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APPLICATIONS OF CLOUD STORAGE: ITS BENEFITS AND DISADVANTAGES OF THE CONCEPT

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ABSTRACT

Throughout this paper, we will offer a summary of the benefits and drawbacks of cloud - based services. Cloud storage is a digital information system that makes use of several servers to store data in logical pools, as opposed to traditional storage methods. The storage capacity is purchased by the organisations from the service providers in order to store user, organisation, and application data. Despite the fact that cloud computing is unquestionably advantageous for mid-size to big enterprises, it is not without its drawbacks, particularly for smaller firms. To achieve this goal, this article will provide an in-depth examination of the pros and downsides of Cloud computing technology in order to assist enterprises in completely comprehending and implementing this new computing technology. We believe that the best approach to reap the benefits of cloud computing is to first grasp its advantages and disadvantages, and then to adapt to them appropriately.

KEYWORDS: Cloud, Storage, Computing, Technology, Service.

I. INTRODUCTION

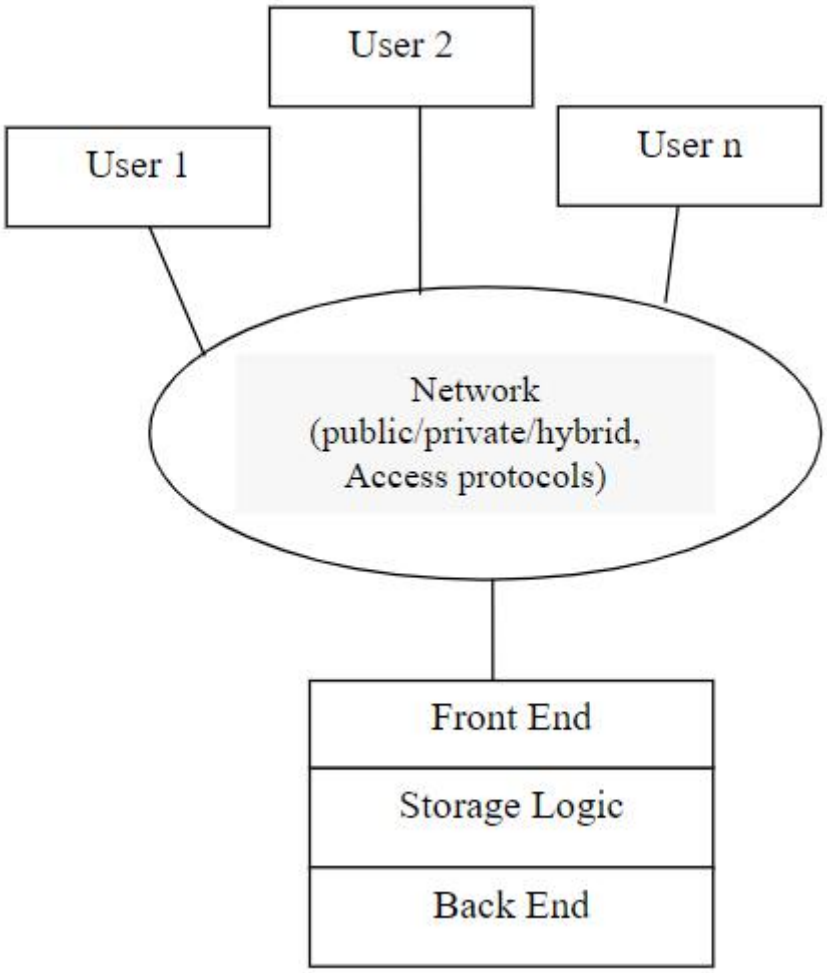
Cloud storage is a concept in Web computing that makes use of a distributed computing system combining several machines that collaborate to do a given activity on request. Furthermore, cloud storage is used to store end-user data within the cloud without the need for a local system; this data may be accessible from any location via network connectivity, and client services can be given as a result of this. In spite of the numerous benefits provided by cloud computing services, several security concerns have been raised for both businesses and private individuals, as these supplement on data distribution, connection, and network connectivity. A review of the organisational and representational strategies used by cloud storage and computing providers is important in order to have a better understanding of the insecurity, hazards, and concerns related with cloud storage and computing providers' services. One challenge is the question of how various customers can share a physical facilitating condition in order for it to be used upon request with remuneration for every utilization-evaluating model available. Infrastructure as a Service (IaaS) is a service paradigm that may be used to address this problem. It provides physical and virtual equipment (such as servers, storage, and system management frameworks) that can be provided and decommissioned quickly using a self-service interface. Individual operating systems (OSs), middleware, and focusing on developing that service their companies are installed on these information technology infrastructure by the clients themselves.

II. ARCHITECTURE OF CLOUD STORAGE

2.1 General

The cloud storage architecture is composed of three components: the front end, middleware, and back end. There are several different types of front ends available, including web service front ends, file-based front ends,

and more conventional front ends. The middleware is made up of storage logic, which is responsible for implementing different functionalities such as replication, demonising, and data positioning algorithms. The back end is responsible for implementing physical data storage.



Because the cloud stores a variety of various types of information from a multitude of various clients, cloud access mechanisms differ from those used for conventional storage. The majority of service suppliers offer a variety of access ways.

2.2 Virtual Storage Architecture

When it comes to cloud computing, one of the most crucial concepts to understand is the notion of a set of funds that can be taken from on request in short iterations. In this case, virtualization is the recent technological breakthrough that makes it feasible. To put it another way, cloud storage is just the offering of virtualized storage on request. The Storage Virtualization Model serves as the foundation for this design. It is composed of three layers: the first is the interface layer, the second is rule and data management, and the third is virtual storage management. Administrators and users are given with interface modes in the Interface Layer, which may include i-commands as well as client internet browsers, among other things. The Rule and Metadata Management layer is divided into two sections: the Upper layer and the under layer. The top layer is composed of two interfaces: one for the client and one for the administrator. Both interfaces have a separate set of permissions. Using the Operating Transactions, a rule is generated for the system. User requests are submitted to the Resource-Based Services and Meta-Based Services through the client interface of the application. Underlying services such as these are available in the under layer. Resource-based services are in charge of resource scheduling, whereas Meta-based services are in charge of

Metadata management. The Virtual Storage Management layer is responsible for the virtualization of physical devices as well as the load balancing of data/file request loads on such devices. URM is in charge of maintaining parameters such as bandwidth and rotational speed. The system keeps track of these characteristics and also keeps track of the routing table. Finally, the system will assemble the collection in logic space and organise it into an overall global structure when it has completed its analysis of all resource nodes. If there is information or a file

III. BENEFITS OF CLOUD STORAGE

Cost

Purchasing physical storage space may be a costly endeavour. Cloud storage, which does not require any hardware, is significantly less expensive per GB than utilising external hard drives. One of the most significant benefits of cloud computing is the cost savings. It allows you to save a significant amount of money on capital expenses because it does not necessitate the purchase of actual gear. In addition, there is no requirement for specially qualified employees to maintain the hardware. The cloud service provider is in charge of the purchasing and management of the hardware.

Accessibility

Cloud storage enables users to access your data from any location with an internet connection, making it ideal for travelling.

Recovery

It is possible to access your files stored in the cloud in the case of a hard drive failure or other hardware malfunctioning. It serves as a fall back plan for your local storage, which is stored on hard discs.

Syncing as well as updating

Whenever you implement adjustments to a file when working with cloud storage, those changes are synchronised and modified throughout all of the platforms from which you are accessing the cloud.

Security

Cloud storage companies enhance the security of their services by incorporating extra levels of encryption. In light of the large number of individuals who have information saved on the internet, cloud storage services go to great efforts to ensure that your files are not accessible by anybody who shouldn't.

IV. CONS OF CLOUD STORAGE

Connection to the Internet

Access

The ability to access cloud-based storage is contingent on having an internet connection. If you are connected to a sluggish network, you may experience difficulties utilizing your storage space. If you find yourself in a situation

where you cannot connect to the internet, you will be unable to access your files.

Charges

When uploading and retrieving data from the cloud, there are additional costs to consider. If you are trying to access a large number of files on a regular basis, this may soon build up.

Hard Disk Drives

According to popular belief, cloud storage will eventually erase our need on hard drives. Some cloud storage providers for businesses, on the other hand, demand actual hard drives as well.

Support

Many service providers direct you to a knowledge base or frequently asked questions (FAQs).

Privacy

You have greater privacy while using the cloud as opposed to using physical storage devices such as hard drives or tapes. So, who is in charge of ensuring that data is protected from unauthorised access? That's a murky area that's still being worked out at the moment.

V. APPLICATIONS OF CLOUD STORAGE IN SCENARIOS

Cloud storage apps are cloud storage providers who offer their services to users via the open Internet in exchange for a fee for the usage of their storage space. Public apps (for people and home users) and corporate applications (for business users) can be classified into two categories based on the platform called and storage services supplied in various ways by the programme.

DropBox

Dropbox was the first firm that offers online storage services in 2007. One of the largest and first applications of cloud storage disc drives was at the University of California, Berkeley. DropBox has been in operation for nine years, and its user base has grown to more than 80 million, with a combined storage capacity of more than 100 billion documents. Despite the fact that a significant proportion of customers are free users, the operational income is nevertheless substantial. Dropbox products' equipment falls within the Amazon storage device category, is simple to use, has good service dependability, and transmits data at a rapid rate. The firm Dropbox is gaining more users as a result of these advantages. Dropbox's user base included corporate leaders, retirees, and students, among others. By releasing an API, Dropbox is allowing third-party software companies to build applications for the service and share in the profits. The number of applications available might raise the user's requirement. The Dropbox programme bundles the account in order to retain the user's relationship with the service provider. There are two sorts of third-party programmes for Dropbox: those that package the membership in order to accomplish the contents of the Internet application and those that sync the Dropbox folder with other applications. Another is, as per the links jump after bundling, to utilise the capabilities of the programme to manage Dropbox files after it has been installed. (Liu et al., 2016). Dropbox's economic strategy is based mostly on the use of free trials and advanced service costs. The first 2GB of storage space is provided for free, after which you will be charged the monthly storage fee based on the amount of space you use. Fifty gigabytes of storage space costs $ 99 per year, while one hundred gigabytes costs $ 199. People may also obtain free space by adding friends to the account, which comes with a Facebook and Twitter account already integrated. It will gradually enhance its package capacity while allowing customers to continue to utilise Dropbox at the same time. While at the same time charging a fee that is developing from third-party software providers, Dropbox distributes profits to these vendors, increasing the excitement of developers to create new apps for the platform.

Google Drive

Google Drive, a cloud storage programme introduced by Google Inc. on April 25, 2012, to replace the existing Google Docs service, was the first of its kind. Users may access Google Drive by logging in with their unified Google account. A strong connectivity and integration existed between Google Drive and Google's other businesses, as well as between Google's own business and its competitors. Users of Google Gmail may send huge files using Google Drive, while Google Drive users' video and photographs in Google Picasa can be shared with other Google Drive users, such as Gmail users, through Google Picasa. Google Drive is compatible with the most popular platforms available today, including Mac, Windows, Android, and iOS, and can be used on devices ranging from mainstream devices such as PCs and tablets to smartphones such as Android phones and iPhones. There are two versions of the major version: a local client version and a web version. A large number of third-party applications are available through the Chrome application store, which is accessible through the Google Drive interface. Furthermore, because Google has a positive image in the market and a large number of consumers, the Google Drive products have promising development potential.

Apple's iCloud

Apple's iCloud Cloud service, which allows users to access and utilise the company's cloud computing infrastructure, was announced on June 7, 2011. Users will receive 5GB of free storage space. The alternative possible payment plan now offers 15GB for 20 US dollars / year, 25GB for 40 US dollars / year, and 55GB for 100 US dollars / year for a total of 100 US dollars each year. Apple's iCloud service brought together its music services, system backup, and other goods. Also available through the iCloud platform is the ability to store personal data on Apple's servers and have them automatically sent to any Apple device owned by a user over a wireless network. These devices include the iPhone, iPod, Touch, iPad, Apple TV, and Mac. Apple Corporation uses iCloud products to backup customers' terminal information on a regular basis across Wi-Fi and other wireless networks, according to the company. Contacts, calendars, documents, images, music, and books are among the items that may be restored. Synchronisation unit is limited in terms of its physical size. The current free account size is 25MB, while the paid account size is 250MB. (Liu et al., 2016). Cloud document synchronisation allows you to generate documents and sync them across all of your Apple devices. People may automatically sync their papers to the cloud, and any changes to the record can be synchronised as well. It is possible for any Apple device images to be automatically saved to the cloud, and for other Apple devices to be synchronised with one another, in order to accomplish cloud photo synchronisation. iCloud can save up to 30 days' worth of images, iOS devices can store the most recent 1000 pictures, and Mac and PC computers can store all of the photos they capture.

VI. CONCLUSION

Cloud computing is one of the most recent technologies, and it is already being utilised by a large number of businesses and organisations throughout the world. When weighing the advantages and downsides of cloud computing, it is important to keep the underlying reasons of the benefits and drawbacks in mind. Cloud vendors are liable for almost any gain they may have derived. When it comes to the disadvantages, the same cannot be said. Conclusion: While cloud computing technology may be a tremendous advantage for businesses, it can also be detrimental if it is not interpreted correctly and utilised. We believe that cloud computing provides small firms with a chance to equalize the activities associated with information technology management. However, this potential is restricted by the downsides of cloud computing, most of which are discussed in this article. When it comes to selecting providers, it is typically preferable to work with organisations who have an established reputation.

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