

INTRODUCTION TO CLOUD COMPUTING ISSUES: INFRASTRUCTURE, AUTHENTICATION, SECURITY

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Abstract: *Cloud computing has develop basis for computing of future. The global infrastructure of computing is growing with fast speed in the field of cloud based computing architecture. It is necessary to deploy the cloud computing in different and various areas to take numerous benefits of cloud based computing. Services based Cloud and providers that provide the cloud based service are being involved which has appeared in a new trend of business based cloud computing technology. With the beginning of various services based on cloud , the very sensitive information of different things are normally stored in remote servers and in such type of locations, there is possibility of unwanted guests entry or stealing of information where the information is stored by the cloud servers. The flexibility and benefits offered by cloud computing will be lesser if security is not consistent or security is not robust. This paper describes security issues related to cloud computing and a review on the cloud based computing concepts and infrastructure.*

Key Words: *Cloud Security, Cloud Servers, Computing , Unwanted Guests.*

1. INTRODUCTION:

With the latest developments in the area of could base computing have completely transformed the way of computing and the resources of computing. In the environment of cloud computing, the various resources are frequently present in a network of someone else and accessed by the cloud based users remotely. Processing is completed remotely. The data need to be transmitted from a person to server or the cloud based infrastructure for processing and the output is returned when required processing finished. Security is an important aspect of safer computing. In today's world it is easy for unwanted guests to enter into any private computer by using different types of hacking. There are so many issues related to the cloud computing due to its wide nature and approach of computing. From a very long period, Security has been an important issue in cloud based computing. Robustness and secured computing are two main characteristics of the cloud based infrastructure. So, it is necessary to recognize and understand the security related aspects of cloud computing. Cloud is can be divided into different categories as public cloud, private cloud , hybrid cloud and public cloud. The research in this paper considers only public cloud because public cloud satisfies all the characteristics of another type of clouds. The study of research related to cloud computing presented in this paper is organized with the objective of identifying and analyzing the security issues related to cloud computing.

2. INFRASTRUCTURE:

Cloud computing is a type of grid where computing is done by using the network of someone else, where external parties have ownership of resources including software and hardware. Cloud computing includes two main things, these are to the infrastructure in cloud on rent basis, or to rent particular service from cloud. Figure-1 shows the cloud users and Cloud service provider in a cloud based computing architecture

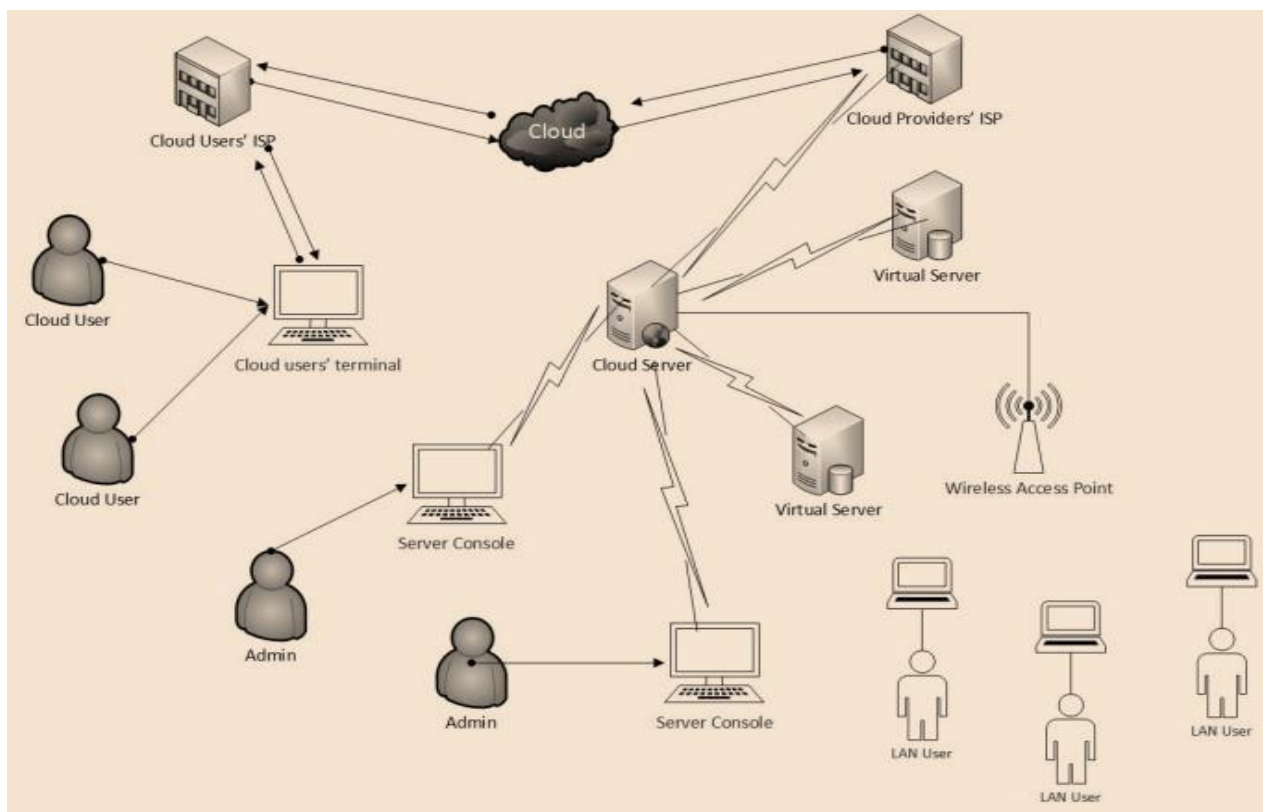


Figure 1: Cloud Architecture

The cloud hierarchy is shown in figure-2 on which cloud is based-

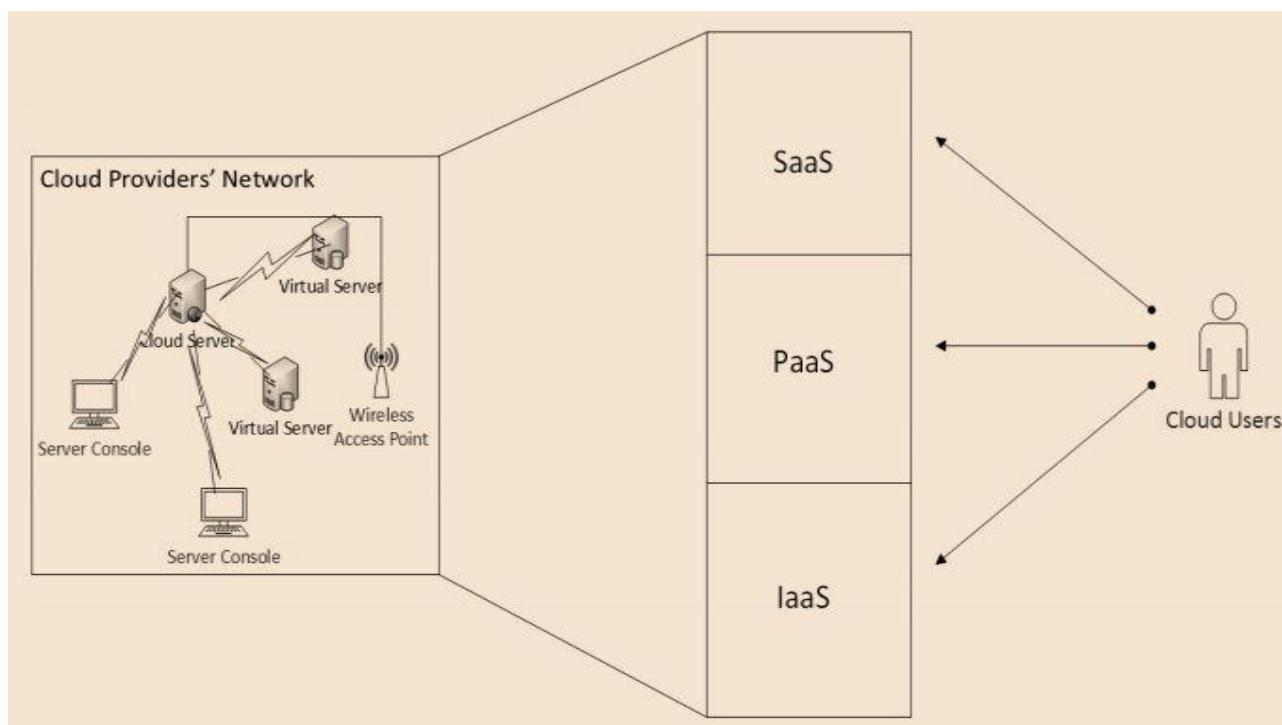


Figure-2: Cloud Hierarchy

3. AUTHENTICATION:

Security is the most important part of any type of computing. Many users of cloud computing stores their data on the client end as well as in cloud based servers in cloud based computing environment. In such kind of environment, the process of identification of cloud users, users management and authentication of the cloud users ,all of these things are very important and vital in cloud based computing. The process of authentication for a cloud based infrastructure is shown in the figure 3.

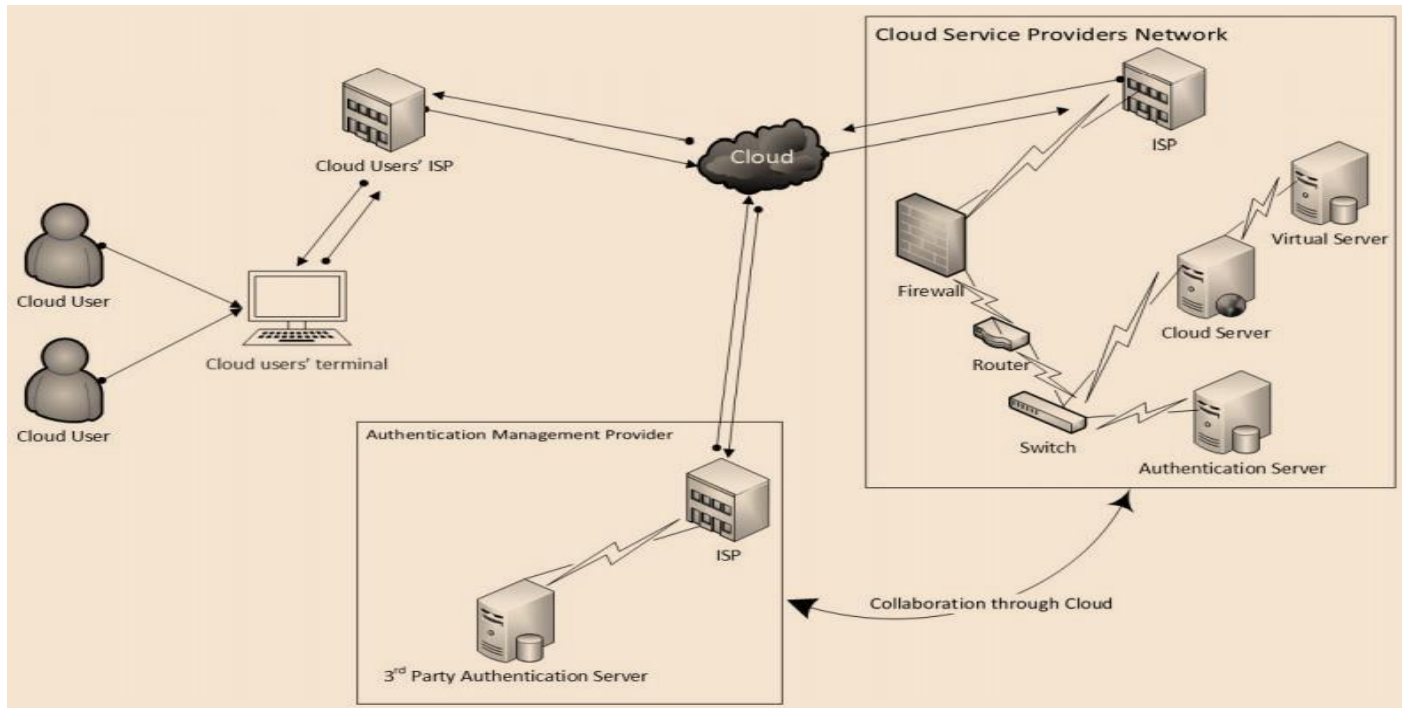


Figure-3: Authentication Process in the Cloud

4. SECURITY ISSUES:

There are many challenges in the area of cloud computing and security is one of them. Increasing the level of security is required for improving the quality of cloud based services. Location of data is an important factor in the security of cloud based computing. Transparency of the data location provides the flexibility for cloud based computing, but this is also a threat related to security. For cloud users, to maintain their personal data is a major issue related to cloud computing security. Technical security and policies for cloud users play a vital role in the cloud security. To build trust and establish it for customers who want to use cloud services, is another issue related to the cloud based computing. Security attacks are another issue related to the cloud security. It includes various types of attacks like phishing, sniffing, eavesdropping, man-in-the-middle attack and many other types of attacks. These types of attacks are major issues related to cloud computing security. Authentication of the cloud users using some standard encryption can help to provide the safer cloud based computing. Software tools used in the cloud based environment add loopholes in the security. There are two major concerns, these are privacy of cloud users and security of cloud based computing.

5. ACKNOWLEDGEMENT:

During this research paper, I have put my best efforts for completing this research paper. I hope that this research paper will be helpful for the future authors who want to do further research related to cloud computing.

6. CONCLUSION:

The scope of Cloud computing is very huge. Cloud based computing provides lots of benefits but there are many security related issues in cloud based computing. Security of the cloud based computing is a major concern that is an unavoidable requirement. Various secured models have been made for cloud based computing but there is still ongoing research related to security issues and investigation to make the cloud based models more secure. In the future, cloud based computing models will be more consistent, secure, integrated and robust.

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