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REVIEW ARTICLE

A Review Data Safeguard for Cloud Computing

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ABSTRACT

Cloud Computing is latest terminology in environment of computer Science .Cloud computing is basically allocation and resource management service provided to users on their demand. Here user uses the service virtually from CSP .Cloud computing is robust technology of building a robust data security between CSP and user .The relevant problem associated with cloud computing is the cloud security and appropriate implementation over the cloud .This research mainly focus on Data Safeguard For Cloud Computing .Review of already existing approaches and comparison of the algorithms, merits and demerits on each other according to different applications and services. It will help researchers working in this field for more security of data in cloud

Keywords: CSP (Cloud Service provider), safeguard, robust, SaaS

I. INTRODUCTION

Cloud computing is current bozzord of market .[12]Cloud Computing is latest terminology in environment of computer Science .Cloud computing is basically allocation and manage of resources provide service to users on their demand that are present in resource pool and these resources can utilize by user through internet only. Here user uses the service virtually from CSP (Cloud Service Provider).Cloud computing is robust technology of building a robust data security between CSP and user. Network of these services is called “cloud”. It provides high

network band width. Moving information into the cloud provide great convince to user in that all operation user have not information about software and hard ware complexity of management .Cloud services also access on light weight device rather than through some data cendant of traditional desktop or pc [11].

Cloud computing is the most resent emerging paradigm promise to turn vision of computer utilities into reality [13]. Cloud computing is an idea of using remote services through which consist various resources .[2]Cloud users can be used just use light weight device which is capable of using a network in that any end user not any requirement to store information on its device and end user can access these services anywhere any time and any location .it reduce cost of hardware and software cost for end user .

II. THEORETICAL BASELINE

Cloud Computing is not only simple collection of resource, but also provider a management mechanism and provide service for millions of user simultaneously. Cloud computing broke down into three segment

(i)Application (ii) Storage (iii) connectivity

Cloud computing is divide into two types according uses of services

1. Providing additional computing instance on demand

(i) Saas (2) Paas

2 . (data and compute intensive application “Pay as you go “[11]

A. Types of Service Models in Cloud

Cloud computing providers offer their services according to three fundamental models:

(1).SaaS (Software as a Service):-the capability provided to the consumer is to use the provider’s application on a cloud infrastructure [4]

(2)PaaS (platform as a service):- The capability provided to the consumer is to deploy onto the cloud infrastructure consumer-created [4].

(3)IaaS (Infrastructure as a Service):- The capability provided to the consumer is to provision processing, storage, networks, and other fundamental computing resources[4] infrastructure is the lowest layer and it is a mean delivering basic storage over network. The middle platform layer provide higher abstraction and services to develop , tested host and maintenance of application in the same development environment .The application layer is the highest layer a feature a complete application offered as service.[11]

B. Types of Cloud:-

Private cloud: -

The cloud infrastructure is exclusive use by a single organization comprising multiple consumers (e.g. business units).

Public cloud: -

The cloud infrastructure is open use by the general public. It may be self, or managed by third party.

Community cloud:

The cloud infrastructure is use by a specific community of consumers from organizations that have shared any type of concerns. It may be self, managed, and operated by single or more than one organization in the community, a third party, or any combination of them, and exist on or off premises.

Hybrid cloud:

Hybrid cloud infrastructure is a combination of two or more different cloud

Infrastructures:

The relevant problem associate with cloud computing is the data cloud security, there are different factor are effect on data security like data dynamics integrity of data, and data privacy affects.

There are many approaches and algorithm are given for data security of cloud computing. Each and every approaches and algorithm has advantage and disadvantage which make them suitable for distinct Services. Within the cloud computing world, the virtual environment lets users' access computing power that exceeds that contained within their own

physical worlds. To enter this virtual environment does not require the exact location of their data nor the other sources of the data collectively stored with theirs. To ensure data confidentiality, integrity, and availability (CIA), the storage provider must offer capabilities that, at a minimum, include

- a tested encryption schema to ensure that the shared storage environment safeguards all data;
- stringent access controls to prevent unauthorized access to the data; and
- Scheduled data backup and safe storage of the backup media.

Cloud Security

There are so many factor effected to cloud computing security like that privacy , integrity , time management of cloud services, data security of cloud service and another technical issues are effects performance of cloud service. We can divides that cloud Security into few parts according to services of cloud computing. These are given below

>Software Security in SaaS:-



Platform Security in Paas



Infrastructure Security

- Network Level
- Host Level
- Application Level

The author Juels et al. described a formal “**proof of retrievability**” (POR) model for ensuring the remote data integrity. In that some additional bits are add with data information . through this we can check data information any where for security purpose that is called spot checking .If any problem come we correct the information according to additional which were add as a header with information that called Error correcting. These two phenomena provide possession and retrievability of information of file on archieve service system.[1]

The author Harmeet Kaur “ comparision of data security in grid and cloud security in Grid and cloud computing “ describe as the security due to the hacker increase over internet and cloud computing is totally on internet .That paper provide new authentication modal name “Two factor authentication using graphical password with Access point scheme “. In that password provide security mechanism for authentication and protection services against unwanted access of resources. provide [12].

- Shacham et al. built on this model and constructed a **random linear function based homomorphic authenticator** which enables unlimited number of queries and requires less communication overhead.[1]

Scope of the study

Cloud computing users range from individuals and small businesses to Fortune 800 firms and governments. According to a September 2008 survey from the Pew Research Institute, nearly 69 percent of Americans use cloud computing services (such as webmail and online data backup sites). In India, companies such as Ashok Leyland, Tata Elxi, Bharti, Infosys, Asian Paints, many Universityes and Maruti are either piloting or using cloud computing. Additionally, nearly 1,500 companies in India already use blended (voice-chat-data) cloud-based communication services from vendors such as Cisco WebEx and Microsoft. The US government projects that between 2010 and 2015, its spending on cloud computing will be at approximately a 40-percent compound annual growth rate (CAGR) and will pass \$7 billion by 2015

Cloud computing is nothing it is a data centre environment allows enterprises to get their applications up and running faster, with easier manageability and less maintenance to meet business demands. The smart phones we are seeing in the world today use

their internal memory likewise the phones coming nowadays are having their storage capacities like 16gb to 32gb, etc. so it is seen that the memory is required on each mobile phone device to save applications and files of its users and it is also seen that main cost for a mobile phone. So instead if you use cloud computing here which means the device with you will be just for communication or interaction between you and the server and all your apps and data is stored at some other location so it reduces the cost of that smart phones.

Limitations of the study

In spite of security advantages, cloud computing paradigm also introduces some key security challenges. Here we discuss some of these key security challenges

. How do we effectively manage the virtual machine (VM) life cycle to deliver quality expectations of consumers and at the same time reduce the cost delivery of services?[13]

. Data Location: In general, cloud users are not aware of the exact location Of the data center and also they do not have any control over the physical access mechanisms to that data. Most well-known cloud service providers have datacenters around the globe. Some service providers also take advantage of their global datacenters. However, in some cases applications and data might be stored in countries, which can judiciary concerns. For example, if the user data is stored in X country then service providers will be subjected to the security requirements and legal obligations of X country. This may also happen that user does not have the information of these issues.

.How do we secure the data and computation on the VMs managed by Cloud service providers? [13] .

.Investigation: Investigating an illegitimate activity may be impossible in cloud environments. Cloud services are especially hard to investigate, because data for multiple customers may be co-located and may also be spread across multiple

. How do we guarantee users' privacy and trust requirements? [13] .

.Recovery: Cloud service providers must ensure the data security in natural and man-made disasters. Generally, data is replicated across multiple sites. However, in the case of any such unwanted event, provider must do a complete and quick restoration.

How do we manage Service Level Agreements (SLAs) and how do we guarantee quality of service (QoS) satisfaction and prevent or minimize SLA violations?[13]

Cloud interoperability :- customer ability to use same artifacts , such as management tools , virtual server and image and so on with verity of cloud providers and plateform.

What standards and interfaces are needed for portability and scalability of application services?[13]

.Software / hardware architecture , data management , security and privacy and service provisioning and SLA (Service level agreement) are main key limitation of cloud computing .

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