All about Cloud Computing

Nikhil Zutshi[1], Monika[2]
[1,2] *Department of Computer Science Engineering, Dronacharya College of Engineering, Gurgaon, Haryana, India*

***Abstract*- In today's time cloud computing is one of the most emerging technologies in the field of IT. Cloud Computing Is totally based in the use of internet. It is a combination of the hardware, software and infrastructure. It has various features and advantages. The result of this review is to make you know about what is cloud computing and why it is used so much in IT industry now days.**

***Index terms*- Cloud, Cloud Computing, IaaS, PaaS, SaaS**

I.INTRODUCTION

What is cloud computing? The idea of Cloud is in the name of this technology only that is Cloud just as the Clouds are everywhere in the sky around us all over the world and the that cloud is composition or collection of condensed water particles in the same way the cloud in cloud computing is composed of the various networks.

Cloud Computing makes use of the networks of the remote servers hosted on the internet for storing, processing and management of the data rather than making use of local servers such that the data can be accessed or stored from anywhere around the globe. Before Cloud Computing was introduced if any new project has to be started the need of all the resources and the infrastructure required had to be fulfilled on our own from different resource and infrastructure providers but using cloud computing we can get all that in no time at one platform only, And once our word is done then we can leave all the resources and infrastructures and can pay for only for the time we have used that resource and infrastructure.

It works on the policy of PAY AS YOU GO.

II. COMPONENTS OF CLOUD COMPUTING

Mainly there are three components of cloud computing:-

(1) Client

In this component the interaction can be performed between the cloud and the end user with the help of the clients connecting device like laptop, desktop, etc.

(2) Distributed Servers

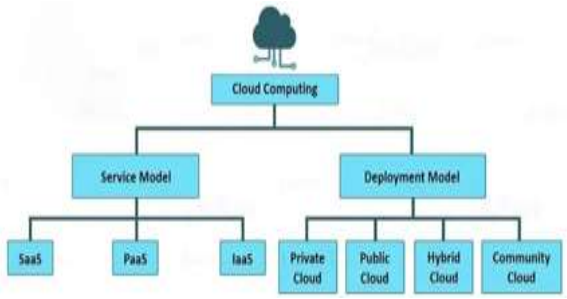
In this component there are several servers which are distributed at different places but it seems like these all servers are working together.

(3) Datacenter

In this component there is a homogeneous collection various servers which composes of all the subscribes applications.

III. TYPES OF CLOUD COMPUTING

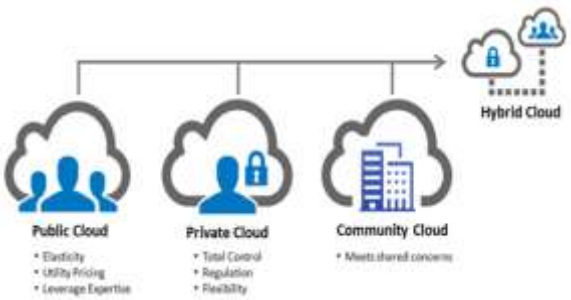
There are mainly 2 types of Cloud Computing and which further have 4 and 3 sub parts respectively:-



1. Cloud Deployment Models
   a. Public Cloud
   b. Private Cloud
   c. Hybrid Cloud
   d. Community Cloud

2. Cloud Services Models
   a. IaaS
   b. PaaS
   c. SaaS

IV. CLOUD DEPLOYMENT MODELS



Cloud deployment consists of different types of models and each model has its special specification and the selection of the model depends on the type of the work which is to be performed by the organization. Majorly the type of the model which is used decides what services you are going to provide to your users.

The deployment models are as follows:

(a) Public Cloud

In Public Cloud Everything is accessed and stored in through the internet. And any internet user with proper permissions can get access to the applications and resources. In Public cloud the user doesn't owe anything hardware or software everything is provided by the Service Provider. Some of their examples are: AWS and Microsoft Azure

(b) Private Cloud

In Private Cloud the whole infrastructure is only and only for one particular organization. The company can use that for its own use or can outsource it to a hosting company. And when all the tasks are done the services or the infrastructure its maintenance is done on a private network.

Some of their examples are: AWS and VMware

(c) Hybrid Cloud

Hybrid Cloud can actually be said as the combination of both Public and Private Cloud. In this the organization can keep some of their data in Public Cloud for access of local users and some of their data in Private Cloud to store important or sensitive data.

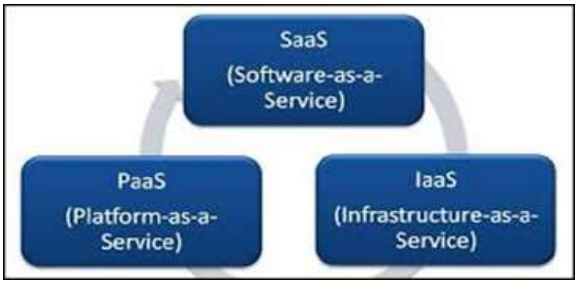
One of the examples is: NASA

(d) Community Cloud

In Community Cloud there is a common resource for all the organizations and they all can get access to that resource because they fall in same community.

Some examples are: Universities for sharing research data and Police department within a country or state for sharing resources.

V. CLOUD SERVICES MODELS



Cloud Service Model basically consists of three models IaaS, PaaS, SaaS. Each model has its own features and benefits, each user can choose any of the three models according to the need of the organization.

(a) IaaS

The full form of IaaS is "Infrastructure as a Service". In IaaS we commonly rent the IT resources or the Infrastructures and pay on hourly bases. Using IaaS we can also create a Virtual Data Center and get access of it from anywhere around the world. The user of IaaS can access the services through the World Wide Area Network.

Examples: AWS Elastic Computing Cloud (EC2)

(b) PaaS

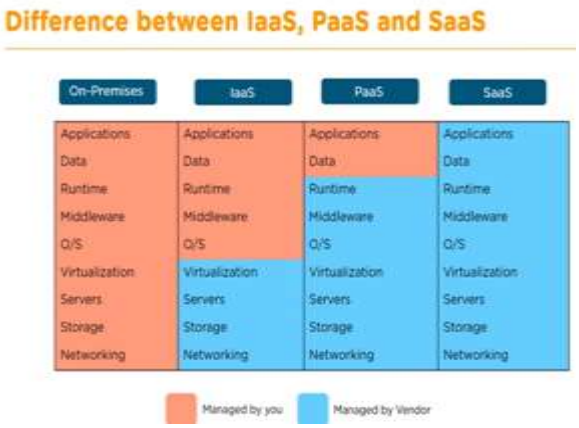
The full form of PaaS is "Platform as a Service". In PaaS the provider will provide me a pre-built platform in which we can deploy our codes or applications and they will be ready to use, we only have to manage the code not the infrastructure.

Example: AWS Elastic Beanstalk

(c) SaaS

The full form of SaaS is "Software as a Service". In SaaS the end product is given to us by the cloud service provider i.e. software or application and we use that product on subscription bases. In this the client takes care of the software only, but it does not maintain any kind of equipment.

Example: AWS



VI. BENEFITS OF INVESTING IN CLOUD COMPUTING

1 Speed: If we want any resources for our project we can get that at that very moment and can also make that resource workable instantly just using cloud.

2 Cost: When all the resources are to be bought from different platforms they become expensive and by using cloud we can get all the resources at one place and at a very less rate.

3 Scalability: Scalability means that the amount of resources required can be changed according to the change in the requirement that is the amount of resources can be increased or decreased according to the requirement of the time without any difficulty.

4 Accessibility: Accessibility is that the data can be accessed from anywhere around the globe at any time.

5 Security: Cloud provide the best security for its stored data, the data is stored in centralized secure location.

VII. CONCLUSION

In this review, we have briefly described about what is cloud, cloud computing, it's various features, its various parts, why it is very efficient and at the end we have also described its benefits. As, the IT industry is blooming day by day the need of cloud in the market is also increasing, so the people of this IT sector should have some knowledge and information about the Cloud Computing. And, in today's time every small firm is shifting on the cloud platform due to its benefits so the future of Cloud Computing is very bright.

REFERENCES

[1] Marston, S., Li, Z., Bandyopadhyay, S., Zhang, J., Ghalsasi, A.: Cloud computing - The Business Perspective. Decis. Support Syst. 51, 176–189 (2011).

[2] Garrison, G., Kim, S., Wakefield, R.L.: Success Factors for Deploying Cloud Computing. Commun. ACM., 55, 62–68 (2012)

[3] Venters, W., Whitley, E.A.: A Critical Review of Cloud Computing: Researching Desires and Realities. J. Inf. Technol. 27, 179 - 197 (2012).

[4] https://www.researchgate.net/publication/323959803_A_Group_Decision-Making_Method_for_Selecting_Cloud_Computing_Service_Model

[5] http://ijsrcseit.com/paper/CSEIT1831389.pdf

[6] http://www.globalscientificjournal.com/researchpaper/Immense-implemenatation-of-Cloud-Computing-on-distinct-pilot-projects-as-a-specimen-of-the-declineation-of-cost-effectiveness-to-manifest-as-Cloud-Computing-democracy-to-be-or-not-to-be.pdf

[7] https://www.fim.uni-passau.de/fileadmin/files/dekanat/Seminare/Reiser_Cloud_Computing.pdf