Cloud Computing and its Deployment Model: A Short Review

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ABSTRACT

Cloud computing is an important name in today's age of computing. This is kind of computing platform or architecture which believes in virtualization. The virtualization is including Hardware, Software, Application Packages and others. Cloud computing uses commodity based hardware as its base. This is actually helps the organization to buy the run IT Infrastructure of their own. Thus it helps general organization to get service to other organization and need to pay depending upon requirement. Though cloud computing has some of the benefit but still treated as most advance result of computing research. Cloud computing deployment models may be classified in to three main category and some minor types. This paper is talks about cloud computing and its basic nature; including its various deployment model with special reference to SWOT Analysis.

Keywords: Cloud Computing, Computing, Virtualization, Information Infrastructure Building, Advance Computing, Public Cloud, Hybrid Computing, Private Computing.

Cloud Computing is actually results of several initiatives and integration of several computing models and methods. These are Service Management, Virtualization including consolidation, Robust Security, resilience, better energy efficiency and other benefits. In short cloud computing systems is a centralized service unit which provides several hardware and software service to its client through its dedicated network. Actually the dedicated network is a kind of internet having strong broad band facilities and interrupted service. Cloud computing promote green computing [which is mainly dedicated to energy consumption, power saving, use of less carbon emission, environment friendly computing and technological uses] services many ways; as this is promotes to use centralized machine uses thus client no need to machine and equipment of their own ; thus some centralized systems serve the whole user based. Cloud

computing is gaining popularity around the world, day by day and mainly in the developed countries due to healthy IT infrastructure.

OBJECTIVE

The main aim and objective of this study is includes:-

❑   To learn basic about cloud computing and cloud Architecture;

❑   To find out main benefits of cloud computing and the general computing;

❑   To learn the main deployment models of cloud computing; including some general and less discussed deployment models;

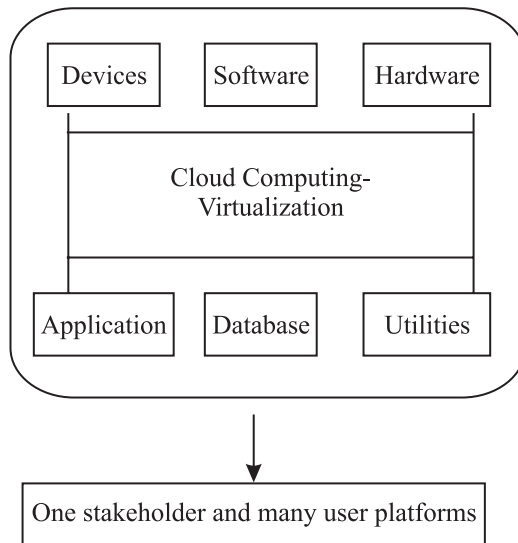❑   To find out main strength, weakness, opportunities and threat [SWOT] of cloud deployment models.

Devices	Software	Hardware
Cloud Computing-Virtualization		
Application	Database	Utilities

One stakeholder and many user platforms

Fig. 1. Showing component of virtualization at a glance

CLOUD COMPUTING

Cloud computing is a kind of computing Architecture which helps in Virtualization Information Technology Infrastructure which includes hardware, software, Application packages and other computer equipment and facets. Cloud Computing according to some expert not a computing; this is a platform or architecture in which advance virtualization is possible. In Cloud Computing hardware can be replaced any time without affecting the cloud. Practically it is uses a type of commodity based software container system. Cloud Computing is actually run without comprising the privacy and security of their data. it helps in healthy Information

Infrastructure Building as it help business achieve information compliance, centralized service offering as well as management is another main benefits of cloud computing.
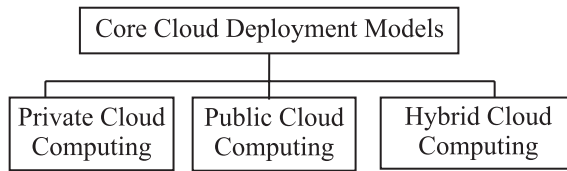
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        ┌─────────────────────────────┐
        │  Core Cloud Deployment Models │
        └─────────────────────────────┘
   ┌───────────────┬──────────────┬───────────────┐
┌──────────────┐ ┌──────────────┐ ┌──────────────┐
│ Private Cloud │ │ Public Cloud │ │ Hybrid Cloud │
│   Computing   │ │   Computing  │ │   Computing  │
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Fig. 2: Depicted general deployment models of Cloud computing at a glance

DEPLOYMENT MODEL AND BASIC TYPES

Cloud Computing deployment models means the delivery models in which cloud service basically provided to the user or client. Cloud computing is a style of computing where several activities have been done. In broad way, cloud computing may be classified as – Public Cloud Computing, Private Cloud computing, and Hybrid Cloud Computing. Though depending upon user and service types it may also categories as Community Clouds, Shared Private Cloud, Dynamic Private Cloud, and Dedicated Private Cloud and so on. Each of these platform or models is useful in its respective field.

PUBLIC CLOUD COMPUTING: SWOT ANALYSIS

When Cloud computing service basically provided to the user from general public internet service [i.e. Third Party internet] it is called Public Cloud Computing. The main *Strength* of this type of cloud computing is- it is very much elastic, cost effective means to deploy solution. It is also a kind of utility computing; as the components or client are independent to pay depending upon need.

But still it has several *Weaknesses* like still application workload not ready for public cloud today. Some other www may be still organization not ready to move the LDAP server into a cloud for several information securities. Though in this model, workloads requiring flexibly and customization. It is also requires high level of audit ability and accountability. Though *Opportunities* are including here compare can use offload commodity applications to third party service providers. Public Cloud Computing may be seen as public wikis, blogs, public facing, and WebPages. However it has some other *Threat* like in many cases, Third party software that does not have a virtualization, and its requires time to time utilization measurement for healthy capability building and further utilization. It also requires online backup and restore type of solutions.

PRIVATE CLOUD COMPUTING AND SWOT ANALYSIS:-

Private Cloud Computing platform basically run by the on site servers and most of the cases, deployment is provided on premise on located inside the organization. Private Cloud

Computing has, so many **Strength** out of which elasticity and on demand capacity, service based access are considered as important benefit, virtually, these facilities are also possible to obtain in public cloud computing deployment model. The **Weakness** of private cloud computing are including; need to host in house servers or attached dedicated deployment model. In many cases, for pic loads, these is a chance for inefficient excess capacity.

However the **Opportunities** are includes higher security and less tension to the company authority as the users details, Employee details, are only restricted to the company's inside. Though apart from these, private cloud computing provides – Virtualization, Government and Management, Multy- Tenancy, Consistent deployment. It is in other sense is cost saving and speedy and all time available. Though private cloud computing is deals with so many threats like on demand, requirement based service provide. This service is require when in house system may fail to operate or for any kind of technical fault. Regarding its threat Kumar Saurav mention "Removing Undifferentiated heavy lifting by offloading data centre operations"

HYBRID CLOUD AND APPLICATIONS

Yes, the name is indicating that, Hybrid Cloud computing platform is actually a mixing of both Public Cloud and Private Cloud Computing. Or in other sense it is a public private cloud computing model. In this mode organization basically sent the general information and resource to the public cloud and this service is avail day by day. While the secure secret information and resources are basically kept in companies own data base; called private cloud computing.

The main **Strength** of this type of cloud computing is, it is provide better scale and convenience of a public cloud and the control as well as reliability and infrastructure of private cloud computing; this elasticity of scale up and down is an important step. However in Hybrid Cloud Computing, **Weakness** is that organizations need to arrange both the facilities- off campus and on campus thus it involves higher level of planning and adequate Funding. **Opportunities** are apart from elasticity and indecency – the network isolation and secure connectivity. During less important information and reserve sharing are can go for public cloud; fully for cost saving. The Threats of cloud computing is including through out maintain all type of servers and offers.
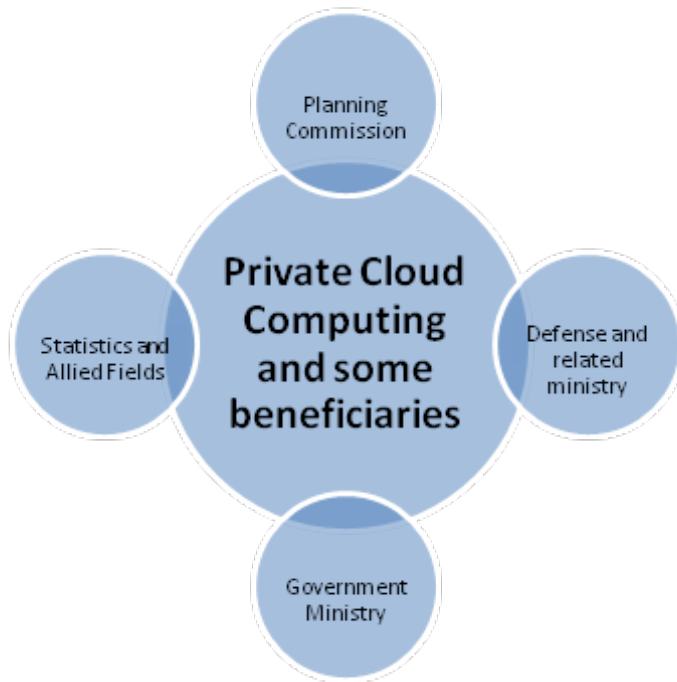
Fig. 3. Depicted usefulness of private cloud computing

Some other Cloud Deployment Model:-

Apart from these cloud computing deployment models, some other cloud computing deployment models are also these; let discuss type, briefly.

❒ Community cloud computing, which is actually run by a group of controlled and shenged organization to software, Hardware and other application provided by cloud computing. Here common interest, mission and integrity and helpful environment is very much important.

❒ Shared private cloud computing is to some related to earlier one, but here importance are provided I shared compute capacity and demand based service provided by the third party.

❒ Dedicated Private cloud computing deployment model is another one; where service provider provides dynamic service; and accounting facilities depending upon requirement. It is helpful for running both new and existing account.

❒ Dynamic Private Cloud; this is allows the robust sharing and dedication where client workload to dynamically migrate to and from the compute cloud requirement is permissible.

Thus virtually it is clear that, cloud computing is most advance computing practice which is a mix-up and combination of better grid computing, utility computing and some other advance model.

FINDINGS

- ❒ Cloud computing provides several development models; depending upon need it is essential to select the model;

- ❒ Government organization still regulating cloud computing services and mainly public cloud computing;

- ❒ For public computing healthy internet computer and broad band connection is very much important.

- ❒ Though cloud computing has several platform but out which public cloud, private cloud and hybrid cloud consider as main types.

CONCLUSION

Both public cloud computing and private cloud computing is important and valuable in their own places. Some of the interesting benefit of public cloud computing is includes lower bb to entry, cost saving nature, increasing and decreasing of capacity in very short time. Though, other hand, in private cloud computing model, Automatic provision system and standardization is allows the systems as per provision and demand. In today's age cloud computing is gaining popularity for its several service delivery, rapid innovation, scalable computing, provide dynamic computing platform for building advance information infrastructure.

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