

An Analysis of Cloud Computing

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Abstract: Cloud computing is the development of parallel computing, distributed computing, grid computing and virtualization technologies which define the shape of a new era. Cloud computing is an emerging model of business computing. In this paper, we explore the concept of cloud architecture and compares cloud computing with grid computing. i also address the characteristics and applications of several popular cloud computing platforms.

Keywords: Cloud Computing, Hybrid Cloud, Private Cloud, Public Cloud, Community Cloud.

I. INTRODUCTION

Cloud Computing provides surroundings for resource sharing in terms of ascendance frameworks, middleware's and application development platforms, and business applications. The operation models of cloud computing grasp free infrastructure services with value another platform services, subscription-based infrastructure services with supplemental application services, and free services for sellers but sharing of revenues generated from shoppers.

The term Cloud Computing has been out lined in some ways by analyst corporations, academics, business practitioners and IT corporations. Clouds is an oversized pool of simply usable and accessible virtualized resources. These resources may be dynamically reconfigured to regulate to a variable load (scale), permitting additionally for an optimum resource utilization



There is no doubt that cloud computing is that the most famous topic in IT business. Google, Amazon, Yahoo and alternative web service suppliers, IBM, Microsoft and alternative IT vendors have imply their own cloud

computing strategy, numerous medium operators are have place an excellent deal of attention on cloud computing, the terribly low price of cloud computing platform becomes the main focus of the business.

II. CHARACTERSTICS OF CLOUD COMPUTING

In cloud computing, users access the information, applications or the other services with the assistance of a browser notwithstanding the device used and also the user's location. The infrastructure that is mostly provided by a third-party is accessed with the assistance of web. Price is reduced to a major level because the infrastructure is provided by a third-party.

Less IT skills are needed for implementation.

Reliable services are often obtained by the employment of multiple sites that is appropriate for business continuity and disaster recovery.

Sharing of resources and prices amongst an outsized assortment of users permits economical utilization of the infrastructure.

Maintenance is simpler just in case of cloud computing applications as they have not been put in on every user's pc.

Pay per use facility permits activity the usage of application per shopper on regular bases.

Performance is often monitored and so it's ascendible.

Security is often pretty much as good as or higher than ancient systems as a result of suppliers are able to devote resources to resolution security problems that several customers cannot afford. However, security still remains a crucial concern once the information is sort of confidential .

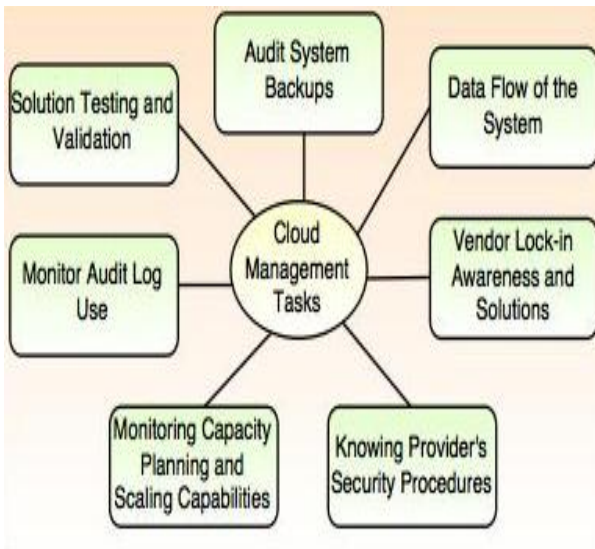
Cloud could be a massive resource pool that you just should buy in keeping with your need; cloud is simply like running water, electric, and gas which will be charged by the quantity that you just used.

Cloud computing makes user get service anyplace, through any reasonably terminal. The resources it needed return from cloud rather than visible entity. Users will attain or share it safely through a simple method, anytime, anywhere. Users will complete a task that can't be completed in an exceedingly single personal computer

III. CLOUD MANAGEMENT

It is the responsibility of cloud provider to manage resources and their performance. Management of

resources includes several aspects of cloud computing such as load balancing, performance, storage, backups, capacity, deployment, etc. The management is essential to access full functionality of resources in the cloud. Cloud Management Tasks The cloud provider performs a number of tasks to ensure efficient use of cloud resources. Here, we will discuss some of them:



Audit System Backups:

It is required to audit the backups timely to ensure restoring of randomly selected files of different users. Backups can be performed in following ways:

Backing up files by the company, from on-site computers to the disks that reside within the cloud.

Backing up files by the cloud provider.

It is necessary to know if cloud provider has encrypted the data, who has access to that data and if the backup is taken at different locations then the user must know the details of those locations.

Data Flow of the System:

The managers are responsible to develop a diagram describing a detailed process flow. This process flow describes the movement of data belonging to an organization throughout the cloud solution.

Vendor Lock-In Awareness and Solutions:

The managers must know the procedure to exit from services of a particular cloud provider. The procedures must be defined to enable the cloud managers to export data of an organization from their system to another cloud provider.

Knowing Provider's Security Procedures:

Managers should know the security plans of the provider for the following services:

- Multitenant use
- E-commerce processing

- Employee screening
- Encryption policy

Monitoring Capacity Planning and Scaling Capabilities:

The managers must know the capacity planning in order to ensure whether the cloud provider is meeting the future capacity requirement for his business or not.

The managers must manage the scaling capabilities in order to ensure services can be scaled up or down as per the user need.

Monitor Audit Log Use:

In order to identify errors in the system, managers must audit the logs on a regular basis.

Solution Testing and Validation:

When the cloud provider offers a solution, it is essential to test it in order to ensure that it gives the correct result and it is error-free. This is necessary for a system to be robust and reliable.

IV. ISSUES IN CLOUD COMPUTING

An easy way to comply with the conference paper formatting requirements is to use this document as a template and simply type your text into it .More and more information on individuals and companies is placed in the cloud; concerns are beginning to grow about just how safe an environment it is? Issues of cloud computing can summarize as follows:

A. Privacy

Cloud computing utilizes the virtual computing technology, users' personal data may be scattered in various virtual data centres rather than stay in the same physical

location, users may leak hidden information when they are accessed cloud computing services. Attackers can analyze the critical task depend on the computing task submitted by the users.

B. Reliability

The cloud servers also experience downtimes and slowdowns as our local server.

C. Legal Issues

Worries stick with safety measures and confidentiality of individual all the way through legislative levels.

D. Compliance

Numerous regulations pertain to the storage and use of data requires regular reporting and audit trails. In addition to the requirements to which customers are

subject, the data centers maintained by cloud providers may also be subject to compliance requirements.

E. Freedom

Cloud computing does not allow users to physically possess the storage of the data, leaving the data storage and control in the hands of cloud providers.

V. DEPLOYMENT OF CLOUD COMPUTING

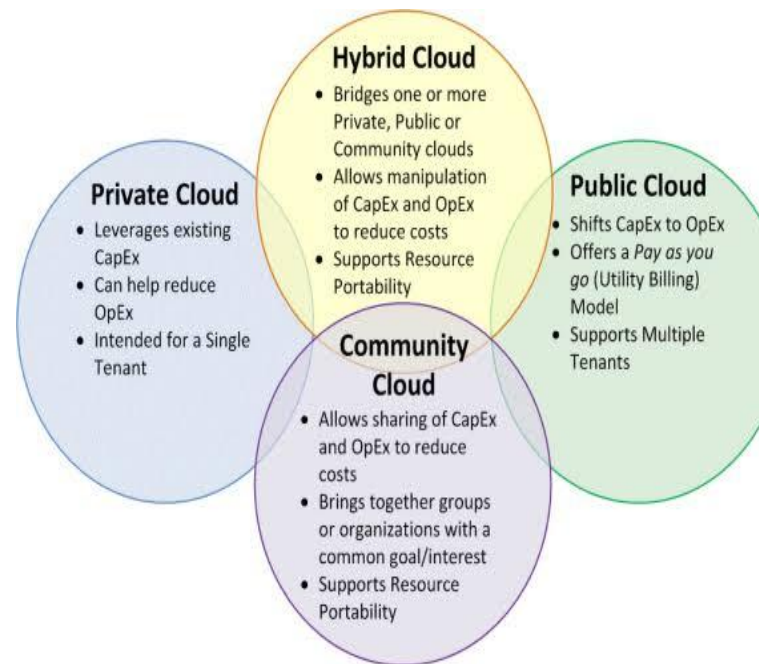
Clouds can generally be deployed according to the owner of the Cloud data centers. A Cloud atmosphere will comprise either one Cloud or multiple Clouds. Thus, it can often be distinguished between single-Cloud environments and multiple-Cloud environments. The subsequent subsections give a classification of single cloud environments consistent with the Cloud information centre possession and a classification of multiple Cloud environments consistent with which sort of Clouds area unit combined

a. **Public cloud** : In public cloud, users access to the services victimization external interfaces which may be offered by internet browsers via web. The users share a standard cloud infrastructure and that they don't seem to be intimate it. though public clouds square measure rather less secure, they're terribly advantageous in costs. For those organizations that cannot afford huge IT investments and do not have a lot of confidential information, public cloud appears to be an honest selection .

b. **Private Cloud**: A private clouds operation is inside associate organization's internal enterprise information centre. The most advantage here is that it's easier to manage security, maintenance and upgrades and conjointly provides additional management over the preparation and use. Non-public cloud is often compared to computer network. Compared to public cloud wherever all the resources and applications were managed by the service supplier, in camera cloud these services square measure pooled along and created out there for the users at the structure level. The resources and applications square measure managed by the organization itself

c. **Community Cloud** : A community cloud is a collaborative effort made for sharing infrastructure between multiple organizations. It forms into a degree of economic scalability and democratic equilibrium. The community cloud is managed and secured by all the participating organization or by a third party service provider.

d. **Hybrid Computing**: Hybrid cloud is a combination of two or more clouds (private, community, or public) that remain unique entities but are bound together by standardized or proprietary technology that enables data and application portability (e.g., cloud bursting for load-balancing between clouds)



VI. SECURITY AND PRIVACY ISSUE

Cloud computing can provide infinite computing resources on demand due to its high scalability in nature, which eliminates the needs for Cloud service providers to plan far ahead on hardware provisioning. Many companies, such as Amazon, Google, Microsoft and so on, accelerate their paces in developing cloud computing systems and enhancing its services providing to a larger amount of users. In this paper, we investigate the security and privacy concerns of current cloud computing systems provided by an amount of companies.

As cloud computing refers to both the applications delivered as services over the Internet and the infrastructures (i.e., the hardware and systems software in the data centers) that provide those services. Based on the investigation security and privacy concerns provided by companies nowadays are not adequate, and consequently result in a big obstacle for users to adapt into the cloud computing systems. Hence, more concerns on security issues, such as availability, confidentiality, data integrity, control, audit and so on, should be taken into account.

APPLICATIONS:

There are a few applications of cloud computing as follows:

- 1) Cloud computing provides dependable and secure data storage centre.
- 2) Cloud computing can realize data sharing between different equipment's.

3) The cloud provides nearly infinite possibility for users to use the internet.

4) Cloud computing does not need high quality equipment for the user and it is easy to use.

VII. CONCLUSIONS

Cloud computing is a new technology wide studied in recent years. Currently there are several cloud platforms that are employed in each in trade and in educational. The way to use these platforms could be a huge issue. During this paper, we have a tendency to delineate the definition, styles, and characteristics of cloud computing, cloud computing services, readying model and challenges of cloud computing. There are several issues in cloud computing. As an example of cloud computing issues is ability, Performance, Service Level

Agreement (SLA), knowledge Confidentiality and measurability, knowledge Integrity, Load equalization, Synchronization in numerous clusters in cloud platform, and standardization, the protection of cloud platform.

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