STUDY ON CLOUD DEPLOYMENT MODEL

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Abstract- The term Cloud refers to a Network or Internet. In other words, we are able to say that Cloud are some things, which is present at remote location. Cloud can provide services over public and personal networks, i.e., WAN, LAN or VPN. Applications like e-mail, web conferencing, customer relationship management (CRM) execute on cloud. Cloud Computing refers to manipulating, configuring, and accessing the hardware and software resources remotely. It offers online data storage, infrastructure, and application. Deployment models define the kind of access to the cloud, i.e., how the cloud is located? Cloud can have any of the four varieties of access: Public, Private, Hybrid, and Community. The public cloud allows systems and services to be easily accessible to the final public. Public cloud is also less secure due to its openness. The private cloud allows systems and services to be accessible within a corporation. it's more secured due to its private nature. The community cloud allows systems and services to be accessible by a bunch of organizations. The hybrid cloud may be a mixture of public and personal cloud, during which the critical activities are performed using private cloud while the non-critical activities are performed using public cloud.

Index Terms— Cloud Computing, Deployment Model

INTRODUCTION

There are four deployment model use in cloud computing Private Cloud, public cloud, Hybrid cloud, Community cloud Private Cloud allows systems and services to be accessible within an organization. The Private Cloud is operated only within one organization. However, it should be managed internally by the organization itself or by third-party .An example of a private cloud deployment is where you maintain your own servers and infrastructure that hosts your applications and data. What we call a data center. you may be running Vmware or Hyper-V for a vitualized setup with limited phyiscal boxes hosting many virtual servers. Public Cloud allows systems and services to be easily accessible to general public. The IT giants like Google, Amazon and Microsoft offer cloud services via Internet..Examples of public clouds include ESDS eNlight Cloud environments, Amazon Elastic Compute Cloud (EC2), IBM Blue Cloud, Sun Cloud, Google AppEngine , and Windows Azure Services Platform. Public cloud. The cloud infrastructure is meant for open use by the public. Hybrid Cloud could also be a mix of public and private cloud. Non-critical activities are performed using public cloud while the critical activities are performed using private cloud. Hybrid cloud refers to a mixed computing, storage, and services environment product of on-premises infrastructure, private cloud services, and a public cloud—such as Amazon Web Services (AWS) or Microsoft Azure—with orchestration among the various platforms. Community Cloud allows system and services to be accessible by group of organizations. It shares the infrastructure between several organizations from a selected community. it should be managed internally by organizations or by the third-party. An example of a community cloud is OpenCirrus, which can be a cloud computing research testbed intended to be utilized by universities and research institutions.

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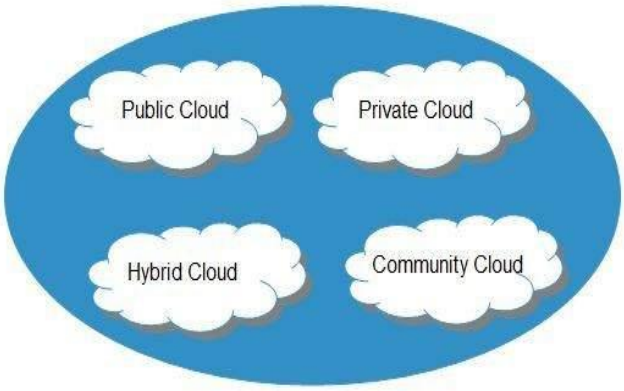
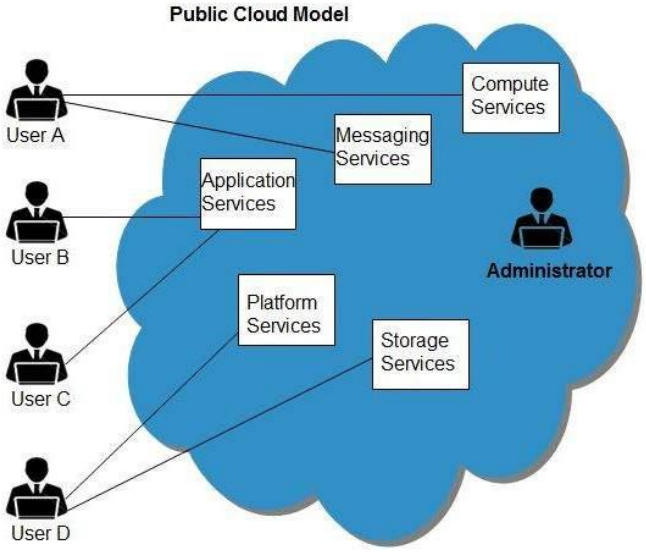


Figure: Cloud Computing Deployment Models Types

METHODOLOGY

1. Public cloud

A public cloud is a type of computing in which a service provider makes resources available to the public via the internet. Resources vary by provider but may include storage capabilities, applications or virtual machines. Public cloud allows for scalability and resource sharing that would not otherwise be possible for a single organization to achieve.
The public cloud model is the most recognized model of cloud computing to several consumers that offers services in a virtualized environment. The pool of shared physical resources and the environment can be accessed over a public network is internet[1].



Advantage of Public cloud :

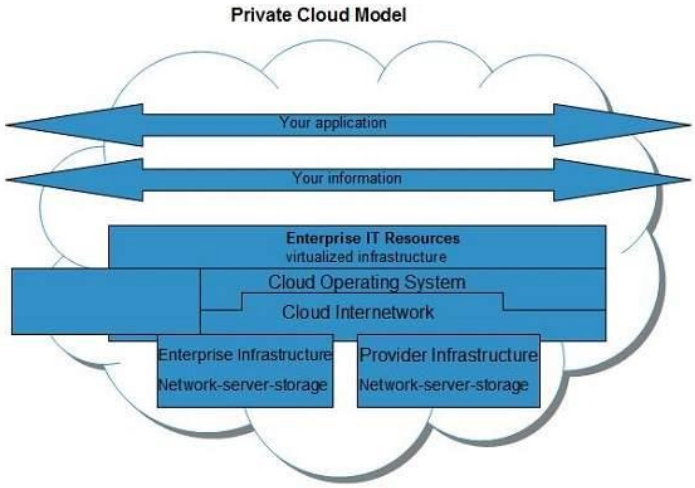
1. It offers greater scalability
2.Its cost effectiveness helps you economize
3.It offers reliability which implies no single point of failure will interrupt your service.
4.Services like SaaS, (Paas), (Iaas) are easily available on Public Cloud platform because it may be accessed from anywhere through any Internet enabled devices.
5.It is location independent – the services are available wherever the client is found

Disadvantage of Public Cloud:

1.No control over privacy or security
2.Cannot be used to be used of sensitive applications
3.Lacks complete flexibility because the platform depends on the platform provider
4.No stringent protocols regarding data management

2. Private Cloud Computing:

A cloud platform during which a secure cloud-based environment with dedicated storage and hardware resources provided to one organization is termed Private Cloud Computing. The Private cloud may be either hosted within the corporate or outsourced to a trusted and reliable third-party vendor. It offers company a greater control over privacy and data security. The resources just in case of personal cloud aren't shared with others and hence it offers better performance compared to public cloud. the extra layers of security allow company to process confidential data and sensitive add the private cloud environment.[2]



Advantage of Private Cloud Computing

1.Offers greater Security and Privacy
2.Offers more control over system configuration as per the company's need
3.Greater reliability when it involves performance
4.Enhances the standard of service offered by the clients 5.Saves money

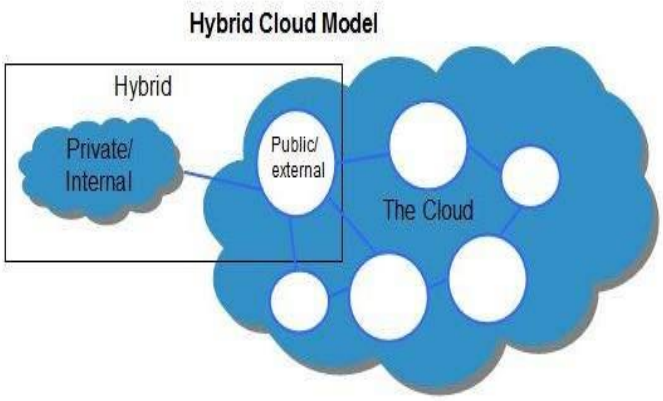
Disadvantage of private Cloud
1.Expensive when put next to public cloud
2.Requires IT Expertise

3. Hybrid Cloud Computing:[3]

Hybrid Cloud computing allows you to use combination of both public and personal cloud. This helps companies to maximise their efficiency and deliver better performance to clients. during this model companies can use public cloud for transfer of non-confidential data and start to non-public cloud just in case of sensitive data transfer or hosting of critical applications. This model is gaining prominence in many businesses because it gives benefits of both the moel.

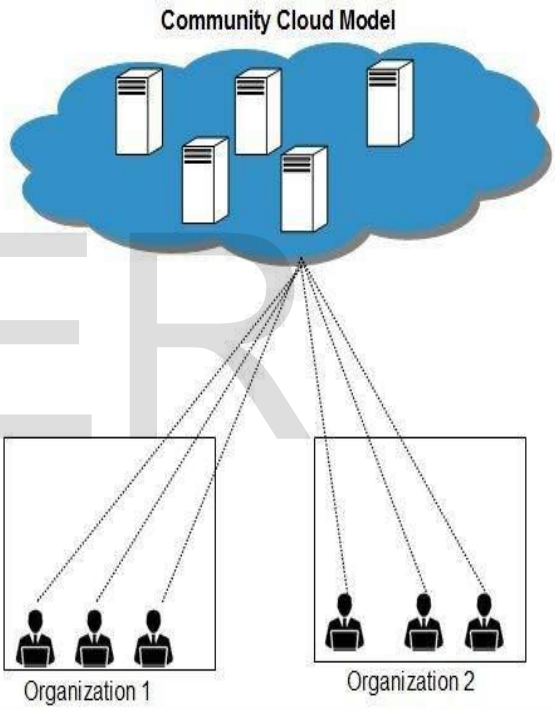
Advantage of Hybrid Cloud Computing
1.It is scalable
2.It is cost efficient
3.Offers better security
4.Offers greater flexibility

Disadvantage of Hybrid Cloud Computing
1.Infrastructure Dependency
2.Possibility of security breach through public cloud



4. Community cloud computing:

A community cloud could be a cloud service model that has a cloud computing solution to a limited number of people or organizations that's governed, managed and secured commonly by all the participating organizations or a third-party managed service provider. Community clouds are a hybrid sort of private clouds built and operated specifically for a targeted group. These communities have similar cloud requirements and their ultimate goal is to figure together to attain their business objectives. Community clouds are often designed for businesses and organizations performing on joint projects, applications, or research, which needs a central cloud computing facility for building, managing and executing such projects, irrespective of the answer rented.[4]



Advantage of community cloud:

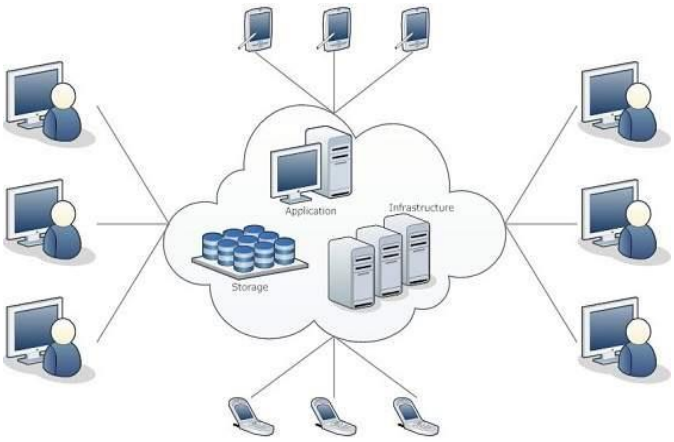
1) Cost Effective: community cloud offers same advantage as that of personal cloud at low cost
2) Sharing Between Organizations: Community Cloud Providers an infrastructure to share cloud resources and capabilities among several organizations.
3) Security: community cloud is relatively safer than the general public cloud.

Disadvantage of community cloud:
1) Data accessible between Organization: Since all data is housed at one location, one must be careful in storing data in community cloud because it might be accessible by others.

2) Challenging in Responsibilities: it is also challenging to allocate responsibilities of governance, security and cost.

Cloud Computing

Cloud Computing refers to manipulating, configuring, and accessing the hardware and software resources remotely. It offers online data storage, infrastructure, and application. Cloud computing offers platform independency, because the software isn't required to be installed locally on the PC. Hence, the Cloud Computing is making our business applications mobile and collaborative. Cloud computing is additionally a widely known term now .The term, cloud computing doesn't have a unique definition. Each researcher or scientisthas their own definition .A popular and global research firm, Gartner Group defined cloud computing as 'A forecaster of knowledge technology' defines cloud computing because the way of computing during which scalable and elastic IT-enabled capabilities are delivered as a service using Internet technologies. IEEE Computer Society defined it as : "A paradigm during which information is consistently stored in servers on the net and cached temporarily on clients that include desktops, entertainment centres , computers, notebooks, handhelds, etc".[6]



Reduce IT cost

Moving to cloud computing may reduce the value of managing and maintaining your IT systems. instead of purchasing expensive systems and equipment for your business, you'll be able to reduce your costs by using the resources of your cloud computing service provider. you will be able to reduce your operating costs because:

• the cost of system upgrades, new hardware and software is also included in your contract

• you now not have to pay wages for expert staff

• your energy consumption costs is also reduced

• there are fewer time delays.

Scalability

Your business can proportion or scale down your operation and storage needs quickly to fit your situation, allowing flexibility as your needs change. instead of purchasing and installing expensive upgrades yourself, your cloud computer service provider can handle this for you. Using the cloud frees up some time so you'll be able to get on with running your business.

Business Continuity

Protecting your data and systems is a vital a part of business continuity planning. Whether you experience a natural disaster, power outage or other crisis, having your data stored within the cloud ensures it's insured and guarded in a very secure and safe location. having the ability to access your data again quickly allows you to conduct business as was common, minimising any downtime and loss of productivity

Collaboration efficiency

Collaboration in a very cloud environment gives your business the flexibility to speak and share more easily outside of the standard methods. If you're acting on a project across different locations, you'll use cloud computing to convey employees, contractors and third parties access to the identical files. you'll also choose a cloud computing model that produces it easy for you to share your records along with your advisers (e.g. a fast and secure thanks to share accounting records along with your accountant or financial adviser).

Flexibility of work Practices

Cloud computing allows employees to be more flexible in their work practices. as an example, you have the flexibleness to access data from home, on holiday, or via the commute to and from work (providing you have an online connection). If you want access to your

data while you're off-site, you will be able to connect together with your virtual office, quickly and easily.

Access to automatic Update

Access to automatic updates for your IT requirements could also be included in your service charge. reckoning on your cloud computing service provider, your system will regularly be updated with the newest technology. this might include up-to-date versions of software, furthermore as upgrades to servers and computer processing power.

Why does cloud computing need deployment model ?

After you've got chosen the cloud service model that most closely fits your need, you would like to see your cloud deployment model. you'll make a choice from among public, private, community, and hybrid. the majority believe that the hybrid cloud model is that the model that may be employed in most organizations. However, you continue to must consider which model is best for your organization.

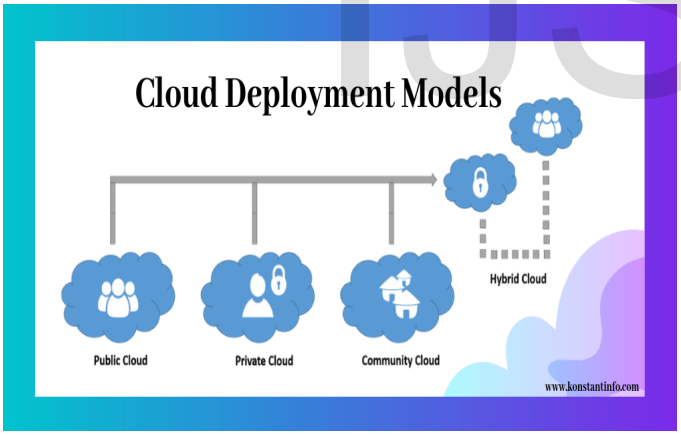


Figure: Cloud Computing Deployment Model Chain [5]

User Experience:
The cloud offers different user experiences reckoning on which deployment model you select. If you select to travel with a personal cloud, you'll complete control over the user experience. you'll be able to control the applying, the network, and, in most cases, the client systems. this permits you to tune everything for best performance and value. If you escort a public cloud, in some cases you would possibly haven't any control over the user experience. during a community cloud environment, your control over the user experience depends on the agreement you've got in situ with the opposite members of the community.

Security :

Security is often a sophisticated topic. It's even more complicated when you're handling the cloud. It mainly comes right down to trust. Whom does one trust along with your security? Many organizations would rather trust a 3rd party than trust themselves. there's absolutely nothing wrong therewith. Security is such a crucial concern that you simply have to escort what you trust.

Responsibilities:

Responsibilities vary greatly looking on which cloud model you plan to travel with. this could be another key consider your decision. In fact, one amongst the large drivers of public clouds is organizations' desire to cut back their internal responsibilities.

CONCLUSION:

The cloud computing is expanding and spreading as a business solution since its shown effective and positive results which put it within the top of information and communication technologies i.e. Flexibility within the space and large support for infrastructure and software .This innovation has many potentials that increase revenue, expand business and build new jobs that stretch to large sectors not only with in the sector. It plays a significant role within the smart economy. Without doubt it'll be the fifthutility after water, gas, electricity, and mobile phones which are always-on and paid by usage of consumer.

REFERENCE

1. Public

https://convergenceservices.in/blog/corporate-blog/436-public-private-and-hybrid-cloud-computing-advantages-and-disadvantages.html

2. private

https://convergenceservices.in/blog/corporate-blog/436-public-private-and-hybrid-cloud-computing-advantages-and-disadvantages.html

3. hybrid
https://convergenceservices.in/blog/corporate-blog/436-public-private-and-hybrid-cloud-computing-advantages-and-disadvantages.html

4. community cloud:
https://www.dineshonjava.com/community-cloud-model-in-cloud-computing/

5. Diagram:
https://www.tutorialspoint.com/cloud_computing/cloud_computing_community_cloud_model.htm

6. cloud computing :
https://www.tutorialspoint.com/cloud_computing/cloud_computing_overview.htm
https://www.business.qld.gov.au/running-business/it/cloud-computing/benefits