Cloud Storage

High level cloud storage architecture

Public API's for data & management

Virtual compute Servers	Block, file, object sto	Object storage	Virtual compute Servers

logical storage pools

Physical Storage Servers
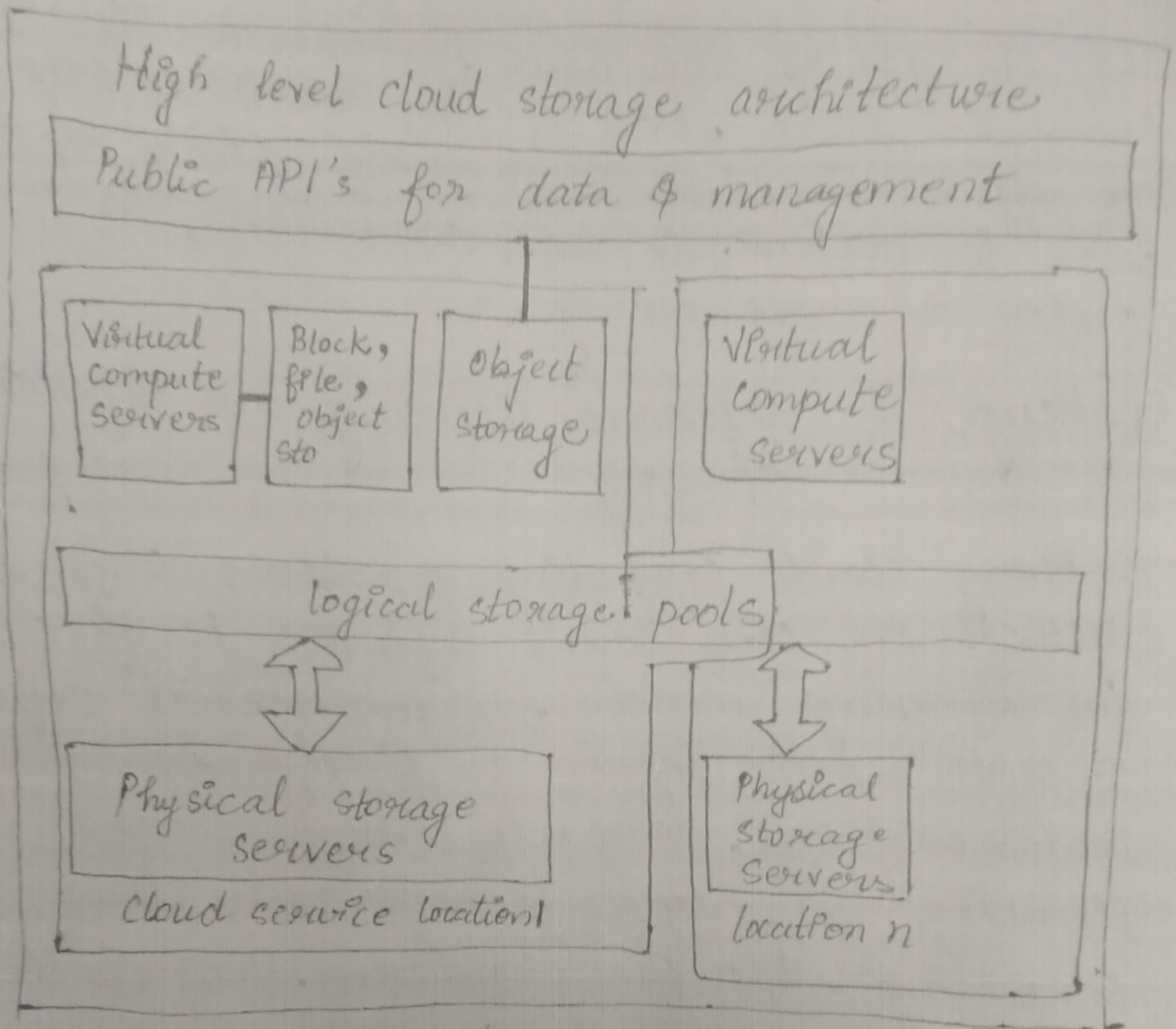
Cloud service location1

Physical Storage Servers

location n

Cloud storage block diagram.

* Cloud storage means storing data with a cloud provider instead of a local system. Cloud storage possesses a numerous advantages when compared to traditional data storage. If the users prefer to store data in a cloud, they are able to get that stored data

from anywhere, provided one is connected through the internet.

* Cloud storage systems use hundreds of data servers. Since servers need maintenance, it is req. to store the saved data on several machines to have redundancy.

* Cloud storage enables clients to access their inf. from anywhere at given point of time with the help of redundancy.

* Cloud storage defines a service model where the data is maintained, managed, has remote back-ups, and is made available to the users with the help of internet.

• Storage as a Service (STaaS) :-

* Storage as a service is a business model in which a comp. rents space in their storage inf. to another comp. or individual.

(a) Who uses storage as a service and why?

→ Storage as a service is usually used by small or mid-seized companies that lack the budget to implement & maintain their own storage infrastructure.

Organizations use storage as a service to mitigate risks in disaster recovery, provide long-term retention & enhances business continuity & availability.

(b) How storage as a service works?

→ The company would sign a service level agreement (SLA) whereby the STaaS provider agreed to rent storage space on a cost-per-data-transfer basis & the company's data would be automatically transferred at the specified time over the storage provider's proprietary WAN or the Internet. If the comp. ever loses its data, the net. administrator could contact the STaaS provider & request a copy of the data.

(c) Benefits of storage as a service?

* More predictable costs by shifting from CapEx & OpEx.

* Ability to manage growth & optimize performance.

* Simplified storage env. & inc. Inf. availability, retention, & compliance.

* Adaptive delivery models with onsite & remote manag.

* flexible consumption models aligned to customer's business needs.

* Advantages of Cloud storage :

(i) <u>Usability</u> : All cloud storage services reviewed in this topic have desktop folders for Mac's & PC's. This allow users to drag & drop files b/w the cloud storage & their local storage.

(ii) <u>Bandwidth</u> : You can avoid emailing files to individuals & instead send a web link to recipients through your email.

(iii) <u>Accessibility</u> : Stored files can be accessed from anywhere via Internet connection.

(iv) <u>Disaster Recovery</u> : 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 imp. files. These files are stored at a remote location & can be accessed through an Internet connection.

(v) <u>Cost Savings</u> : Businesses & org. can often reduce annual operating costs by using cloud storage ; cloud storage costs about 3 per cents gigabyte to store data

internally. Users can see additional cost savings becz it does not require internal power to store Inf. remotely.

* Disadvantages of cloud storage :

(i) 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 & paste instead of drag/drop. If you want retain to the document's original location in addition to moving a copy onto the cloud storage folder.

(ii) 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 when looking at a cloud storage provider.

(iii) Accessibility : If you have no internet connection you have no access to your data.

iv) <u>Data Security</u> : There are concerns with the safety & privacy of important data stored remotely. The possibility of private data commingling with other organizations makes some business uneasy. If you want to know more about those issues that govern data security & privacy, here is an int. article on the recent privacy debates.

v) <u>Software</u> : If you want to be able to manipulate your files locally through multiple devices, you'll need to download the service on all devices.