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Cloud Computing: A new era

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Abstract: *Cloud Computing is one of the new standard Information Technology (IT), It allows the users to access the hardware, software and data from the cloud server. The Cloud computing provides many services to the users. Now the upcoming days, access control and security are the most two critical problems in cloud computing. Access Control defined as a procedure by users that can access the data from cloud server. When the time of accessing data, many problems may occur. Such as data security, data loss, accessing time, data redundancy and overhead, etc. The several accesses can control the models that already developed based on the attribute-based encryption. In this paper, all the issues in cloud computing discussed. Finally, the future work directs the identification and problems in cloud computing.*
Keyword*: Cloud Service Provider, Data Owner, Encryption, Access Control.*

I. Introduction

Cloud computing is important Information Technology in the world. It is highly scalable and virtualized resources shared by the users. They do not need any background knowledge for services. Cloud is a storage space; it allows the data transmission over the network.

The data's emerged from the cloud is converted, translated and encapsulated in various ways. It is a emerging area distributed computing, it facilitates organizations by the information making technology in a service available commodity. The concept of cloud computing offers in IT sector to increase the capacity of Information Technology and add on flu capabilities without they investing the new infrastructure, licensing the new software. There is no setup, configuration and to manage the large physical installation of networks and hardware. This technology provides more efficient in computing the centralized storage, processing, memory and bandwidth. In a cloud computing, Big data concept provides the big data's to provide and analyze with analytical data solutions.

II. Cloud Characteristics

Some features commonly associated with cloud. A customer, an individual lab, association or a consortium participant.

Resource Outsourcing: Consumer is providing own hardware, the cloud vendor that assumes the responsibility for the hardware achievement and maintenance.

Utility Computing: The consumer requests the additional resources in the need and similarly it releases the resources when they need. Different cloud offers the different sort of resources. eg., Storage, Processing, Management Software or the application services.

Large Number of Machine: Clouds typically constructed using the large number of low-price machines. As a result, the cloud vendor is easily more and add capacity level that can be rapidly replace machines that fails and compared with machines in multiple laboratories. Generally speaking, machines are homogeneous and it is possible in both terms of location and configuration.

Automated resource management:
Variety of configuration task incorporates the feature task that typically handled by the system administrator.

Automated resource management: Feature incorporates the variety of configuration tasks that typically handled by system administrator. For example, many clouds offer the archival and automated backup. The cloud moves the data or computation to improve the responsiveness. Clouds offers the malicious activities.
Parallel computing: Map/Reduce and Hadoop Frameworks for expressing and easily executing the computation. Figure 1 shows the Cloud computing services.

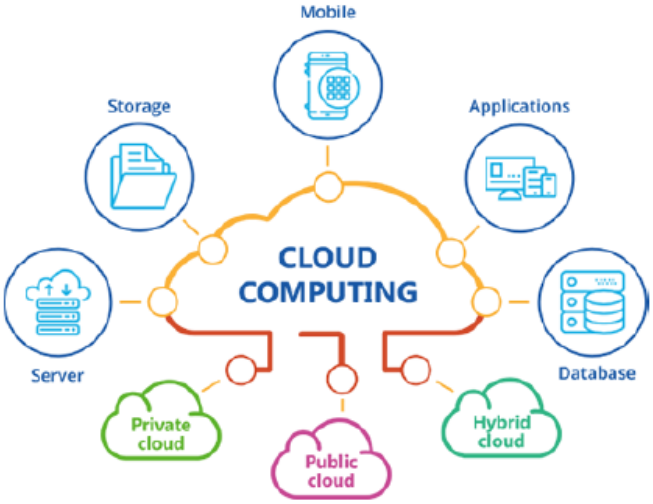
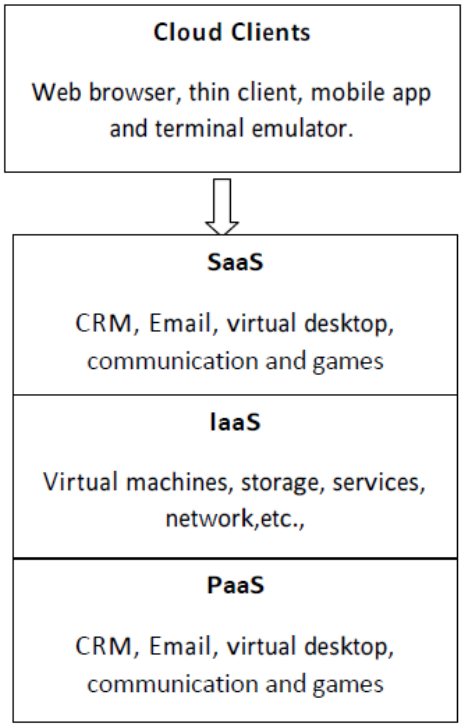


Figure 1: Cloud Computing services



III. CLOUD DEPLOYMENT MODELS:

Deployment models determine by the cloud services that were managed. Clouds may have the access to limited resources or they access the large quantities of resources. This depends on the distribution that selected.
The Following deployment models are:

Private Cloud:
Private clouds are implemented with the firewall organization and it is controlled by the IT department. Private cloud is known as corporate cloud or internal cloud. The private cloud ensures the security of organization in data and the issues related to the compliance regulatory.

Public cloud: The service provider makes the resource that available in a general connected public via internet. The benefits of using the public cloud service is economical and easy. It covers the hardware, application, bandwidth and storage space.

Community cloud:
As seen, community clouds are semiprivate in nature and have elements of both private and public clouds. Shared cloud resources include many groups with common objectives or demands. The organization itself or any other entity may be in charge of managing it.

Hybrid cloud:
As depicted in a hybrid cloud is a blend of public, private, or community clouds that serves the organization's needs specifically. It makes data and applications possible and portability. Services that are more scalable, affordable, secure, and versatile are provided via hybrid clouds.

IV. MAJOR SERVICE PROVIDER'S OF CLOUD COMPUTING

Almost, in all the IT industries cloud computing services are provided. But in few companies, major service providers they are making the market in hold. The major service providers are:
-Amazon Elastic Compute Cloud-Amazon's EC2: It s a web service, that enables to increase or decrease the user's computing capacity in cloud. It is reliable and it offers the complete control of environment in their instances. It collaborates with Amazon s3.
-Google 101-Network: It is made up of the millions of servers that have a large amount of data and it enables the fast search in world wide web.

-ISM's Cloud Burst: It's a cloud computing solution from IBM for the everyday users and it designs to provide the effective cost and monitoring resources and also a service cloud availability.

-Microsoft Azure: It is also a Cloud computing platform, that let a user build, managing services and deploy the applications through the Microsoft data centers. Figure 2 shows the Cloud Infrastructure.

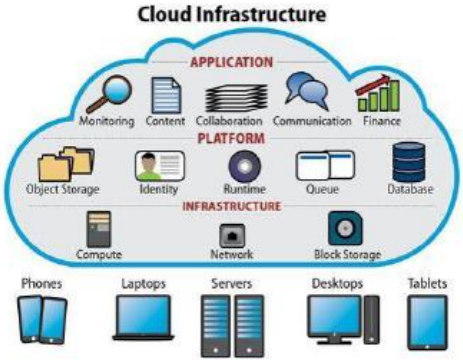


Figure 2: Cloud Infrastructure

4. Advantages and Disadvantages:

Cloud computing, an emerging technology:

It is also have advantages and disadvantages.

Advantages:

- Low cost
- Centralized Data
- Highly Automated
- Flexibility
- Large Storage space
- Fast Access
- Increased
- Reliability and scalability

Disadvantages:

- Redundancy
- Performance variation
- Recovery
- privacy

V. Challenges of Cloud Computing

Organizations are increasingly aware of the business value that cloud computing brings and are taking steps towards transition from the traditional solution to the cloud solution. A smooth transition need a thorough understanding of the benefits as well as challenges involved. The adoption of cloud computing is not free from challenges. Some of the most important issues are as follows.

The main challenges of cloud computing is to handle the privacy and security concern in business. While using a public cloud, sensitive corporate data is stored outside the company firewall, which poses a severe security risk. Even if only one site in a cloud architecture is targeted, different assaults like hacking would impact numerous clients. By implementing security software, encrypted file systems, data loss software, and purchasing security devices to monitor anomalous behavior across servers, these dangers can be reduced. A. Service Provision and Invoicing Due to the on-demand nature of the services, it is challenging to estimate the expenses associated. Budgeting and expense assessment will be quite challenging unless the provider can supply some useful and comparative standards. The provider's service-level agreements are insufficient to ensure scalability and availability. Without a solid service quality assurance, businesses will be hesitant to migrate to the cloud. Portability and Interoperability There shouldn't be a lock-in period and businesses should have the flexibility to migrate in and out of the cloud as well as transfer providers whenever they wish. Services for cloud computing should be able to seamlessly connect with on-premise IT. Accessibility support by cloud providers continues to cause frequent disruptions. It is crucial to keep an eye on the service being offered utilizing internal or external tools. It is crucial to establish plans to monitor how these services are used, performed, robust, and how dependent they are on the business.

VI Conclusion

The biggest technological change in the IT sector is cloud computing. It is a technical revolution that has altered how IT services are created, deployed, maintained, and used. Consumers pay for on-demand services and receive them. All of the major players in the IT sector, including Amazon, Google, IBM, Microsoft, and others, are currently providing a variety of cloud computing services. This method boosts profitability by effectively using the available resources. If the security issue is fixed, India would soon rank among the top nations in the world offering cloud-based services to the general public for e-governance services. In this paper, the cloud computing new technology and efficiency has been discussed.

References:

[1] Namasudra, S. (2018). Cloud computing: A new era. *Journal of Fundamental and Applied Sciences*, *10*(2).

[2] Delfin, S., Sivasanker, N. P., Raj, N., & Anand, A. (2019, March). Fog computing: A new era of cloud computing. In *2019 3rd International Conference on Computing Methodologies and Communication (ICCMC)* (pp. 1106-1111). IEEE.

[3] Panigrahi, R., Ghose, M., & Pramanik, M. (2013). Cloud Computing: A new Era of Computing in the Field of Information

Management. International Journal of Computer Science Engineering, 2(5).
[4] Verma, R. K., Dutta, S., Chaulya, S. K., Singh, A. K., & Prasad, G. M. (2013). Cloud Computing: A New Era in IT industry. International Journal of Computer Technology and Electronics Engineering, 3(2), 18-28.
[5] Srinivasan, A., Quadir, M. A., & Vijayakumar, V. (2015). Era of cloud computing: A new insight to hybrid cloud. Procedia Computer Science, 50, 42-51.
[6] Kaur, G., Kaur, R., & Rani, S. (2015). Cloud computing-a new trend in it era. International Journal of Science, Technology and Management, 1-6.
[7] Bento, A. L., & Bento, R. E. G. I. N. A. (2011). Cloud computing: A new phase in information technology management. Journal of Information Technology Management, 22(1), 39-46.
[8] Riahi, G. (2015). E-learning systems based on cloud computing: A review. Procedia Computer Science, 62, 352-359.
[9] Zhou, M., Zhang, R., Xie, W., Qian, W., & Zhou, A. (2010, November). Security and privacy in cloud computing: A survey. In 2010 Sixth International Conference on Semantics, Knowledge and Grids (pp. 105-112). IEEE.
[10] Pham, Q. V., Ruby, R., Fang, F., Nguyen, D. C., Yang, Z., Le, M., ... & Hwang, W. J. (2022). Aerial computing: A new computing paradigm, applications, and challenges. IEEE Internet of Things Journal, 9(11), 8339-8363.