

A

Seminar report

On

Cloud Storage

Submitted in partial fulfillment of the requirement for the award of degree
of Bachelor of Technology in Computer Science

SUBMITTED TO:

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SUBMITTED BY:

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Preface

I have made this report file on the topic **Cloud Storage**; I have tried my best to elucidate all the relevant detail to the topic to be included in the report. While in the beginning I have tried to give a general view about this topic.

My efforts and wholehearted co-corporation of each and everyone has ended on a successful note. I express my sincere gratitude towho assisting me throughout the preparation of this topic. I thank him for providing me the reinforcement, confidence and most importantly the track for the topic whenever I needed it.

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Introduction

Cloud Storage is a model of data storage in which the digital data is stored in logical pools, the physical storage spans multiple servers (and often locations), and the physical environment is typically owned and managed by a hosting company. These cloud storage providers are responsible for keeping the data available and accessible, and the physical environment protected and running. People and organizations buy or lease storage capacity from the providers to store user, organization, or application data.

Cloud storage services may be accessed through a co-located cloud computer service, a web service application programming interface (API) or by applications that utilize the API, such as cloud desktop storage, a cloud storage gateway or Web-based content management systems.

What is Cloud Storage?

Cloud Storage is technology that allows you to save files in storage, and then access those files via the Cloud. Let's break down this definition. First, **storage** is the computer's ability to save files and other resources for later use. When you restart a computer, the files that are still available after the computer turns back on are saved and read from storage. Such storage commonly consists of a hard drive, a USB Flash drive, or another type of drive.

Because local data drives can be damaged or stolen, an idea was developed to use data drives over a network as storage. This allows the drives to be secured in a data center and backed up automatically. Initially, **network storage** required fast local networks (**LAN**), but today we have a ubiquitous network called the Internet.

The second part of Cloud Storage, the Cloud, represents the Internet. Any service, including storage, available over the Internet, is called **Cloud service**. If you use GMAIL it is email in the Cloud, if you use an Amazon MP3 player, that's music in the Cloud.

How Cloud Storage Works

While it's true that all computer owners store data, some users acquire so much information that their computer almost qualifies as a mini-library of sorts. For these users, finding enough storage space to hold all the data they've accumulated can seem like Mission Impossible.

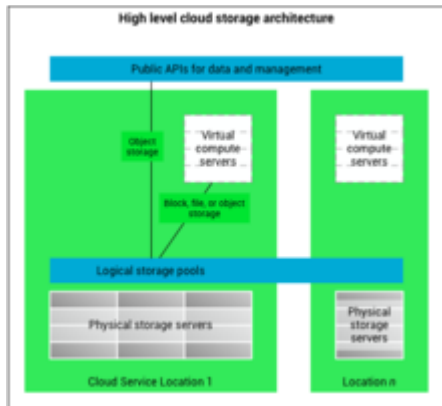


Cloud Storage

Some people invest in larger hard drives. Others favor external storage devices like thumb drives or compact discs. Then there are those who are choosing to rely on a growing trend: cloud storage.

What cloud storage really is boils down to this: It's saving data to an off-site storage system maintained by a third party. Rather than storing information to your computer's hard drive or other local storage device, you save it to a remote database. The Internet provides the connection between your computer and the database.

Architecture



A high level architecture of cloud storage.



This section **may be too technical for most readers to understand**. Please help improve this section to make it understandable to non-experts, without removing the technical details. The talk page may contain suggestions. *(December 2016) (Learn how and when to remove this template message)*

Cloud storage is based on highly virtualized infrastructure and is like broader cloud computing in terms of accessible interfaces, near-instant elasticity and scalability, multi-tenancy, and metered resources. Cloud storage services can be utilized from an off-premises service (Amazon S3) or deployed on-premises (ViON Capacity Services).

Cloud storage typically refers to a hosted object storage service, but the term has broadened to include other types of data storage that are now available as a service, like block storage.

Object storage services like Amazon S3 and Microsoft Azure Storage, object storage software like Openstack Swift, object storage systems like EMC Atmos, EMC ECS and Hitachi Content Platform, and distributed storage research projects like OceanStore and VISION Cloud are all examples of storage that can be hosted and deployed with cloud storage characteristics. There is also multiple cloud

services management web application, like Multcloud designed to tie together all cloud storage services in one platform and transfer data between cloud drives.

Cloud storage is:

- Made up of many distributed resources, but still acts as one, either in a federated or a cooperative storage cloud architecture
- Highly fault tolerant through redundancy and distribution of data
- Highly durable through the creation of versioned copies
- Typically eventually consistent with regard to data replicas

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Types of Cloud Storage

There are four main types of cloud storage — personal, public, private and hybrid;

Personal Cloud Storage

Also known as mobile cloud storage, personal cloud storage is a subset of public cloud storage that applies to storing an individual's data in the cloud and providing the individual with access to the data from anywhere. It also provides data syncing and sharing capabilities across multiple devices. Apple's iCloud is an example of personal cloud storage.

Public Cloud Storage

Public cloud storage is where the enterprise and storage service provider are separate and there aren't any cloud resources stored in the enterprise's data center. The cloud storage provider fully manages the enterprise's public cloud storage.

Private Cloud Storage

A form of cloud storage where the enterprise and cloud storage provider are integrated in the enterprise's data center. In private cloud storage, the storage provider has infrastructure in the enterprise's data center that is typically managed by the storage provider. Private cloud storage helps resolve the potential for security and performance concerns while still offering the advantages of cloud storage.

Hybrid Cloud Storage

Hybrid cloud storage is a combination of public and private cloud storage where some critical data resides in the enterprise's private cloud while other data is stored and accessible from a public cloud storage provider.

Risks of Cloud Storage

I don't think cloud storage is an infallible service. Along with the benefits, they come with a few risks as well. It's totally upon you to shortlist the service providers that properly serves your purposes. Otherwise, you may face some risks in the process of backup. Let's look at the flip side of a cloud storage system.

- Requires high speed internet connection most of the time
- Data is stored on third party servers
- When a provider closes its service for maintenance, you may find it troublesome to access your data
- If your provider closes its service permanently, you may lose your valuable data
- Premium services cost you a considerable amount for the storage volume

Most of the cloud storage service providers offer a free plan that intends to serve your common needs. In case of dealing with a huge pile of files or business essentials, cloud storage can be a reasonable way for securing your data in the cloud.

Advantages of Cloud Storage

- 1. Usability:** All cloud storage services reviewed in this topic have desktop folders for Mac's and PC's. This allows users to drag and drop files between the cloud storage and their local storage.
- 2. Bandwidth:** You can avoid emailing files to individuals and instead send a web link to recipients through your email.
- 3. Accessibility:** Stored files can be accessed from anywhere via Internet connection.
- 4. Disaster Recovery:** It is highly recommended that businesses have an emergency backup plan ready in the case of an emergency. Cloud storage can be used as a back-up plan by businesses by providing a second copy of important files. These files are stored at a remote location and can be accessed through an internet connection.
- 5. Cost Savings:** Businesses and organizations can often reduce annual operating costs by using cloud storage; cloud storage costs about 3 cents per gigabyte to store data internally. Users can see additional cost savings because it does not require internal power to store information remotely.

Disadvantages of Cloud Storage

- 1. Usability:** Be careful when using drag/drop to move a document into the cloud storage folder. This will permanently move your document from its original folder to the cloud storage location. Do a copy and paste instead of drag/drop if you want to retain the document's original location in addition to moving a copy onto the cloud storage folder.
- 2. Bandwidth:** Several cloud storage services have a specific bandwidth allowance. If an organization surpasses the given allowance, the additional charges could be significant. However, some providers allow unlimited bandwidth. This is a factor that companies should consider when looking at a cloud storage provider.
- 3. Accessibility:** If you have no internet connection, you have no access to your data.
- 4. Data Security:** There are concerns with the safety and privacy of important data stored remotely. The possibility of private data commingling with other organizations makes some businesses uneasy. If you want to know more about those issues that govern data security and privacy, here is an interesting article on the recent privacy debates.
- 5. Software:** If you want to be able to manipulate your files locally through multiple devices, you'll need to download the service on all devices.

Conclusion

- Many of the activities loosely grouped together under cloud computing have already been happening and centralised computing activity is not a new phenomena
- Grid Computing was the last research-led centralised approach
- However there are concerns that the mainstream adoption of cloud computing could cause many problems for users
- Many new open source systems appearing that you can install and run on your local cluster

References

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