



A REVIEW OF APPLICATION AREAS AND SCOPE OF CLOUD BASED COMPUTING

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Abstract: Cloud may be network or internet and it is something that is available at remote place. Cloud services are offering the flexible and scalable services. But there is always issue of security. When data is transferred from centrally located server storage to different cloud the compromise of person and private data would increase. There is always risk to the confidentiality and availability of data prior to selecting a cloud vender or choosing own cloud and cloud service migration. Cloud services usually have their security concerns that must be addressed.

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[1] Cloud Computing

Cloud may be network or internet and it is something that is available at remote place. It provides services over network that are public and private. They are used in wide area network, local area network or virtual private network. Several application like email and web based conferencing executes on cloud.

Platform independency is offered by cloud computing because there is no need to install software on personal computer. So we can say that our business applications are mobile and collaborative due to cloud computing.

There are several services that are making cloud computing more feasible and easily accessible to the users.

Cloud computing is providing number of advantages but there are several risks associated with this technology.

[2] Benefits of cloud computing

Cloud computing provides several benefits and they are listed below

1. User on internet could access remote applications in form of utilities.
2. User at any time can change and configure the application online
3. Online development tools are offered by cloud computing.



4. Online deployment tools are provided by cloud computing.
5. Clients are provided platform independent access of cloud resources that are available on internet.
6. On-demand self services are offered by cloud computing and there is no need of interaction with cloud service provider.
7. Cloud computing operates at high efficiency and it does optimum utilization so it is highly cost effective.
8. Load Balancing feature of cloud computing represent that it is more reliable.

Cloud Based Delivery

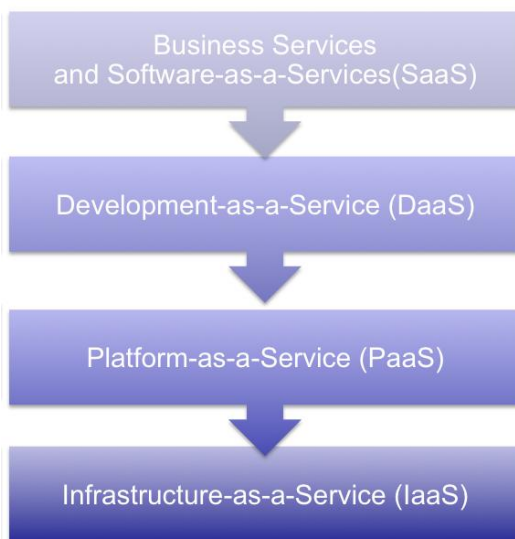


Fig 1 Cloud Based Delivery

[3] Need of Cloud Computing

1. Its provides 24x7 Support
2. Cloud computing pay as we use
3. It has lower Total Cost of ownership
4. Cloud computing provides Reliability, scalability, sustainability.
5. It provides Secure Storage Management Expenditure.
6. It is capable to Free up Internal Resources.
7. Such systems are Highly Automated.
8. These Systems are Utility Based.
9. It allows Easy & Agile Deployments.
10. Such systems are Device & Location Independent.

[4] CHARACTERISTICS OF CLOUD COMPUTING

Cloud computing exhibits following keys:

1. Awareness for organizations might be better, as cloud computing may increase users' flexibility within re-provisioning, adding up, or increasing



- technological infrastructure resources.
2. Cost reductions are claimed by cloud providers. A public-cloud delivery model converts capital expenditures to operational expenditure. Pricing on a utility computing basis is "fine-grained", within usage-based billing options. The project has repository contains some articles looking into price aspects in more detail, most of them concluding that costs savings depend on type of activities supported & type of infrastructure available in-house.
 3. Device and location independence allow users to access systems using a web browser in spite of their location or what device they uses. As infrastructure is off-site & accessed throw Internet, users could connect to it from anywhere.
 4. Running of cloud computing applications is easier, because they do not require to be installed on every user's & could be accessed from different places.

Hybrid cloud

Hybrid cloud is a composition of two or more clouds (private, community or public) that remain distinct entities but are bound together, offering benefits of multiple deployment models. Hybrid cloud could also mean ability to connect collocation, managed and/or dedicated services within cloud resources. Gartner, Inc. defines a hybrid cloud service as a cloud computing service that is composed of some combination of private, public & community cloud services, from different service providers. A hybrid cloud service crosses isolation & provider boundaries so that it can't be simply put in one category of private, public, or community cloud service.

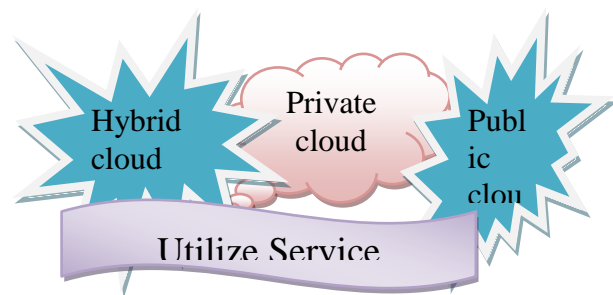


Fig 1.6 Public cloud VS Private cloud

[5] Cloud Server model

Type of access to cloud has been defined by Deployment model. There are four types of accessibility in cloud that are



public access, private access, Hybrid access and Community access.

Public Cloud

Access to general public is allowed by public cloud. Due to openness public cloud is less secure

Private Cloud

Due to its private nature private cloud is considered more safe and secure.

Community Cloud

Accessibility to a particular group is allowed by community cloud.

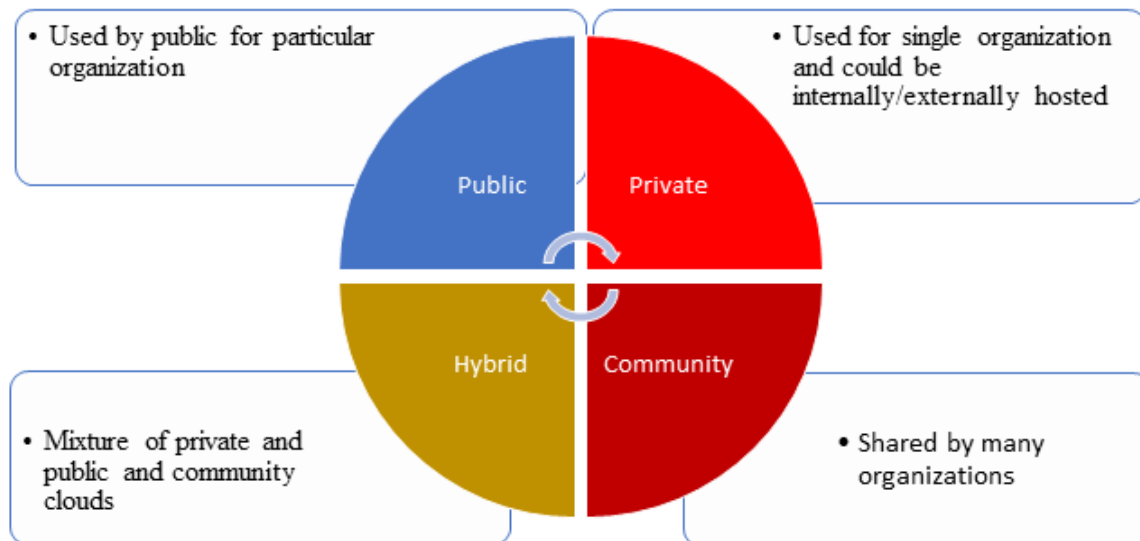


Fig 2 Cloud Server Model

Hybrid Cloud

A Hybrid Cloud could be considered as combination of public cloud and private cloud where private cloud does critical tasks and public cloud does non-critical tasks.

Service Models

There are three service models in cloud computing. First is Infrastructure as a Service, Second one is Platform as a Service and last one is Software as a Service.

[6] Security issues in Cloud computing

Third party provides data and infrastructure management in cloud



computing so the security of cloud is biggest concern. There is a risk in providing the sensitive data to cloud service provider. Any security breach could result in customer or business loss so vendors provide protection to the accounts.

Customer cannot switch from one cloud service provider to another quickly so he is dependent on cloud service provider for service. Customer management interface is usually accessible on network in case of various public cloud service providers.

Data security must be considered in cloud because data is frequently transferred over Internet. The basic mechanisms to protect data over cloud are data auditing, data access control, data authentication and data authorization.

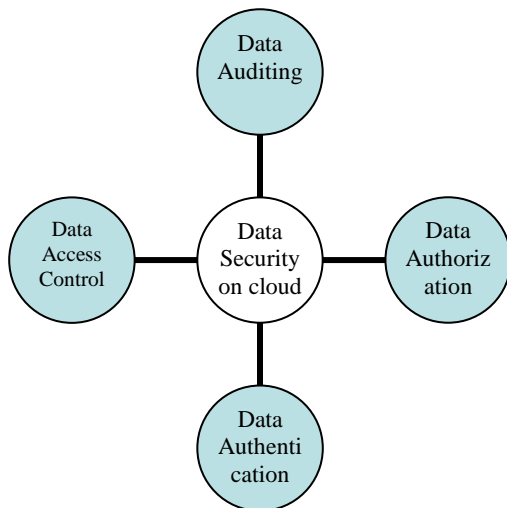


Fig 3 Data Security on cloud

[7] SCOPE OF RESEARCH

Cloud has provided flexible and scalable services. But there would issue of security due to data transfer from one cloud server storage to another cloud. This research would reduce the risk to the confidentiality and availability of data prior to selecting a cloud vendor or choosing own cloud. The security concerns of cloud services have been addressed in our research. In some research author provide modern security system and proposed an idea to secure data on cloud using multiple layers of security. In some model they have also introduced the image transmission and Electronic data interchange based transmission. Several cloud based system has wide scope and it has additional security and data transmission feature as compare to traditional.

Data was made non understandable but this system could not stop destruction of data by intruders. In our research we have provide security to data as well as we have saved data from being destroyed by attacker. In some research security key to encrypt data was not much strong & delay was increased in data transmission due to



security reasons. Here we have reduce transmission delay by reducing size of packet & made security key more strong's Battle btw ethical or white hat hackers & malicious or black hat hackers has been long war, that has no end. While ethical hacker help to understand companies' their security needs, malicious hackers intrudes illegally & harm network for their personal benefits. Ethical & creative hacking has been significant in network security, in order to ensure that company's data has been well protected & secure. At same time this allows company to identify, & in turn, to take remedial measures to rectify loopholes that exists in security system, that might allow malicious hacker to breach their security system.

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