



# A Study of Cloud Storage challenges

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## Abstract

Cloud computing has been observed as the most exclusively distinct and influencing trendy expression during recent years when it comes in relation to computer evolution. As far as I have observed the name of this branch 'Cloud' is taken so, because it shares a resemblance to the natural clouds present in the sky. We live on the earth's surface and for us; the clouds which are present in the troposphere behave in the same manner irrespective of the position of the end-users, which here refers to us. The end-users can see and use rainwater when all recommended conditions are satisfied. The primary thought behind the cloud is that the data can be sent or retrieved over the web without having any interference due to the complex background procedures of doing so which leads to global access over data in the future. By using cloud-based storage, the respective end-users can store data on multiple third-party or privately hosted servers which are unknown to the end-users, and only developers of cloud solutions know the physical location of the stored data. In most cases, high-performance storage drives are used for quick data transfer. In today's fast-paced and highly technical world, we are witnessing the increase in the size of the data each and every day, the need to handle, manage and store the data has raised the bars and has also been identified as the main problem faced by the end-users to store different files which can be accessed securely through the web interface. In this paper I have given an attempt to specify the methods that are being used for storing data in cloud storage.

**Keywords :** Storage Drives, Cloud computing, servers, Cloud Storage

## 1. INTRODUCTION

In simple terms, Cloud computing can be defined as the process of renting someone's massive computer on a weekly, monthly, or annual basis. A typical cloud computing paradigm involves one or more end-users who can virtually access low or high-performance hardware with a very herculean and powerful hypervisor-based instance of the virtual machine. As observed in the most realistic cases, a vendor usually provides a trial period of its services and after this duration, the services become paid as you go on negotiating the pricing. [1] The end-user can request the vendor for increasing the capacity of computable power, database storage, applications running over web platform, and other IT devices through a cloud ordering stage by means of the web with the pay-as-you-go pricing process. Cloud computing offers different types of assistance in which file storage is the ruling cloud used case. Cloud computing behaves as a background application in our everyday routine. For example, in the entertainment over the web industry, in the information technology, sector and the list goes on. With the help of cloud computing, users can store, recuperate, and reinforce the information, also they can develop new applications, or convey programming in the form of projects, run web servers. Cloud routing is speeding up the internet so cloud firewalls are being used for enhanced detection of security issues and much more. Whenever there are some interests or requirements, the client can get to the respective cloud vendor through the internet [2] and redeem the increase in hardware powers like more CPU cores or main memory.

There are three categories of cloud computing models namely;

**SaaS (software as a Service),**

**PaaS (platform as a service).**

**IaaS (infrastructure as a service).**

## Types of cloud

SaaS is a cloud computing method in which clients are provided with access to a seller's cloud-based web application.

PaaS is a cloud computing model that has been offering services that give clients a virtual cloud Platform at their remote device where they can create but deploys and convey applications on global access able cloud server.

IaaS is a cloud computing method in which a vendor gives its clients access to computing assets such as servers, cloud disk storage, and networking devices such as routers or firewalls as well as intrusion detection systems.

## 2. View on some existing work

In the present-day timeline, we have various cloud computing and cloud storage service providers among which the popular names are IBM, google drive, Microsoft Azure, Amazon AWS, Redhat, CISCO, HP, salesforce, iCloud, Nextcloud, OwnCloud, Openstack, open nebula, etc. Apart from these, some of the major cloud-based storage services which are available in the industry are, OneDrive, Amazon S3, , MEDIAFIRE, OwnCloud, rapidshare , HP Upline, FreeNAS, 4shared, etc To minimize the price of service and improve end results, the administrator of the cloud must do something about global access, high bandwidth with the lowest latency as possible, also security and performance should be taken care of by the vendor side. Cloud storage empowers new application types [3] through Service-oriented architecture, HTTP application program interface and unified service interface by implementing virtualization over a cloud platform effortlessly, and can provide access for global storage, sharing via one name, and giving them the option to work in a collaborative environment with full control on storage.

## 3. The idea behind Cloud Storage

Cloud Storage consists of RAID storage devices that work simultaneously to achieve designed capacity to provide storage access from any remote location. Administrations interfaces and so on also, this can be segregated by physical and reasonable limits of cut-off points and associations which provide more congruencies and correspondences

Cloud computing is mainly used for Cloud storage. Within the cloud storage, data is stored on numbers of cloud vendors servers, and its vendor's responsibility to keep that data secure and unharmed. Cloud storage is different because it does not store all files on one dedicated server used in traditional networking or NAS data storage. I believe using just one dedicated server isn't good because if something causes the main dedicated server to stop working then this can be turned into chaos for any organization. So, using multiple servers for version history of files as well as timely backup is a great way to protect the integrity of data files. When storing the data, the respected end-user feels like he or she is working on virtual storage mounted in the system. wherein it feels like as if the data is being stored on the local disk. But it does not exist in reality this is a pseudonym term used to refer virtual space created in of the cloud. In reality, the user's data can be stored on any one or more of computer disk which can later be considered one as one cloud [4].

The basic nature of cloud storage consists of its design to combine many high configuration disks which are connected to each other and whenever clients store its data on the cloud server, it gets stored and remains safe for future use. This implies that, whenever there is a requirement of the data, it can be retrieved from its remote location. The end-user can access its files or data through a HTTP/HTTPs interface or vendor-specific application software. Authentication and authorization involve some basic steps including entering the username and corresponding password or two-factor authentication in accordance with the preferred level of security. The user can access any file the multiple number of times from remote location and can save it to local disk or just make changes to them without downloading them. This was the basic idea behind cloud storage.

## 4. Types of cloud

There are three types of cloud storage which are available; Private, Public, and Hybrid cloud. A private cloud is basically a pool of resources, and all the resources are shared, access to which is bounded within an organization. These resources are shared over the intranet and are organized by the internal IT team. A public cloud is defined as a situation wherein the cloud is obtained by using public internet. There are many examples of public cloud service providers. Some of the most popular ones include Salesforce, Google Engine for cloud application as well as Google search, Microsoft Azure, Web services such as EC2 from Amazon. A Hybrid cloud is as the name implies can be implemented by using properties of both Public and Private cloud sectors, where services from both private as well as the public are consumed in an integrated fashion and include in an extended relationship with the selected external service providers.

Insight over some good cloud storage providers. We are very well aware about the fact that there is a very positive and magnificent potential in cloud computing. . The best cloud providers in my opinion are as follows.

### 5.1. Google Drive

Also known as GDrive is the out of box choice for users of the device which have android as preinstalled operating system in them. As it is a part of GAPPS flashable zip for most android device manufacturers, but other platforms such as Microsoft

Windows and Linux or Macintosh users can also enjoy this free storage too. every google account comes with free 2 gigabytes of free google drive space

### **5.2. One Drive**

One Drive used to be called SkyDrive in the past. This comes preinstalled as a system application into Windows 10. But can be uninstalled if the user wants it to go away. It was appeared as an out of the box concept and is widely enjoyed due to its easy to use GUI, especially for those who are using Microsoft's newest operating system Windows 10.

### **5.3. Dropbox**

Dropbox can give away 2 gigabytes of free storage to any user who goes with the signup process of the website, but this can be increased up to 6GB free of charge by linking the social media account to the dropbox and convincing your friends to join or buy the service. Dropbox also provides business-level solutions advance solution can be obtained after paying \$20. Which gives 5 terabytes of storage space and 180 days recovery of accidentally deleted files. they also offer 256 bit encryption over HTTP and TLS[6].

### **5.4. Mega**

I believe this one is best if someone is looking for some free cloud space and privacy. Mega claims the data in their cloud is encrypted by various secure algorithms and even they are giving two-factor AUTH with end to end encryption.

### **5.5. iCloud**

The iCloud comes with apple devices as their own cloud storage service. The user can store photos and another sort of personal data which can be accessed over multiple devices with the same apple id[7]. iCloud also work with Ifinder which helps in the future if your device is lost or stolen it can locate the device and also help to recovery data or delete in permanently if situations need it to be. I cloud services, not free actually u have to own an Apple device in order to get benefits from iCloud. And in India apple devices are considered expensive.

### **5.6. NextCloud**

NextCloud is not so usual cloud storage but it can be installed on a private hosted server. The only drawback in nextcloud is the server must be running a Linux operating system. nextcloud also gives some other good tools such as open office and local disk mount option. The best part is all of this is free of any cost[8].

### **5.7. MediaFire**

Mediafire has been in the trend for so many years it provides file storage and file synchronization over multiple platforms and it also offers free services.

So, I believe these were the best available cloud storage in the Market. I have used all of them, each has its own advantages over each other so end-user must look at each one by one to get what suits him/ her best.

## **REAL ISSUES IN CLOUD STORAGE**

At present-day Cloud storage is globally being used by the various organizations and the individual end-users. Cloud storage is being accepted because it offers wide, anytime, and anywhere, scalable accessibility of data on a few taps of keys. But in the end, nothing is perfect so cloud storage is not a different case here I will try to put some light on the number of issues that are stopping cloud storage to taking over local disk storage. These issues need immediate attention from other researchers and scholars.

Major issues in cloud storage are due to the following reasons the end-user might not choose the right service provider because he or she doesn't know the all available options out over the web. lake of user manuals or guidelines to choose from vendors. Variable internet speed in some remote places. end user is not able to monitor user SLA very well and give reports on time. end user does not have a clear understanding of how to download data or migrate it to another cloud storage vendor if something bad happens to the vendor in the future.

F. The fixed price of most providers and they do not have flexible plans for users without considering other situations'. Someone else who is unknown to end-user is going to store data on their massive computer. Thus, making it hard for user to trust the service provider.

## CONCLUSIONS

Cloud storage can be a mighty replacement for the old local storage technology. However, before shifting to cloud computing or cloud storage, numerous precautions should be taken care of, by maintaining security and proper integrity of data files, to avoid any errors and consequences in any form in the future. It is a critical fact that cloud suppliers should not just consider the expense of the cloud clients whereas he should deal with data security and integrity execution issues as well, so that the individuals who have bought the cloud storage services are progressively fulfilled. Cloud storage methods and service models are still in their primitive stages of cloud evolution. Standardization of facility provider's service levels should be improved by making better load balancing to fix the issues faced by the cloud storage services.

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