CLOUD COMPUTING ENHANCE DEPLOYMENT MODEL: AN OVERVIEW

Asst. Prof. Puja Vishwakarma
Department of computer science and application SDIMT, Haridwar

ABSTRACT:

Cloud Computing now a day's become very important for any organization. As cloud computing provide such environment that any user any organization can use Services of cloud computing or resources such as storage, database, application server or e-mail services .these type of resources or services can be accessed by cloud computing deployment models like public cloud, private cloud, community cloud, hybrid cloud, multiple cloud, hierarchical cloud and atmos cloud. This paper describes the different types of cloud services and deployment models. It also describes comparative study using charts i.e. how many organization prefer which type of deployment model. Cloud computing is one of the hottest trends. Most technological solutions are now on cloud. Due to its exceptional benefits, it has magnetized the IT leaders and entrepreneurs at all levels.

KEYWORDS: Cloud Computing, Deployment model and services, public cloud, private cloud, hybrid cloud, community cloud, hierarchical cloud and atmos cloud.

[1] INTRODUCTION:

Cloud computing provides lots of services delivered via the internet or through the cloud.it means cloud computing provide us the facility to use remote servers to store and access data Instead of relying on local drives. Before Cloud computing, organizations had to purchase and maintain their

205

own servers to fulfill their needs and requirement of organization. They do not have any such type of services to access data remotely and have to purchase enough space for their business requirements.

1.2 Cloud computing basically provides three types of services:

PaaS (Platform as a service), SaaS (Software as a service), IaaS (Infrastructure as a service).these services can be accessed using cloud computing deployment model. Deployment model provide type of access i.e. how can you use the services of cloud computing via public cloud, private cloud, hybrid cloud, multi cloud or atmos cloud.

1.3   What is cloud computing?

Simply cloud computing is the delivery of computing services including servers, storage, databases, networking , software , analytics and intelligence over the internet or " The Cloud " To offer faster innovation flexible resource and economics of scale. Cloud Computing is made by combination of cloud and computing .The term cloud refers to servers that are accessed over the internet located remotely. And computing refers any activity that uses computers to manage process and communicate information.

"It is on demand availability of computer system resources and computing power without direct active management by users."

1.4   Properties of cloud computing:

1.   On demand service.
2.   Broad network access availability.
3.   Resource pooling.

1.5   Component /Architecture of cloud computing:

Client infrastructure

Internet

- Application
- Software

- Storage
- Database
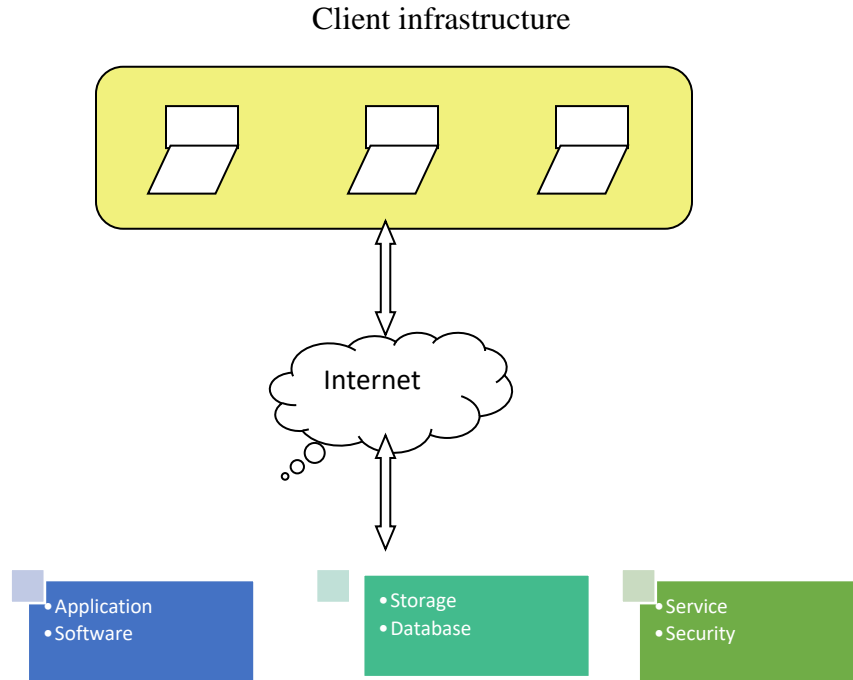
- Service
- Security

(Fig: 1.1 Architecture of cloud computing)

[2] CLOUD COMPUTING SERVICES:

There are following cloud services:
 (a) PaaS: Platform as a service.
 (b) SaaS: Software as a service.
 (c) IaaS: Infrastructure as a service.

SaaS: It is a software distributer model in which third party service provider host the application

And make them available to the customer.

Example: email, Google drive, face book, you tube etc.

(Fig: 2.1 Software as services)

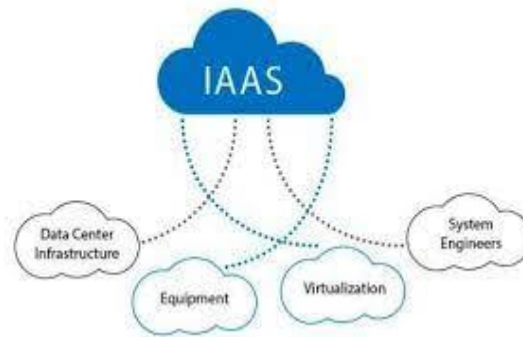PaaS: cloud vendors provide developer with a platform for building apps.

Example: Microsoft Azure, Google App engine.

(Fig: 2.2 Platform as services)

IaaS: Provides virtualized computing resources such as virtual m/c, storage servers.

Example: Aws (Amazon web services).

(Fig: 2.3 Infrastructure as services)

208

[3] CLOUD COMPUTING DEPLOYMENT MODEL:

Deployment model is access medium by which user access the cloud services. There are 5 types of deployment model which any user or any organization can use according to their need and demand of requirements on the basis of cost, speed, security and reliability. These are following Cloud computing Deployment model:

1. **Public Cloud**: As the name indicate public cloud which means any one can use the services of public cloud, its services are accessible by all no boundaries or restriction to use public cloud.
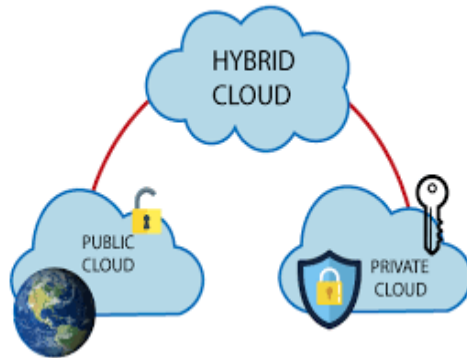

(Fig 3.1 public cloud deployment model)

2. **Private Cloud:** As the name indicate private cloud which means only authorized person or Organization can use the services of Private cloud. Its services is not accessible to all the users. If any Organization wants to access some services of the private cloud then they have to purchase the services from that particular service provider of private cloud.
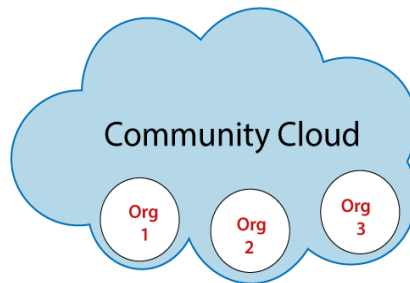

(Fig: 3.2 private cloud deployment model)

Puja Vishwakarma

3. **Hybrid Cloud**: Hybrid cloud is the combination of public cloud and private cloud. In hybrid cloud any organization or company use both services of public as well as Private cloud.

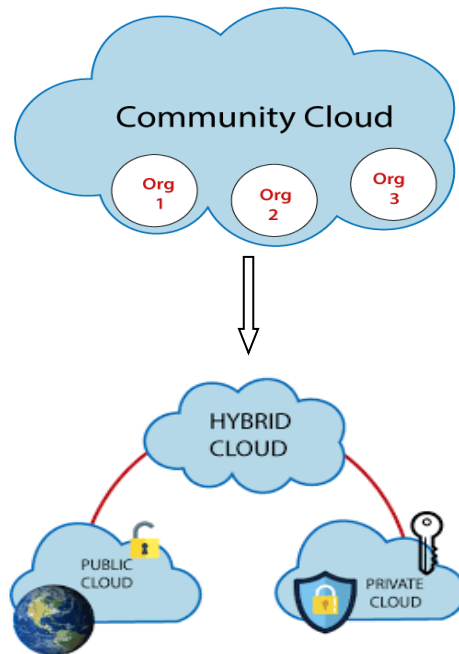**(Fig: 3.3 Hybrid cloud deployment model)**

4. **Community Cloud**: when more than one organization can access the services of either public cloud or private cloud then it is treated as Community cloud. We can say that all these organization work as a community because they use same services of that particular cloud services for different organization.

(Fig: 3.4 Community cloud deployment model)

5. **Hierarchical Cloud /Atmos Cloud**: when we combine all these cloud i.e. public, private, hybrid and community cloud then it formed a hierarchical structure of cloud computing

Puja Vishwakarma

model or we can say it is multilevel cloud computing deployment model which provide fastest accessing services any organization or company may access the services as per their requirement. It is an Atmos cloud computing where we have atmosphere of cloud services .we can access the services of atmos such as community cloud services, hybrid cloud services as well as public or private cloud services.

(Fig: 3.5 Atmos cloud deployment model /hierarchical model)

 [4] COMPARISION OF CLOUD DEPLOYMENT MODELS:

Table 4.1 this table show the differences among different cloud deployment model according to setup and installation process, cost, reliability,   flexibility and performance. Any organization or user use these deployment model according to these properties and budget.

Puja Vishwakarma

property	public	private	community	hybrid	hierarchical
Set up and installation	Very easy to set up .As the provider does the most of the work.	Very hard to set up as your team creates the system.	Easy to set up because of community practices	Very hard to set up due to interconnected systems.	Less hard to set up as it is combination of all public,private,community And hybrid cloud.
cost	Very inexpensive	Very expensive	Members share the costs.	Cheaper than private cloud deployment model.	Very expensive
Reliability	Less reliable due to some failure	More reliable than public cloud model.	Depands on the community of that cloud service provider.	More reliable	More reliable than hybrid and community cloud model.
Easy accessibility	Very easy to use	Complex and requires the help of provider.	Less complex to use.	Difficult to use	Less difficult to use and with the help of service provider it become easier to access the all services.
flexibility	No flexible	Very flexible	Little flexible	Very flexible	Very flexible
Scalability	Most service provider offer limited resources	Very high	Fixed limited resources for all organization.	High scalability	More highly scalable
performance	Low to medium	Very good	good	Very good	Excellent

Puja Vishwakarma

complexity	less	less	More than public	Less complexity	More complex
Managed by	Service provider	Single organization	Several organization	Service provider and organization	Service provider ,community and organization

[5] CONCLUSION:

This paper provides the information or knowledge about cloud computing, cloud services and cloud computing Deployment model. This paper also discuss the comparison of all cloud computing deployment models. Main objective of this paper is to introduce a new cloud deployment model. Atmos cloud computing or Hierarchical cloud model which provide the fastest access of services, as user or organization can choose the services of community cloud or hybrid cloud according to their need and requirement. To access the Atmos cloud services is costly as there is no limited resources are provided because user and organization have to pay to access these services or have to take subscription from service provider.

REFERENCES:

[1] **prof. Hiral B. patel, prof. Nirali kansara (March 2021**) - Cloud Computing Deployment Models: A Comparative Study.

[2] **Rafat Ara1, Md. Abdur Rahim2, Sujit Roy3, Dr. Uzzal Kumar Prodhan4 (June 2020)-** Cloud computing Architecture, Services, Deployment Model, Storage, Benefits and Challenges.

[3] **Naresh Kumar Sehgal, Pramod Chandra P. Bhatt, John M. Ac ken (. September 2019**)

-Features of Private and Public Cloud, Cloud Computing with Security.

[4] Mohammad **Haris, Rafiqul Zaman Khan (Nov-2018)-**A Systematic Review on Cloud Computing, International Journal of Computer Sciences and Engineering.

[5] **S. Saranya, Dr R Manicka Chezian (Sep-2016**) - Cloud Computing: Deployment model, Service model, Data base and Computing system, International Journal of Innovations & Advancement in Computer Science-Volume

[6] **Ahmed E. Youssef. (July 2012**) -Exploring Cloud Computing Services and Applications, Journal of Emerging Trends in Computing and Information Sciences.

[7] **Cloud Computing Articles (2010), SaaS+PaaS+IaaS**. Free Cloud Apps for Educational Institutes: Schools, Colleges,

[8] **L. Vaquero, L. Rodero-Merino, J. Caceres, and M. Lindner (January 2009) -** "A Break in the Clouds: Towards a Cloud Definition," ACM SIGCOMM Computer Communication Review.

[9] **Sultan, (2010) N.** "Cloud computing for education: A new dawn?"

[10] Toby**, V., Anthony, V. and Robert, E. (2009) -** "Cloud Computing, A Practical Approach".

Puja Vishwakarma