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STUDY ON CLOUD COMPUTING

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Abstract: Cloud computing is a technology that enables the users to access shared pools of configurable systems resources and higher-level services that can be rapidly provisioned with minimal management effort, often over the Internet. The term "cloud computing" was popularized with Amazon.com releasing its Elastic Compute Cloud product in 2006, references to the phrase "cloud computing" appeared as early as 1996, with the first known mention in a Compaq internal document.The cloud symbol was used to represent networks of computing equipment in the original ARPANET and CSNET. The word cloud was used as a metaphor for the Internet and a standardized cloud-like shape was used to denote a network on telephony schematics. With this simplification, the implication is that the specifics of how the end points of a network are connected are not relevant for the purposes of understanding the diagram.The term cloud was used to refer to platforms for distributed computing as early as 1993, when Apple spin-off General Magic and AT&T used it in describing their (paired) Telescript and PersonaLink technologies.

Keywords:Cloud computing, networks, wireless, high-levelservices, computing technology, internet.

I.INTRODUCTION

Cloud computing is the use of programs hosted on a Web-based service. A network of large computers that form the cloud handles the storage and function of a program that would otherwise create a heavy workload for a smaller computer.The goal of cloud computing is to allow users to take benefit from all of these technologies, without the need for deep knowledge about or expertise with each one of them. The cloud aims to cut costs, and helps the users focus on their core business instead of being impeded by IT obstacles. The main enabling technology for cloud computing is virtualization. Virtualization software separates a physical computing device into one or more "virtual" devices, each of which can be easily used and managed to perform computing tasks.

II.BENEFITS OF CLOUD COMPUTING

Cloud computing is the use of programs hosted on a Web-based service. A network of large computers that form the cloud handles the storage and function of a program that would otherwise create a heavy workload for a smaller computer. Another benefit of cloud computing is that by storing the majority of space consuming files on a cloud server, the host computer can potentially free up a lot more computing power. This can result in increased performance across the board, as more memory can be devoted to computing tasks as opposed to storage. A further disadvantage however, is that by storing the majority of data on a remote cloud server, the user may be hindered from accessing data is a problem occurs with the host server. The potential inconvenience and cost of this problem can be limited however, by keeping locally backed up copies of data on external hard drives as a precaution. A final advantage of using cloud storage is that data can be protected from problems or damage to local machines. Even if a computer stops working for example, no data stored on the cloud will be lost, and can easily be transferred to a new machine when needed.

III.FREE CLOUD STROAGE

Free cloud storage is available by signing up with services such as OneDrive, Dropbox and Google Drive. OneDrive and Google Drive offer 15GB of free cloud storage, while Dropbox offers 2GB, as of August 2015. OneDrive and Dropbox offer opportunities for extra free storage if certain conditions are met, such as inviting friends, completing activities, using apps or linking social media accounts. Additionally, Google Drive allows users to upload an unlimited number of images that are below a specific resolution.

IV.RISK INVLOVED IN CLOUD COMPUTING

Cloud computing has now emerged to become one of the best methods for companies wanting to revamp and enhance their IT infrastructures. However, there are certain issues and problems associated with cloud computing. Needless to say, it is very advantageous for everyone to adapt to new technology, but it is also wise to recognize some of the risks associated with this technology, so as to avoid the possibility of future issues. Here, we bring you information on the risks associated with cloud computing, along with suggestions on

how to deal with the same. Generally speaking, most cloud computing service providers are already familiar with the issues involved and can deal with them right at the beginning. This makes the process more of less safe for you. But it also implies that you make wise decisions while choosing your service provider. You need to clarify all your doubts and issues with your provider before choosing them.

V.SECURITY IN CLOUD COMPUTING

Security is one of the most major issues of cloud computing. Being entirely based on the Internet makes it vulnerable to hack attacks. But logically speaking, all the modern IT systems today are invariably connected to the Internet. Hence, the level of vulnerability here is much the same as everywhere else. Of course, the fact that cloud computing is a distributed network also makes it easier for companies to quickly recover from such attacks. What you need to do to minimize the problem is to study and examine your provider's security policies, before going ahead and signing a contract with them.

VI.TYPES OF CLOUD COMPUTING

- **PRIVATE CLOUD**

Private cloud is cloud infrastructure operated solely for a single organization, whether managed internally or by a third-party, and hosted either internally or externally. Undertaking a private cloud project requires significant engagement to virtualize the business environment, and requires the organization to reevaluate decisions about existing resources. It can improve business, but every step in the project raises security issues that must be addressed to prevent serious vulnerabilities. Self-run data centers are generally capital intensive. They have a significant physical footprint, requiring allocations of space, hardware, and environmental controls. These assets have to be refreshed periodically, resulting in additional capital expenditures. They have attracted criticism because users "still have to buy, build, and manage them" and thus do not benefit from less hands-on management, essentially lacking the economic model that makes cloud computing such an intriguing concept".

- **PUBLIC CLOUD**

A cloud is called a "public cloud" when the services are rendered over a network that is open for public use. Public cloud services may be free. Technically there may be little or no difference between public and private cloud architecture, however, security consideration may be substantially different for services (applications, storage, and other resources) that are made available by a service provider for a public audience and when communication is effected over a non-trusted network. Generally, public cloud service providers like Amazon Web Services (AWS), Microsoft and Google own and operate the infrastructure at their data center and access is generally via the Internet. AWS and Microsoft also offer direct connect services called "AWS Direct Connect" and "Azure ExpressRoute" respectively, such connections require customers to purchase or lease a private connection to a peering point offered by the cloud provider.

- **HYBRID CLOUD**

Hybrid cloud is a composition of two or more clouds (private, community or public) that remain distinct entities but are bound together, offering the benefits of multiple deployment models. Hybrid cloud can also mean the ability to connect collocation, managed and/or dedicated services with cloud resources. Gartner,Inc. defines a hybrid cloud service as a cloud computing service that is composed of some combination of private, public and community cloud services, from different service providers.A hybrid cloud service crosses isolation and provider boundaries so that it can't be simply put in one category of private, public, or community cloud service. It allows one to extend either the capacity or the capability of a cloud service, by aggregation, integration or customization with another cloud service. Varied use cases for hybrid cloud composition exist. For example, an organization may store sensitive client data in house on a private cloud application, but interconnect that application to a business intelligence application provided on a public cloud as a software service. This example of hybrid cloud extends the capabilities of the enterprise to deliver a specific business service through the addition of externally available public cloud services. Hybrid cloud adoption depends on a number of factors such as data security and compliance requirements, level of control needed over data, and the applications an organization uses. Another example of hybrid cloud is one where IT organizations use public cloud computing resources to meet temporary capacity needs that cannot be met by the private cloud. This capability enables hybrid clouds to employ cloud bursting for scaling across clouds. Cloud bursting is an application deployment model in which an application runs in a private cloud or data center and "bursts" to a public cloud when the demand for computing capacity increases. A primary advantage of cloud bursting and a hybrid cloud model is that an organization pays for extra compute resources only when they are needed. Cloud bursting enables data centers to create an in-house IT infrastructure that supports average workloads, and use cloud resources from public or private clouds, during spikes in processing demands. The specialized model of hybrid cloud, which is built atop heterogeneous hardware, is called "Cross-platform Hybrid Cloud". A cross-platform hybrid cloud is usually powered by different CPU architectures, for example, x86-64 and ARM, underneath. Users can transparently deploy and scale applications without knowledge of the cloud's hardware diversity. This kind of cloud emerges from the raise of ARM-based system-on-chip for server-class computing.

VII.LIMITATION AND DISADVANTAGE

According to Bruce Schneier, "The downside is that you will have limited customization options. Cloud computing is cheaper because of economics of scale, and like any out sourced task you tend to get what you get. A restaurant with a limited menu is cheaper than a personal chef who can cook anything you want. Fewer options at a much cheaper price: it's a feature, not a bug." He also suggests that "the cloud provider might not meet your legal needs" and that businesses need to weigh the benefits of cloud computing against the risks. In cloud computing, the control of the back end infrastructure is limited to the cloud vendor only. Cloud providers often decide on the management policies, which moderates what the cloud users are able to do with their deployment. Cloud users are also limited to the control and

management of their applications, data and services.This includes data caps, which are placed on cloud users by the cloud vendor allocating certain amount of bandwidth for each customer and are often shared among other cloud users. Privacy and confidentiality are big concerns in some activities. For instance, sworn translators working under the stipulations of an NDA, might face problems regarding sensitive data that are not encrypted.

VIII.CONCLUSION

While cloud computing is not without its risks, the truth remains that these risks are definitely manageable with some effort taken on the part of the company involved. Once the above issues are resolved, the rest of the process should go on smoothly, thereby providing immense benefits for the said company.

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