

Analysis of Resource Management and Security Management In Cloud Computing Environment

Nagesh Salimath

Research Scholar, CS

Sehore. MP

nash.salimath@gmail.com

Dr. C.Kavitha

Professor, CS, SSSUTMS,.

Sehore. MP

Dr. Jitendra Sheetlani

Professor & Dean, SoCA, SSSUTMS,.

Sehore. MP.

dr.jsheetlani@gmail.com

ABSTRACT

This paper elaborates the concept of Cloud Computing towards the Resource Management and Security issues. In current scenario most of the people tend towards the cloud computing because of its enormous usage and many features. This paper gives descriptive information. Cloud Computing gives and access to the applications. It enables users to setup, design and personalize business usance. The network or Internet refers the Cloud Computing. The Cloud means the information which is present at remote place where users data is saved. This paper gives an information about the management of the cloud computing. The cloud brokerage suppliers manage the solution and their fulfilment. The main resources such as load balance, storage, production, backups, capacity and utilization etc. The main concern in cloud computing is security. Data should store the encrypted form so others can't read or modify data. The cloud computing service provider should give the protection of the user's sensitive data.

Keywords: Cloud Computing, Security, Cloud Computing Management, Load Balance, Encrypted information, SaaS, IaaS, PaaS)

I. INTRODUCTION

The Cloud Computing has the main three features those are deploying, designing, and fetching the Virtual shareware system remotely. It deals with data, architecture, and utilizations. The cloud administers the services on the need basis for the users. It gives basically three kinds of services; infrastructure, software and platform for the users. Where user may pay for services to the service provider to give access. If any individual wish establishes an organization based on online transaction, if he doesn't want to spend lots of money to establish then this cloud computing come into the picture, which provides all services which is required for the establishment of the business. The owner of an organization has to pay only as much for the computing infrastructure as he used. Billing procedure is like electricity payment that all users are paid on the basis of their use. Now if we talk about the impact of the cloud computing on common human beings are application comes in low cost, easy to find and user friendly, development of new application is easier, it gives an social services such as makes connections through social networks, saves the licensing of software expenditure, users can access whenever and wherever they want they can access the cloud it's like an mobile office. The cloud computing has many benefits like Low Cost, Storage Capacity, Low cost in Infrastructure, Increase Computing power, Reduce Software costs. The cloud computing brings the real paradigm of the technology in the development. From this technology, brings the many benefits for the multinational companies this technology made users dream come true with the concept of pay-as-you-go.

By this individual can start the small-scale business to big scale in a small time. There are three types of Cloud Computing Services that is: SaaS (Software as a Service), IaaS (Infrastructure as a Service) and PaaS (Platform as a Service).

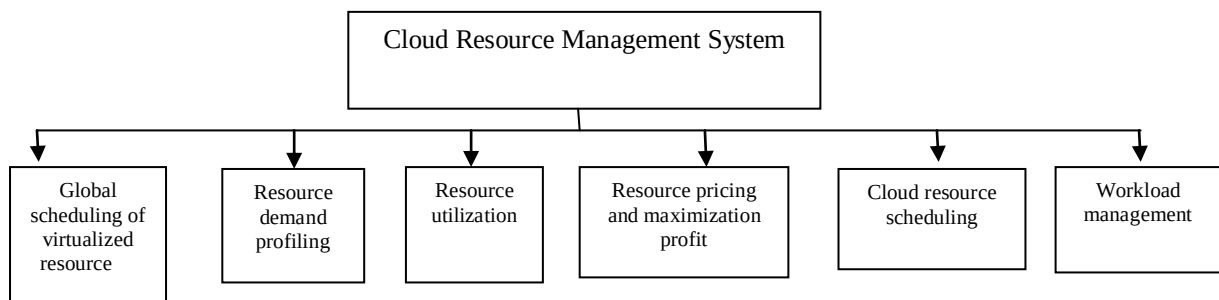
SaaS: This provides hosting service to customers who can access via Internet.

IaaS: it provides service over internet by virtualized computing. IaaS also provides lease for resources such as space for server, equipment for network, memory, CPU cycles; this also depends on available resource and computing.

PaaS: It provides resource which are necessary to give service and build application through internet ,hence it is also known as cloud ware

II. RESOURCE MANAGEMENT IN CLOUD COMPUTING

The major two aspects in cloud computing are the resources maintained one is establishing the Cloud Brokerage Providers, second is the maintenance of private infrastructures and individual organizations utilization. The major operating components of a cloud resource management system is further classified into functional areas:



The above are the classifications in the resource management system, and the below are the resource types; Cloud Computing resource are group of physical machines, which consists of one or more processor, network interface ,memory and local I/O which provide computational storage for cloud environment below are some types of resources:

- **Network Resources:** The resource allocation is computed on physical machine into data center, which is packaged as a rack and structured with group of hosts. These physical machines are interrelated based on technologies such as InfiniBand, high bandwidth network. The communication by the data center and networking protocols performance is based on cloud host applications specifically by parallel computation.
- **Storage Resources:** Public Cloud Providers enable to access different type of stored data by the services such as Amazon and also provides virtual disks, object stores by database services. Hence the consistency of data guarantees the services and reliability.
- **Power Resources:** As the data center around the world consume huge amount of power, the utilization of energy and energy costs both are considered to an account associated with power distribution and cooling costs. Therefore, eliminating the wastage of power at data centers.

III. CLOUD COMPUTING SECURITY

Cloud security associates to an extensive set of strategies, designs, computing, and controls the deployment to secure data, supplications, and it associates the framework of cloud computing. The users come across the security issues which are shared. The cloud providers must maintain the security issues of an individual user's data. The security in cloud computing processes the addresses by security controls. The data security, privacy and compliance of customers are maintained and secured by cloud providers. The cloud computing gives numerous advantages to the users and at same place users can face the security of the data which is uploaded by the users. The cloud computing service provider

should look after the user's data security, in this regard any service provider gives the 100% assurance of the security for the user's data. So, there are a lots of security threats are there and those threats are given below:

- **Data Breaches:** The information of data is accused without authority or the data is leaked intentional or unintentional or by human error.
- **Insufficient identity:** Due to the lack of identity access management system data branches & enable occurrences of attacks, failure by the use of various factor for authentication, lack of password uses and automated ongoing relation of cryptographic keys.
- **System vulnerabilities:** System vulnerabilities expose to bugs in program where intruder gain the data, take control of a system or obstruct operation services. Vulnerabilities at operating system fall into security services and significant risk on data.
- **Credential:** in the source code and cryptographic keys must not be included due t this considerable there are chances of misuse of distributed in public, thus facing repositories like GitHub. Thus, a well secured PKI (Public Key Infrastructure) is considered to ensure the key management activity & secure the data.
- **Account hijacking:** Service or account hijacking is carried out by phishing, spoofing, password identifying, and transactions.
- **Access Management:** Identity systems must be capable of handling the lifecycle management for the end users and also cloud service providers.
- **Malicious insiders:** A malicious insider like administrator inherent confidential data and increase the risk levels to access information. The system which provides security for cloud service is at greater risk.
- **Advance Persistent Threats (APT):** The intruder gains information to a network and remains unidentified for a persistent period of time which prolonged and targeted cyberattack. There APT attack monitor networks activity and damage at organization.
- **Data loss:** An unexpectedly deletion by the cloud service provider or corrupted, earthquake etc. which leads to loss of data permanently or cloud user later takes up appropriate measure of data backup.
- **Insufficient due diligence:** The good roadmap implementation and also evaluating the diligence due checklist, while evaluation on technologies. The organization faces number of risks due cloud technologies which choose without accomplishing due diligence.
- **Abuse and nefarious use of cloud services:** In the cloud computing environment arises threat due to weak registration systems. The cloud computing registration process, user having a authenticate credit card can use their service. Thus, malicious attacks to fraudulent account signups, expose to cloud computing models.
- **Denial of service (DoS):** The application or data is being secure and prevent attack by DoS. The cloud service consumes excess amount of system resources like disk space, memory, network bandwidth. Thus, it allows authorized service users without access to services.
- **Shared technology vulnerabilities:** in cloud resource like server and shared network between end user are consumed high amount of resource as a result the network traffic is congested or server is unable to access the cloud.

IV. CONCLUSION

This paper presented a brief detail of the cloud computing aspects; Resource Management and Security. The today's trend is heavily depended on the cloud this is due to availability of vast applications to users who wish to establish an organization in small scale industries to big industries. This paper elaborates on two aspects that is resource management and security issues. In the resource management it is noticed that several kinds of resources and in the security issues we have observed the different kinds of security threats that may harm the user's information. In the future work we consider the other aspects of the cloud computing and the solutions for the said security problems.

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