ISSN: 2277-9655
(I2OR), Publication Impact Factor: 3.785

IJESRT

INTERNATIONAL JOURNAL OF ENGINEERING SCIENCES & RESEARCH TECHNOLOGY

APPROACH TO THE OVERVIEW OF CLOUD COMPUTING, APPLICATION AND FUTURE SCOPE

PravinP.Bhad*, Jayant Y. Hande, Satish J.Tiwari

Assistant Professor, Mathematics Dept, Priyadarshini J.L. College of Engineering, Nagpur, India.
Assistant Professor ETC Dept, Priyadarshini J.L.College of Engineering, Nagpur, India.
Assistant Professor, Mathematics Dept, Priyadarshini College of Engineering, Nagpur, India..

ABSTRACT

Cloud computing has particular characteristics that distinguish it from classical resource and service provisioning environments. The paper aims to provide a means of understanding the model and exploring options available for complementing your technology and infrastructure needs. Also the Main purpose of this paper is to examine and analyze the Scope of cloud computing.

KEYWORDS: Cloud computing, cloud security Applications, encrypted file vectors.

INTRODUCTION

Cloud computing is a practical approach to experience direct cost benefits and it has the potential to transform a data centre from a capital-intensive set up to a variable priced environment. Cloud computing is the delivery of computing services over the Internet. Cloud services allow individuals and businesses to use software and hardware that are managed by third parties at remote locations. Examples of cloud services include online file storage, social networking sites, webmail, and online business applications. The cloud computing model allows access to information and computer resources from anywhere that a network connection is available. Cloud computing provides a shared pool of resources, including data storage space, networks, computer processing power, and specialized corporate and user applications.

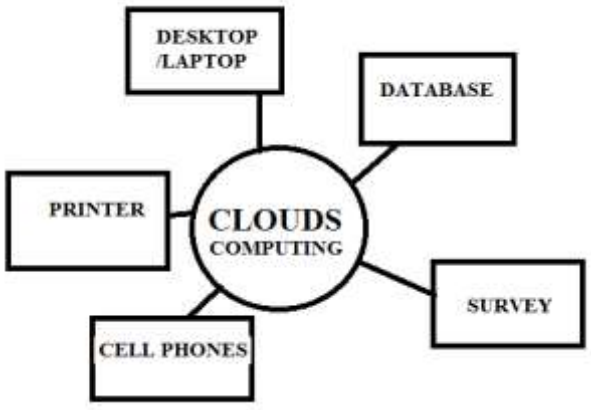

FIG. 1: BLOCK DIAGRAM OF CLOUD COMPUTING.

Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing that can be rapidly provisioned and released with minimal management effort or service provider interaction. This cloud model promotes availability and is composed of five essential characteristics, three service

models, and four deployment models. The cloud makes it possible for you to access your information from anywhere at any time. While a traditional computer setup requires you to be in the same location as your data storage device, the cloud takes away that step. The cloud removes the need for you to be in the same physical location as the hardware that stores your data. Your cloud provider can both own and house the hardware and software necessary to run your home or business applications. You need to have an internet connection to access the cloud i.e. if you want to look at a specific document you have housed in the cloud, you must first establish an internet connection either through a wireless or wired internet or a mobile broadband connection. The benefit is that the same document can be accessed from wherever you are with any device that can access the internet. The electronic devices namely be a desktop, laptop, tablet, or phone. This can also help by the business point, the cloud can work on documents, access software, and store data.

TYPES OF CLOUDS.

According to utility of the clouds, they have categorized in the four types described below. The fig. 2 shows the brief summery regarding the utility of the clouds.

- **Public Cloud:** It is basically internet based. Internet is used by the service providers to make the resources such as applications and storage available to the general public. However the public cloud is not the right fit for every organization.
- **Private clouds:** The main emphasis of Private cloud is that it is limited up to single company that provides flexibility, scalability, provisioning, automation and monitoring. The major drawback of the Private clouds is its cost, expensive with typically modest economies of scale.

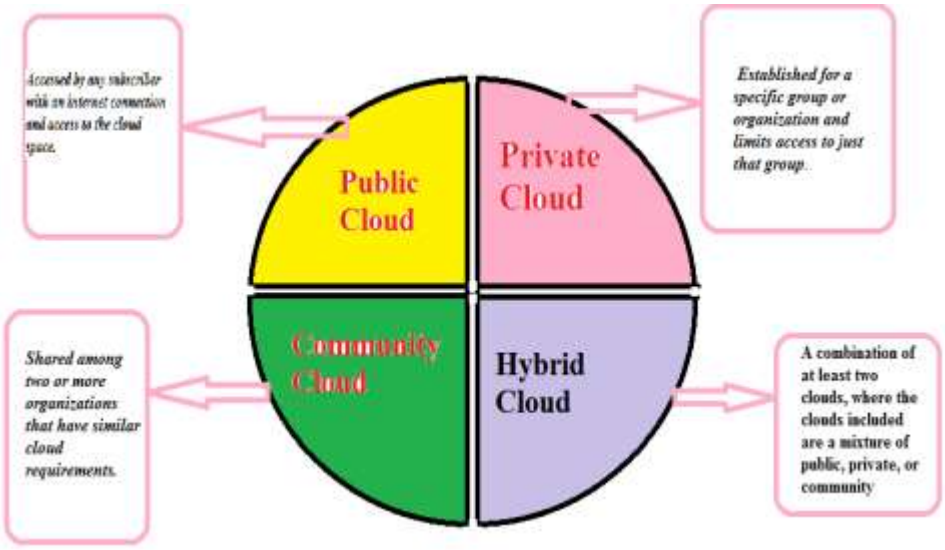

Fig 2. Types of Cloud Computing.

- **Community clouds:** They are a hybrid form of private clouds built and operated Specifically for a targeted group. These communities have similar cloud Requirements and their ultimate goal is to work together to achieve their business Objectives. The goal of community clouds is to have participating organizations Realize the benefits of a public cloud with the added level of privacy, security, and policy compliance usually associated with a private cloud.
- **Hybrid Cloud:** The companies can maintain control of an internally managed private cloud over the public cloud using Hybrid Cloud. Hybrid Clouds are a composition of two or more clouds that remain unique entities but are bound together offering the advantages of multiple deployment models.

SECURITY.

The mathematical model for the classical cloud computing is described as

$$\Omega_i = \sigma(P_{i,node}) \quad (1)$$

$$\epsilon_j = l \times \Omega_l \quad (2)$$

where $\sigma(P_{i,node})$ is short for beacon node's visit $i=1,2,3..n$ in *Eq. (1)* represents system application servers for more than two beacon nodes.

Ω_l donates chunk file matrices , ϵ_{li} indicates chunk files matrices for data centre of system. l_i is files itself, files l_i in system could be shown as $l_i = L_1(f_i)+L_2(f_i)+L_3(f_i)+....+L_n(f_i)$ which means file l has n chunks,

$$L_P \cap L_M = \emptyset \quad P \neq M \text{ ,P, M} \in 1,2,3,...,n.,$$

$$f(i)=f_1 U f_2 U....U\, fn \text{ and } f_i \cap f_j = \emptyset$$

The data security of cloud computing can be enhanced, by providing a Data Security Model called C_2DSM for more than two clients. It can be described as follows:

$$\Omega_{l,1} = \sigma_1(P_i) \quad (3)$$

$$\Omega_l = £ \times \Omega_{l,1} \quad (4)$$

$$\epsilon_j = \eta(l) \times \Omega_l \quad (5)$$

Where $\sigma_1(P_{i,node})$: shortest authentic visit to $P_{i\ node}$; $\Omega_{l,1}$: private protect model of file distributed matrices; η: resolve private matrix; η(l) encrypted file l block by block, get the encrypted file vectors.

The main reason behind the popularity of the clouds is all about its security

- The benefit of cloud computing is personal information may be better protected in the cloud.
- It may improve efforts to build privacy protection into technology from the start and the use of better security mechanisms.
- Cloud computing will enable more flexible IT acquisition and improvements, which may permit adjustments to procedures based on the sensitivity of the data.
- Widespread use of the cloud may also encourage open standards for cloud computing that will establish baseline data security features common across different services and providers.
- Cloud computing may also allow for better audit trails. One can never lose information in the cloud.

There are numerous security issues for cloud computing as it encompasses many technologies including networks, databases, operating systems, virtualization, resource scheduling, transaction management, load balancing, concurrency control and memory management. Therefore, security issues for many of these systems and technologies are applicable to cloud computing.

RELIABILITY

Cloud computing is reliable due to following reasons.

- A cloud should be able to continue to run in the presence of hardware and software faults.
- Google has developed an approach that works well using commodity hardware and their own software.
- For security concerns, the consumers if they are not well aware with the type and particulars of the products or services they are to procure or to use in a cloud environment this is also related to the cloud providers' identity and reliability.

SCOPE

The scope of areas and are

- Data centres trying to maintain high scalability and increase availability,
- Web server farms automating and stabilising their servers, respectively the user's website.

ADVANTAGE

Following are the advantages of the cloud computing.

- In the cloud computing to documents sharing is directly proportional to better collaboration. Hence it is an important advantage of cloud computing so that multiple users can collaborate easily on documents and projects.
- Using cloud computing you may be followed transformations to devices like mobile, computers, applications and documents through the cloud. Move to a portable device, and your applications and documents are still available.

CONCLUSION

The cloud provides many options for all regular user as well as large and small scale businesses. It provides the open access to a broader range of uses and increases, the ease of use by giving access through any internet connection.

REFERENCES

1. Chen Jinyin, Yang Dongyong ,Data Security Strategy Based on Artificial Immune Algorithm for Cloud Computing. Appl. Math. Inf. Sci. 7, No. 1L, 149-153 (2013)
2. Ghemawat S, Gobioff H, Leung S. The Google filesystem. Proceedings ACM Symposium on Operating Systems Principles. 2003 October.
3. Dean J and Ghemaway S. MapReduce: Simplified data processing on large clusters. Proceedings Operating Systems Design and Implementation. 2004 December.
4. Dean J and Ghemaway S. MapReduce: Simplified data processing on large clusters. Communications of the ACM. 2008 January; 51(1).
5. Chang F, Dean J, Ghemawat S, Hsieh WC, Wallach DA, Burrows M, Chandra T, Fikes A, Gruber RE. Bigtable: A distributed storage system for structured data. ACM Trans. on Computer Systems. 2008 June; 26(2).
6. Jansen, Wayne & Grance, Timothy. Guidelines on Security and Privacy in Public Cloud Computing. National Institute of Standards and Technology, 2011.
7. Barroso LA, Dean J, Hölzle U. Web search for a planet: the Google cluster architecture.IEEE Micro. 2003 March-April; 23(2).

AUTHOR BIBLIOGRAPHY

	**Prof. P. P. Bhad** He is assistant professor in Priyadarshini J.L.CollegeEngineering, Nagpur (M.S.). He Completed his M.Sc. M.Phil. in Mathematics. He has total 9 Years of teaching experience.
	**Prof.J.Y.Hande** He is assistant professor in Priyadarshini J.L.CollegeEngineering, Nagpur (M.S.). He Completed his M.Tech in Electronics Engineering. He has 3 Years of Industrial experience in Telecom sector and 7 Years of teaching experience in above mensioned college.
	**Prof. S. J. Tiwari** He is assistant professor in Priyadarshini CollegeEngineering, Nagpur (M.S.). He Completed his M.Sc. M.Phil. in Mathematics. He has total 9 Years of teaching experience.