METAMORPHOSIS IN VOIP CLOUD COMPUTING SERVICES USED IN VOIP

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ABSTRACT

Computing is undergoing a seismic shift from client/server to the cloud, a shift similar in importance and impact to the transition from mainframe to client/server .The emergence of cloud computing as one of the dominant technology trends in coming decades, is virtualization platform that provides a services to different technology in IT infrastructure. One of those technologies is Voice over internet protocol (VoIP).VoIP is IP enabled services that involved in the delivery on voice communication and multimedia sessions over IP. The cloud computing represents a significant shift in the VoIP technology. This paper presents the survey of cloud computing. It includes a discussion of cloud computing service, characteristics of cloud. This research also intended to suggest the revolution in VoIP technology using the cloud computing services that helps to provide the reliable services for the communication industries using the integrated framework of the cloud.
Keywords: Cloud Computing, SaaS, VoIP, Voice.

1. INTRODUCTION

In the era of today's IT world, the user wants more data to share and access under the one roof. A cloud the "*Lion's Share*". It provides resource sharing environments to enable sharing in terms of scalable and flexible infrastructures, middleware and application development platforms, and business enterprises [1].The application, software, management resources are integrated over the cloud; the cloud may be the public or private that helps end user, IT operators to access that cloud through high speed networks. The cloud is sold on demand typically by the minute or the hours and gives the innovation in the distributed computing. The term Cloud Computing refers to both the applications delivered as services over the Internet and the servers and system software in the data centers that provide those services [2]. The cloud computing is the virtual pool of computing resources. [4].the cloud computing provides the powerful platform for the IT services to virtualized the resources or the application software. It can deploy the resources over the network dynamically and availability of the resources over the network without storing the data on the physical devices. It provides a mandatory application program environment [10].The cloud computing is a paradigm shift to computing that sees and delivered computing as services [3], providing Software as a Service (SaaS), Platform as a Service (PaaS), Infrastructure as a Service (IaaS).
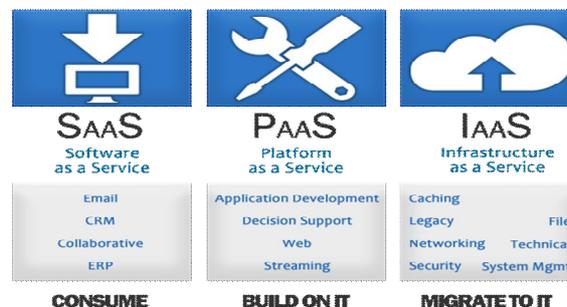

Figure 1 Layers of Cloud Computing [4].

1.1 Software as a Service (SaaS)
End user application is delivered as a service. Platform and infrastructure is abstracted, and can deploy and managed with less effort [5]. The Service provider gives some kinds of privileged to the end user while deployment of application over the cloud. The services offered in the software infrastructure layer can be separated into three different subcategories: computational resources, data storage, and communication [15].

1.2 Platform as a Service (PaaS):
Application platform onto which user application and services are deployed [5]. PaaS also provides different services like application development, decision support, web, streaming that provides by the service provider to IT operators, IT Administrator.

1.3 Infrastructure as a Service (IaaS):
Physical infrastructure is abstracted to provide computing, storage, and networking as a service, avoiding the expense and need for dedicated systems [5]. IaaS offering the infrastructure resources as a service. It includes the services like security, networking, Caching.

2. CHARACTERISTICS OF CLOUD COMPUTING
a) Broad network access Cloud Capabilities is available over the network and accessed through standard mechanisms that promote use by heterogeneous [11] computer or the business organization hat implemented the cloud.

b) On demand self service [12] any end user can access the deployed application over the public cloud.

c) The cloud computing provides the PaaS service that helps to support the different infrastructure. The cloud computing also provides the Dynamic computing infrastructure high levels of availability and redundancy and it should be able to move services around to quickly respond to workload demands [13].

d) Cloud Computing the operating level or network level security.

3. VOICE OVER INTERNET PROTOCOL (VoIP):
Communications is the one enabler of doing things in your life; it extends from the living room to the boardroom. The telephone is the good way to talk to people without having offer them drinks. In the history of communication system the telephone makes drastic changes that provide the services to communicate with people. The change in lifestyle and technology the telephone is the 4th basic need for the people after "Food, Cloth and Shelter". Decades pass away the technology changes are made in the communication system the different protocols are implemented for the communication.

VoIP is one kind of communication protocol that helps to provide the transmission techniques involved in the delivery of voice communication and multimedia session over Internet Protocol network [14].VoIP commonly known as internet telephony, IP telephony VoIP started in February of 1995 by a small company in Israel called Vocaltec, Inc. Their product, Internet Phone, allowed one user to call another user via their computers, a microphone and a set of speakers. Additionally, this application/product only worked if both the caller and the receiver had the same software setup.

By 1998 some entrepreneurs started to market PC-to-phone and phone-to-phone VoIP solutions. The phone calls were marketed as "Free" nation-wide long distance calls [6].In the past decades due to the unavailability of regular telephone service the VoIP was developed to circumvent the traditional system monopoly on communications and along with avoiding toll charges. With the hype of VoIP the several Communication Company and large organization can use the VoIP technology for diverting their call and data over through the internet.

The classic VoIP technology provides several advantages like transfer the voice over data network by using high speed network. VoIP also services the P2P voice telephony.

4. VoIP PICKS UP AND MOVES TOWARDS THE CLOUD:
In the traditional VoIP, transfer the voice over the data network through different servers. The servers are located on the different geographical area that hard to transfer the voice over the internet. To overcome these kind of pitfalls in the VoIP technology the cloud computing is in the picture the server are integrated on the signal cloud that helps the organization or communication companies to transfer the voice or data over the internet in less expensive and reliable manner.
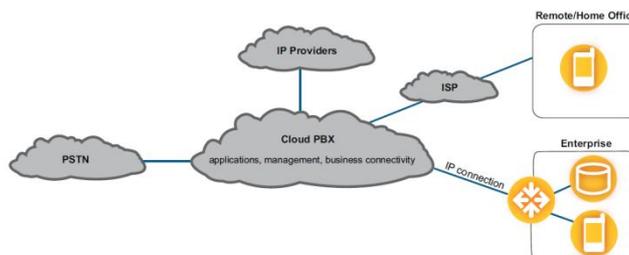
Figure 2 Routing calls through IP using Cloud [7].

The figure 2 Shows that how the VoIP call route using the cloud PBX through the internet. The PSTN (Public Switch Telephone Network) switch the call over the internet through IP (Internet Protocol) in the high speed networks. The voice or data calls can transfer over the cloud that contains the resources or the different business servers that helps to

route the calls to the remote/home office or to the enterprises through different ISP (Internet Service provider). A cloud-based phone system has a cost advantage in overall up-front cost [7]. The cloud computing alliance with VoIP is just not provides the unified communication services but also introducing the entirely new way to build, deploy and scale enterprise communications systems that provide HD voice services along with a platform of advanced apps and features that allow businesses to work in ways they never imagined [8].

The cloud cans also consolidation of voice, data on single network. It gives the simplify infrastructure, operations. It provides the bundle of services on the single cloud. The Software as a service (SaaS) help to deploy the application over the cloud that helps to manages the voice calls over the different networks.

5. ANALYTIC SURVEY OF TRADITIONAL VoIP VS. CLOUD BASED VoIP:
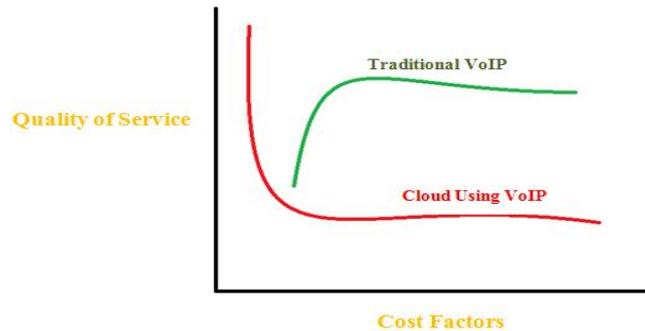

Figure 3 Performance graph

VoIP is a growing reality for operators, consumers and regulators, with strong growth by all metrics [16].In the traditional VoIP network to, transport voice over a data network, the human voice must be "packetized" [7]. All the voices that are transfer over the network are route through different servers that automatically increases the cost of communication and decreases the graph of quality of services that VoIP defined.

The cloud computing services like SaaS helps to deploy the application used over the cloud that helps to provide the good quality service to transfer the voice over the network. The term cloud is referred as a "Collection". Due to that feature the transmission of the voice over the network reduces the cost factor that means all the servers those who participated to transfer the voice are integrated on the single cloud and then rout toward its destination.

6. CONCLUSION:

To achieve the reliable and flexible communication for transferring the voice over the internet by using VoIP services. The VoIP services are integrated with cloud computing to provide the quality of communication services for the business organization and communication companies. The proposed survey will provides an idea on the current trends in VoIP technology that integrated with cloud system. The VoIP and cloud computing the two techniques with joint future makes the extravagant changes in future of communication network.

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