A Study on Cloud Data Storage and Its Technology

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Abstract: Cloud computing is the rising technology. Cloud computing presents convenient get admission to and excessive overall performance computing on the records .Another primary task that these days software program agencies face, are storage of information at low-cost price and make handy all the time. The important offerings present in Cloud computing is the Cloud storage. With the cloud storage, statistics can be saved on a servers which is now not cared by means of the consumer and no one is aware of the place precisely information saved. Data storage is a very vital and treasured lookup discipline in cloud computing. This paper introduces the notion of cloud computing and cloud storage as nicely as the structure of cloud storage firstly. This paper gives the learn about on introduction to cloud storage and digital storage architecture.

Keywords: Cloud computing, Cloud Storage, Cloud Storage Models ,Cloud Services , Emerging Technology ;

I.   INTRODUCTION

Day to day, the usage of knowledge within the computer has been increasing from commoner to organization. The question arises where to store the important data, the way to share the info , the way to access the info globally, the way to manage the info , the way to make data available all the time, how can of these be achieved with reasonable cost? the solution to all or any these questions is cloud computing[1]. Cloud computing is that the on-demand delivery of compute power, database storage, applications, and other IT resources through a cloud services platform via the web with pay-as-you-go pricing.Cloud computing provides various services during which data storage is that the main cloud service. Cloud computing works behind the scene in our day to day activities like to observe movies, play games, sending mails and hear music etc, With Cloud computing, we will store, recover and backup data, create new applications, deliver software on demand, host websites then on. Whenever there's a requirement , user can access the services of cloud dynamically via internet[4].

II.   CLOUD SERVICES

There are three sorts of cloud computing services models namely SaaS (Software as a service), PaaS (Platform as a service) and IaaS (Infrastructure as a service).

Software as Service: In SaaS, an application is hosted by service provider then accessed via the planet wide web by a client. These are mainly designed for end users. SaaS may be a cloud computing offering that gives users with access to a vendor's cloud-based software[2].

Platform as a Service: With this type of servicing facilities, provided, one can deploy the appliance without installing the platform on the local system that's software are often deployed in cloud infrastructure. the most advantage of using PaaS is that developer needn't worry about the platform updates, storage. These features are taken by PaaS providers. PaaS may be a cloud computing offering that gives users a cloud environment during which they will develop, manage and deliver applications.

Infrastructure as a Service: Unlike SaaS and PaaS, IaaS provide hardware resources as service. The resources include memory, servers, networking devices, processing power. These are wont to deploy the appliance . Multiple users can use infrastructure through the utilization of virtual machines[2]. IaaS may be a cloud computing offering during which a vendor provides users access to computing resources like servers, storage, and networking.
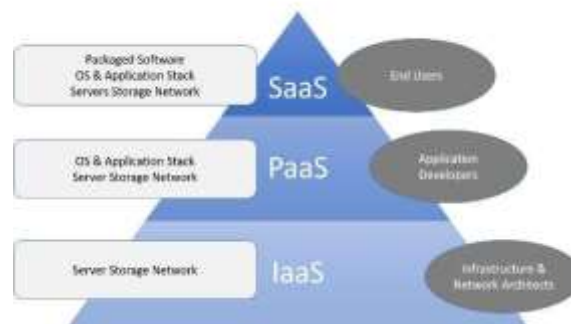
Figure 1: Cloud Service Models

III.   CLOUD STORAGE

Cloud storage are often described as a service model during which data is transmitted and stored remotely on the remote storage systems. Stored data is protected and maintained on these remote storage systems and made available for the users over the network [6]. For Cloud storage, users pay monthly counting on their consumption rates to cloud storage providers. Providers like Google, Amazon, Microsoft, IBM, Sun Microsystems, and sales department are establishing data centers on several locations round the world for hosting cloud computing applications. the aim of this is often to make sure reliability just in case of site failure and supply redundancy. The service provider of cloud storage has got to flexible consistent with the necessity of the user at an equivalent time kept the user isolated from the backend infrastructure. one among the main uses of cloud computing is data storage[5]. With the cloud storage, Data is stored on several third-party servers rather than one dedicated server which is traditionally used for data storage. Cloud storage provides numerous advantages like which include security, protection, and financial benefits.   Financially, the virtual resources of the clouds are less expensive and cheaper than the physical resources of a computer or a network. For security, the info which is stored on a cloud is safer from hardware crashes or accidental reassure because it is stored on multiple machines, and albeit one among the machines goes offline, others keep running. If anyone of machine crashes, the info are going to be secured because it's stored on multiple machines[9].

IV.   DEPLOYMENT MODELS

Deployment of cloud computing differs counting on the need . There are following cloud-based storage access model and every has particular characteristics that support the necessity of its users and wish of the services especially ways:

A. Public Cloud
This type of cloud infrastructure is out there to the general public on a billboard basis, provided by the cloud storage provider. This service required little or no financial outlay as compared to the expenditure requirements of the opposite storage models of cloud computing[4].In this model, general public can access the services, storage, application offered by the provider. Pubic clouds are owned and managed by the third- party service providers. Flexibility, elastic environment, freedom of self service, pay-per-use, availability, reliability are a number of the characteristics of public cloud. the most drawback of this model is lack of high level security. Ex: Amazon Elastic Cloud Compute, Google App Engine, Blue Cloud by IBM.

B. Private Cloud
A private cloud is deployed and maintained for a selected organization or company by the service provider. The operations might be in house or with a 3rd party on the premises[7]. This model provides access to the systems and services within a corporation . Industries like finance mainly prefer to this model, where security is that the primary concern. Data stored privately cloud can only be shared among the users of a corporation . There are two sorts of private cloud namely, On-Premise Private Cloud, Externally-Hosted Private Cloud .The disadvantage of this model is ,it is difficult to deploy globally. Amazon Virtual Private Cloud, Microsoft Private Cloud are a number of the samples of this model.

C. Hybrid Cloud
Hybrid Cloud infrastructure consists of several clouds of various types and provides the power to transfer data from one cloud to a different through its interface abilities. counting on the requirements and requirements of the organization, the mixture might be of personal and public clouds.

D. Community Cloud
Organizations with similar interest and requirements share the cloud infrastructure. It provides better security in comparison to public cloud. this might be managed by either internally or third party.
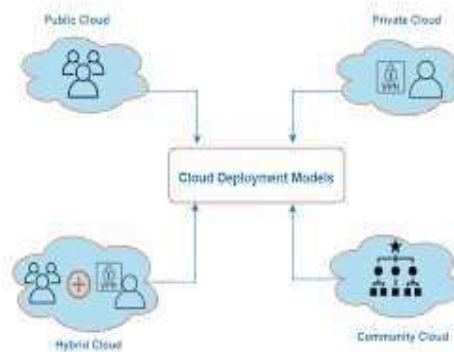

Figure 2: Types of Cloud

V. CLOUD STORAGE ARCHITECTURE
Cloud storage architecture consists of front , middleware, back end. The front are often webservice frontend, file based front , and even more traditional front ends[11]. The middleware consists of storage logic which implements various features like replication, data reduction, data placement algorithms. the rear end implements the physical storage for data.

There is no specific set of attributes when it involves the architecture of the cloud storage and a number of other cloud storage architecture schemes exist among different cloud storage platforms. But typically, cloud storage consists of thousands of storage devices and which are clustered by the distributed filing system[12], a network, and other storage middleware to supply the services of cloud storage to the users. Cloud storage architectures are mostly about the storage delivery on-demand during a multitanned and highly scalable way.behind the front may be a layer of middleware which is named storage logic. This layer is employed to implement several features like data reduction, replication. the rear end of the cloud storage architecture implements the physical storage of the info which might be an online protocol that implements the actual features or it also might be a standard rear for the physical disks.

VI. ISSUES IN CLOUD STORAGE

Cloud storage is widely employed by the varied enterprises and therefore the individual users. it's appreciated thanks to its wide, anytime and anywhere accessibility[3]. However, variety of issues are prevailing in cloud storage and wish immediate attention.
Major issues that are applicable for the cloud storage are thanks to following reasons[5].
•	Not choosing the proper cloud storage provider.
•	Connectivity problem between users through internet.
•	Failing to watch user SLA effectively.
•	Failing to urge a transparent understanding of the way to get the info back or move it to a different provider if something went wrong.
•	Fixating on costs without considering other factors.

CONCLUSION
Cloud storage is an emerging technology and features a great changing impact on the way businesses and organizations manage their information and data. Cloud storage is more advantageous than traditional storage due to its availability, scalability, performance, portability and its functional requirements. Cloud storage has the big potential to develop because the substitute for legacy storage. Cloud data storage technology is that the core area in cloud computing and solves the info storage mode of cloud environment. during this paper, we introduce the related concepts of cloud computing and cloud storage.

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