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CLOUD COMPUTING

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ABSTRACT

The term "cloud computing" is a recent buzzword in the IT world. Behind this fancy poetic phrase there lies a true picture of the future of computing for both in technical perspective and social perspective. Though the term "Cloud Computing" is recent but the idea of centralizing computation and storage in distributed data centres maintained by third party companies is not new but it came in way back in 1990s along with distributed computing approaches like grid computing. Cloud computing is aimed at providing IT as a service to the cloudusers on-demand basis with greater flexibility, availability, reliability and scalability with utility computing model. This new paradigm of computing has an immense potential in it to be used in the field of e-governance and in rural development perspective in developing countries like India.In it essence,cloud computing is the idea of taking all the heavy lifting involved in crunching and processing data away from the device you carry around to sit and work and moving that work to huge computer clusters from far away space. The internet becomes cloud and data,work and applications are available from any device with which you are connected to internet,anywhere in the world.

Keywords: Agility, Broadband, Cloud, DataPortability, Flexibility, Hybrid, Interoperability, Infrastructure, Optimization, Private, Provisioning, Public, Security.

I. INTRODUCTION:

Cloud computing is a method for delivering information technology services in which resources are retrieved from internet through web based tools and applications, as opposed to a direct connection to a server. It is called cloud computing because the information being accessed is found in the cloud and doesnot require a user to be specified place to gain access to it. Companies providing cloud services enable users to store files and applications on remote servers .Cloud compting recently developing paradigm of distributed computing. In 1969 [16] L. Kleinrock anticipated, "As of now, computer networks are still in their infancy. But as they grow up and become more sophisticated, we will probably see the spread of 'computer utilities' which, like present electric and telephone utilities, will service individual homes and offices across the country." The term Cloud computing was given prominence first by Google's CEO Eric Schmidt in So the birth of cloud computing is very recent phenomena although its root belongs to some old ideas with new business, technical and social perspectives. From the architectural point of view cloud is naturally build on an existing grid based architecture and uses the grid services and adds some technologies like virtualization and some business models.

II. TYPES OF CLOUD COMPUTING

Cloud computing is not a single piece of technology, like a microchip or a cell phone. Rather, it's a system, primarily comprised of three services: infrastructure as a service (IaaS), software as a service (Saas) and platform as a service (PaaS). SaaS is expected to experience the fastest growth, followed by IaaS.

Software as a Service (SaaS): SaaS involves the licensure of a software application to customers. Licenses are typically provided through a pay-as-you-go model or on-demand. This rapidly growing market could provide an excellent investment opportunity, with a Goldman Sachs report projecting that by 2018, 59% of the total cloud workloads will be SaaS.

Infrastructure as a Service (IaaS): Infrastructure as a service involves a method for delivering everything from operating systems to servers and storage through IP-based connectivity as part of an on-demand service. Clients can avoid the need to purchase software or servers, and instead procure these resources in an outsourced, on-demand service.

Platform as a Service (PaaS): Of the three layers of cloud-based computing, PaaS is considered the most complex. PaaS shares some similarities with SaaS, the primary difference being that instead of delivering software online, it is actually a platform for creating software that is delivered via the internet. A report by Forrester indicates that PaaS solutions are expected to generate $44 billion in revenues by the year 2020.

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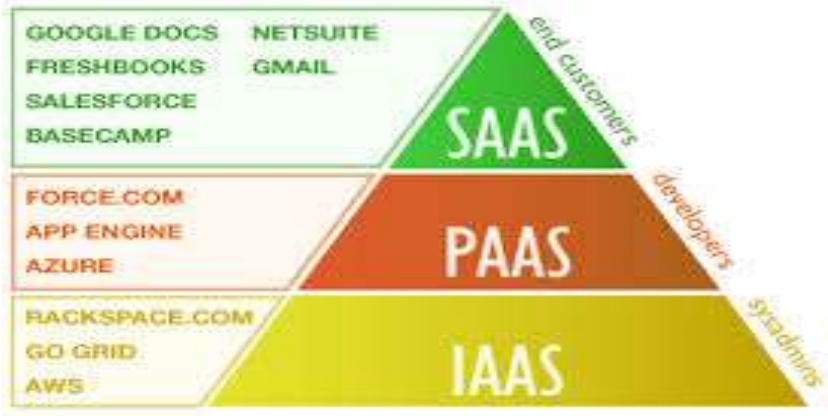

III. ADVANTAGES OF CLOUD COMPUTING

The rise of cloud-based software has offered companies from all sectors a number of benefits, including the ability to use software from any device, either via a native app or a browser. As a result, users are able to carry over their files and settings to other devices in a completely seamless manner. Cloud computing is about far more than just accessing files on multiple devices, however. Cloud-computing services also make it possible for users to back up their music, files and photos, ensuring that those files are immediately available in the event of a hard drive crash.

Cloud computing offers big businesses some serious cost-saving potential. Before the cloud became a viable alternative, companies were required to purchase, construct and maintain costly technology and infrastructure. Now, instead of investing millions in huge server centres and intricate, global IT departments that require constant upgrades, a firm can use "lite" versions of workstations with lightning fast internet connections, and the workers will interact with the cloud online to create presentations, spreadsheets and interact with company software.

Individuals find that when they upload photos, documents, and videos to the cloud and then retrieve them at their convenience, it saves storage space on their desk tops or laptops. Additionally, the cloud-like structure allows users to upgrade software more quickly – because software companies can offer their products via the web rather than through more traditional, tangible methods involving discs or flash drives. In 2013, Adobe Systems announced all subsequent versions of Photoshop, as well as other components of its Creative Suite, would only be available through an internet-based subscription. This allows users to download new versions and fixes to their programs easily.

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IV. DISADVANTAGES OF CLOUD COMPUTING

With all of the speed, efficiencies and innovations of cloud computing come risks.

Initially, security was seen as a detractor from using the cloud, especially when it came to sensitive medical records and financial information. While regulations are forcing cloud computing services to shore up their security and compliance measures, it remains an ongoing issue. Media headlines are constantly screaming about data breaches at this or that company, in which sensitive information has made its way into the hands of malicious hackers who may delete, manipulate or otherwise exploit the data (though, according to some reports, most of the data breeches have been with on-site systems, not those in the cloud).

Encryption protects vital information, but if the encryption key is lost, the data disappears.

Servers maintained by cloud computing companies can fall victim to a natural disasters, internal bugs and power outages, too. And unfortunately, the geographical reach of cloud computing cuts both ways: A blackout in California could paralyze users In New York; a firm in Texas could lose its data if something causes its Maine-based provider to crash.

Ultimately, as with any new technology, there is a learning curve for employees and managers. But with many individuals accessing and manipulating information through a single portal, inadvertent mistakes can transfer across an entire system.

V.CONCLUSION

Cloud computing is a newly developing paradigm of distributed computing. Virtualization in combination with utility computing model can make a diff erence in the IT industry and as well as in social perspective. Though cloud computing is still in its infancy but its clearly gaining momentum. Organizations like Google, Yahoo, Amazon are already providing cloud services. The products like Google App-Engine, Amazon EC2, Windows Azure are capturing the market with their ease of use, availability aspects and utility computing model. Users don't have to be worried about the hinges of distributed programming as they are taken care of by the cloud providers. They can devote more on their own domain work rather than these administrative works. Business organizations are also showing increasing interest to indulge themselves into using cloud services. There are many open research issues in this domain like security aspect in the cloud, virtual machine migration, dealing with large data for analysis purposes etc. In developing counties like India cloud computing can be applied in the e-governance and rural development with great success

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