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Managing the Storage Service in the Cloud Computing

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ABSTRACT

The cloud computing can be defined as a collection of concepts, technologies, methodologies that enable to dynamically provision hardware and software resources as a services over internet on pay per use model with a objectives of achieving high resource utilization in a scalable cost effective manner .The cloud deployment models are defined in the basis of the location ownership access and management of cloud services. The Iaas ,Paas ,Saas as the Major services delivered by the cloud. This paper outlines about the storage which is another major service offered by cloud and is known as storage as service. The cloud computing provides rich benefits to the cloud clients such as costless services, elasticity of resources, easy access through internet, etc.Storage as a service is a model in which a large company rents space in their storage infrastructure to a small company or individual

Keyword- cloud computing; platform as a service; software as a service; infrastructure as a service, Representational State Transfer.

1.INTRODUCTION:

The facility of storing data online within the cloud known as cloud storage. Generally data is stored in multiple distributed and connected storage devices that are provided by service providers. The Email is an simple example of cloud storage Google does is a cloud storage provided by google where we can store own files such as word and document and spread sheet acess then from anywhere and edit them through suitable applicable provided by google service which is also accessed by web service API's. From small to large enterprises poignant towards cloud computing to increase their business and tie-ups with other enterprises [1]. Storage service provider provides these API's to the Users. SSP maintain more than one copy of data in different devices to handle device failures and at different distributed location to handle natural disasters.

2. CLOUD STORAGE MODEL:

Storage is managed in the sense that it is provided to the user as virtualized raw disk space. The user has complete control on the disk and can be decide on various aspect such as formatting ,partitioning ,storing ,accessing and protecting of data. An example of managed cloud storage is Amazon simple storage service (S3) .Another Kind of storage is unmanaged which means storage is unmanaged to user as a ready to use disk. The user can take a decision on the content to be stored manner of oraginizing data etc.However low level control lies with the service provider.

Cloud storage can be classified in to three models based on the location of deployement public,private and hybrid. Public cloud storage service is provided by a storage service provider like Amazon S3 private cloud storage is implelemnted by an organization where complete control and management lies with in the protected self owned environment of the

oragenization.Hybrid cloud storage is a combination of the public and private in which an organization or a community would have a private storage cloud setup to store sensitive control and a part it would be implemented using public cloud infrastructure to store relatively less important data. The SecCloud is presented by Wei et al. [4], it provides a storage security protocol for cloud customer's data and it not only secures the stored data but also provides security on computational data. The SecCloud protocol uses encryption for storing data in secure mode.

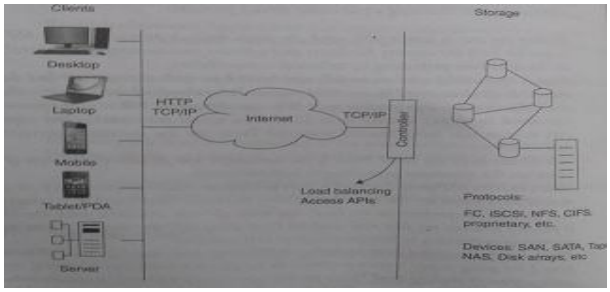
3.MOBILE CLOUD STORAGE:

Cloud storage can also be implemented for mobile user heavy device such as laptop, tablets and mobile phone known as mobile cloud storage. It allow mobile users to store their files in the cloud through their mobile devices and access them whenever they want and from whenever they are icloud by apple is an example of mobile cloud storage service that allow user of apple devices such as iPod and iphone to store their personal files in the form of audio, images and video. Android user can utilize the services of Google cloud storage for this purpose user can store organize and access their files but can also synchronize multiple devices with their single account in under to access the files from any devices. Popular example of cloud storage for common user is Google drive offered by Google using which users can share their data with other by provided a link to the file that is to be shared. The Limitation of cloud storage has its limitation security and reliability, performance scalabilty and vendor dependency.

4.CLOUD STORAGE ARCHITECTURE

A Pictorial representation of a cloud storage system is shown in fig1. The storage area consists of a pool of heterogeneous storage devices, which are connected through dedicated networks and are accessed by user through well defined interfaces. The interface can be implemented as web based REST API based on HTTP or tradition interface such as file protocol like NFS .Most of the services offer multiple interface client send their data in the form of files via internet to the cloud storage where the controller with necessary logic implemented would store the file at appropriate location client access the file through the interface provided. A client can be anyone with a device or a machine that has internet access or an application. Client can access their files anytime anywhere and from any devices.

5. CLOUD STORAGE SYSTEM ARCHITECTURE



Cloud computing providers provide a variety of services to the customers and these services include e-mails, storage, infrastructure-as-a-services, software-as-a-services etc. The attractiveness of cloud computing is not only to large enterprises but also startups, entrepreneurs, medium companies and small companies would benefit greatly and they will have a opportunities and alternative that is not available to them in the past that would save them billions of dollars because with cloud computing they will have the choice to only rent the necessary computing power, communication capacity and storage space from a large cloud computing provider that has

all of these assets connected towards the Internet. The cloud service providers offer services can be categories as infrastructure as a service, platform as a service, and software as a service. These categories group together the countless layers illustrated in above Figure, with approximately overlap.

Software as a Service (SaaS) If provide software services on demand. The use of single occurrence of the application runs on the cloud services and multiple end users or client organizations. The example of Software as a service is salesforce.com, though many other examples have revive market, including the Google Apps offering of basic corporate services including email and word processing. Even though salesforce.com led the definition of cloud computing and now it is operated by its companion force.com, which can be demarcate by way of a platform as a service.

Platform as a service (PaaS) Platform as a service condenses a layer of software and make available it as a service that can be used to build higher level services. There are at least two perspectives on PaaS provisional on the perspective of the producer or consumer of the services: Someone producing PaaS potency produce a platform by participating an OS, middleware, application software, and even a development environment that is before provided to a customer as a service. For example, somebody developing a PaaS offering might base it on a set of SunxVM hypervisor virtual machines that include a NetBeans integrated development environment, a Sun GlassFish Web stack and support for additional programming languages such as Perl or Ruby. Someone using PaaS would see an summarized service that is presented to them through an API. The customer interacts by the platform through the API, before the platform does what is necessary to manage and scale itself to provide a specified level of service. Virtual appliances can be hush-hush as instances of PaaS. A content switch appliance, for example, would have all of its component software unseen from the customer, and only an API or GUI for configuring and deploying the service provided to them. PaaS assistances can provide for every phase of software development and testing, or they can be specialized everywhere a particular area such as content management. Commercial examples of PaaS include the Google Apps Engine, which assists applications on Google's infrastructure. PaaS services such as these can provide a powerful origin on which to deploy applications, however they may be forced by the capabilities that the cloud provider indicates to convey.

Infrastructure as a service (IaaS) delivers basic storage and compute capabilities as consistent services over the network. Servers, storage systems, switches, routers, and other systems are united and made available to holder workloads that range from application components to high performance computing applications. Commercial samples of IaaS include Joyent which is Hybrid Cloud Infrastructure as a Service specialized in running Containers that afford a highly available on demand infrastructure.

In recent years, some well-known IT companies have an important part and started to provide cloud storage service as its cloud computing, such as Amazon J Simple Storage 100 Service (S3), Google Cloud Storage, and Rackspace Cloud Files. Also appeared on the cloud storage infrastructure services, such as the upper application services [2], such as EMC company's online document storage and backup services, Mozy, etc.

Storage as a Service (StaaS) facilitates of cloud applications to level beyond their limited servers[3]. StaaS allows users to store their data at remote disks and access them anytime from any place. In cloud environment i.e., at Cloud Service Provider (CSP) side attacks leads to loss of user's information integrity, confidentiality, and security. This leads to information loss or breaches at both environments. This attack is precious and it is well known to most of the organization [5]. There is variety of attack patterns performed by insiders because of sophistication about internal structure of an organization data storage structure. Most organizations ignoring this attack because it is very hard to defend and impossible to find the complete solution for this attack. This attack ensures great risk in terms of data breaches and loss confidentiality at both organization and cloud level [6]. Cloud storage systems are likely to meet several meticulous requirements for maintaining users data and information, including high reliability ,availability, performance, duplication and data consistency , but because of the conflicting nature of these requirements and difficult to implements all of them together.

6. CONCLUSION

The asset of cloud computing in information risk management is the facility to manage risk more effectively from a integrate point. There are many new technologies emerging at an express rate, each with technological developments and with the potential of making human's lives at ease. The Storage as a Service facilitates cloud applications to balance missing from their restricted servers. The cloud deployment models are defined in the basis of the location ownership access and management of cloud services .In our future work, we will include the different cryptographic-algorithms by solving the storage security in cloud computing

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