on-premise VoIP than just putting new phones on desks. In this installment of series on VoIP services, we explore VoIP implementation of best practices for systems integrators (SIs) to offer these services to their clients.

V. IMPLEMENTATION

Implementing IVR is the final phase of project. The IVR program was installed in a live environment during this period, with real and end users utilizing the features of this new program. The performance of the IVR was monitored dev closely by the developers during this implementation phase. Our IVR system also includes a Windows PC with the software and computer telephony boards. When combined with this extensive Computer and telephony software, both of the inbound calling distribution and outbound calling campaigns are performed. Besides offering these full featured phone systems and software solutions, IVR outsourcing services are also available at multiple call centers. The systems approach to the design and development of IVR applications for its system's and service clients. The practices of IVR should be known when designing interactive voice response applications. The basic steps and functions that are performed by management and development team are consulting that includes IVR application. Design involves designing specification of the application. Development includes task assigning. Programming includes coding of the IVR application. Testing, implementation and ends with management.

VI. SYSTEM MODEL

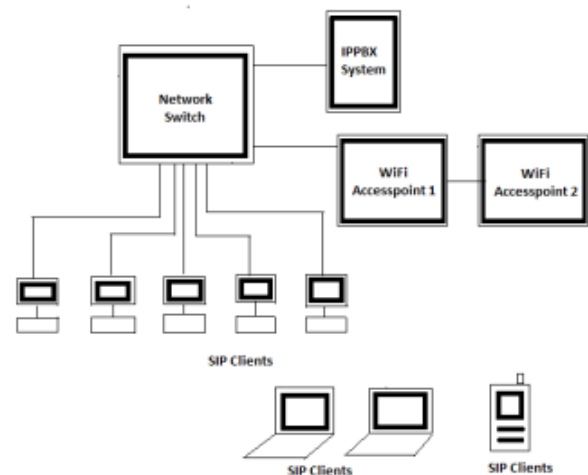


Figure.1. Network Architecture

The SIP clients are in network and IVR communication is established between them. IVR is a technique called interactive voice response which helps device communicates with each other. The Wifi access point is

responsible for generation of network. All the devices which are in the network can communicate with each other. The operating system is mounted in the SD card. Raspbian is the OS used which is implemented on the server kit of raspberry pi. An IP Telephone system allows us to connect hardware IP phones directly to a standard computer network port. Software phones can be installed directly on the PC. We can eliminate the phone wiring and make adding or moving of extensions much easier. In new offices we can completely eliminate the wiring extra ports to be used by the office phone system.

V. CONCLUSION

In this project we are implementing a communication system which is free of cost. In this communication system there will free voice calling without internet or wifi, so for this we have created a wireless network by connecting hardware devices. The installation of Raspbian was successfully achieved. The configuration of router according to network need was setup. The DHCP server was successfully created. The connection between several wireless devices was achieved over DHCP server. The wireless devices such as laptop and mobile were connected in the network and successfully executed.

VI. REFERENCES

- [1]. Ndaohialy Manda-Vy Ravonimanantsoa, Andry Auguste Randriamitantsoa, and Malalaitiana Hajasoana Ramafiarisona, "The impact of calls to the processor on a server PABX" *International Journal of Future Computer and Communication*, Vol. 1, No. 1, June 2012.
- [2]. Xia Xiaofeng, Xiong Ao, Liu Ya, Meng Xiangping "The Design of IVR Dial-test System Based on Os-Workflow Engine" *International Forum on Computer Science Technology and Applications* 2009.
- [3]. Recep Talha Küyük and Hasan Basri Çelebi "Interoperability of Secure VoIP Terminals" *First International Black Sea Conference on Communications and Networking* 2013.
- [4]. Kranti Kumar Appari "Customized IVR Implementation Using Voicexml on SIP (Voip) Communication Platform" *International Journal of*

Modern Engineering Research (IJMER) Vol. 2, Issue. 6, Nov.-Dec. 2012.

[5]. Rahul C. Vaidya, and Prof. S.S. Kulkarni "Voice over IP Mobile Telephony Using WIFI" *International Journal of Scientific & Engineering Research* Volume 3, Issue 12, December-2012.

[6]. Mark Spencer, "Introduction to the Asterisk Open Source PBX", July 9, 2002 *Libre Software Meeting* 2002.