



# Review Paper on Virtualization of Cloud Computing

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**Abstract:** Virtualization is used to make simulated environment through a physical hardware system. The software that controls cloud technology is virtualization, while cloud computing is a digital facility. Virtualization and cloud computing knowledges share a exclusive relationship and often work together. The virtualization process in cloud computing is where a name is allotted to the physical storage and is available on demand. A single dedicated hardware can do a great job in virtualization. There is a host machine and a visitor machine.

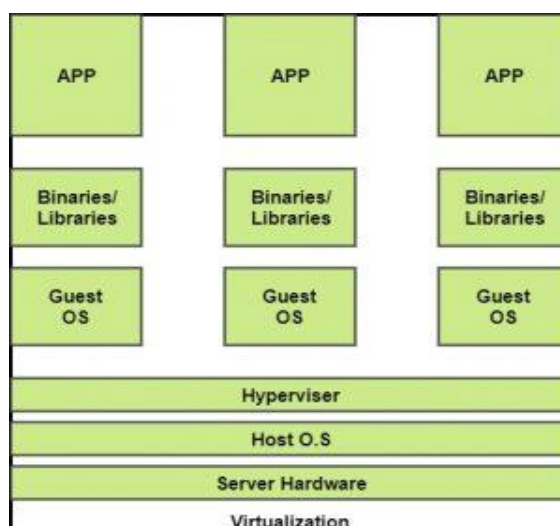
**Keywords:** Virtualization cloud computing host.

## I. INTRODUCTION

Virtualization of cloud computing primarily stems from the need to split up resources to make them more efficient and add security layers to silos of computing power. For instance, you can segment server capacities into small parts to allow for the distribution of the server's capabilities among several environments and users. Virtualization of Cloud Computing is a broad term that refers to the abstraction of computer resources. Essentially, it creates a virtual resource successively on a layer abstract from physical hardware. Cloud computing is one of the more common use cases. Virtualization Hides the physical characteristics of computing resources from there users, be they application, or end users. This includes making a single physical resource. Virtualization allows a computing environment to simultaneously run several independent systems also called virtual machines. These virtual machines (VMs) share the same physical IT infrastructure and are accomplished and coordinated by an extra software interface named hypervisor.

## II. ARCHITECTURE

The architecture in virtualization is defined as a model that describe virtualization of cloud computing conceptually.





### III. VIRTUALIZATION

Virtualization can be defined as a procedure that enables the manufacture of virtual version of desktop, operating system, network resources, or server. In other word, Virtualization is a technique, which allows to share single physical instance of an application or resource among multiple organizations or tenant's customer. It does so by assigning a logical name to a physical resource and providing a pointer to that physical resource on demand. The invention of virtualization was intated during the era of mainframe practice, and as time evolved with progression in new-age knowledges, virtualization was achieved with the mean of specific software. The technology that works behind virtualization is known as a virtual machine monitor or virtual manager which separates compute environments from the actual physical infrastructure. There are mainly four types of virtualization hardware virtualization, operating system virtualization, server virtualization, storage virtualization.

### IV. TYPES OF VIRTUALIZAION OF CLOUD COMPUTING

#### I. Operating system virtualization:

In operating system virtualization of cloud computing, the virtual machine software installs in the operating system of host rather than directly on the hardware system.

#### II. Hardware virtualization:

Hardware virtualization of cloud computing used in server platform as it is flexible to use virtual machine rather than physical machines.

#### III. Server virtualization:

In server virtualization of cloud computing, the software directly installs on the server system and use for a single physical server can divide into many servers can divide into many serers on the request basis and stability the load.

#### IV. Storage virtualization:

In storage virtualization of cloud computing, a grouping is done of physical storage which is from multiple network storage devices this is done so it looks like a single storage device.

### V. BENEFITS OF VIRTUALIZATION OF CLOUD COMPUTING

Virtualization of cloud computing has numerous benefits lets discuss them one by one:

#### I. Security:

During the procedure of virtualization security is one of the significant concerns. The security can be providing with the help of firewalls, which will help to prevent illegal access and will keep the data intimate.

#### II. Flexible operations:

With the help of virtualization of cloud computing technical problems can solve in physical systems. It removes the problem of recovering the data from stopped or corrupted devices and hence saves time.

#### III. Economical:

Virtualization of cloud computing, save the cost for a physical system such as hardware and servers. It stores all the data in the virtual server, which are quite economical.

#### IV. Removes the risk of system disaster:

While performing virtually task there are chances that the system might crash down at the wrong time. this failure can reason damage to the company but the virtualizations help you to perform the same task in multiple devices at the similar time.

#### V. Flexible transfer of data:

The data can allocation to the virtual server and retrieve anytime. The customers or cloud earner don't have to waste time discovery out hard drives to find data. With the help of virtualization, it will very easy to detect the required data and handover them to the allotted authorities.

### VI. ROLE OF VIRTUALIZATION IN CLOUD COMPUTING

In cloud computing technology virtualization perform very critical role. Characteristically, users share the data in the clouds such as applications but with virtualization operators share the organization.

The primary purpose of virtualization technology is to spring typical versions of applications to cloud users; if the next version of that application is released, the cloud earner must give those users the freshest version, which is officially feasible because it is classier.



Cloud earner employ virtualization create situations that can fulfill each user's unique needs. Cloud providers can spin up more virtual instances to meet request as more users come in. Virtualization is an effective way of managing computing resources, maximizing utilization and minimizing interruption.

## VII. CLOUD COMPUTING AND VIRTUALIZATION

Virtualization is a technique of have to separate a service from the underlying physical delivery of that service. It is the procedure of creating a virtual version of something like mainframe hardware. In computing, virtualization refers to the act of crating computing resources that have no physical presence, that is, they are virtual. These virtual resources are essentially pieces of software that act like their concrete counterparts. It includes using particular software to create a virtual or software created version of a computing resource rather than the actual version of the same resource. with the help of virtualization, multiple operating system and applications can run on same machine and its same hardware at the same time, increasing the flexibility of hardware [3].

## VIII. CLOUD COMPUTING

A cloud mentions to a distinct IT environment that is designed for the purpose of remotely provisioning scalable and measured IT resources. The term originated as a metaphor for the internet which is, in essence, a network of network providing remote access to a set of decentralized IT resources. Cloud computing can be both public cloud services provide their services over the internet for a fee . private cloud services, on the other hand, only provide service to a certain number of people. These services are a scheme of networks that source hosted service. there is also a hybrid option, which combines basics of both the public and private facilities. Cloud computing taken all the heavy lifting involved in crunching and processing data away from the device you carry around are sit and work at. It similarly transfers all of that work to huge computer groups far away in cyberspace.

## IX. DEPLOYMENT MODELS

There are several forms of clouds, each of which is changed from the other. Public clouds suggestion their facilities on servers and storage on the internet. These are worked by third-party companies, who handle and control all the hardware, software, and control all the hardware, software, and the general infrastructure. hybrid cloud is, as the name indicates, a mixture of both public and private services. This form of model allows the user extra flexibility and benefits optimize the operator's infrastructure and security.

## X.CHARACTERISTIS OF CLOUD COMPUTING

There are basically five types of characteristics of cloud computing.

1. On -demand self-services
2. Broad network access
3. Rapid elasticity
4. Resource pooling
5. Measured service

1. On -demand self-services:

the cloud computing services does not require any human managers, user themselves are able to facility, monitor and succeed computing resources as wanted.

2.Broad network access:

The computing service are generally provided over standard networks and heterogeneous devices.

3.Rapid elasticity:

The computing service should have IT properties that are clever to scale out and in quickly and on as needed basis. Whenever the user requires services, it is provided to him and it is scale out as soon as its must gets over.

4.Resource pooling:

The IT resource (e.g., network, servers, storage, applications, and services) present are shared across multiple application and occupant in an uncommitted manner.

5.Measured service:



The resources utilization is tracked for each application and occupant it will provide both the user and the resource provider with an account of what has been used. This is done for various reasons like monitoring promoting and effective use of resource.

## XI. CONCLUSION

Virtualization of cloud computing is a great technique for any organization that wants to build its cloud security . definitely, its implementation is easy but it is not a cakewalk also. The organizations essential to strategize, appreciate and , be ready before the implementation . It is becoming more of a need than a choice for any business that aims to establish cloud security thus creating virtual resources is the new go-to choice for businesses The virtualization is a part of cloud computing where manual management is done for interacting with a hypervisor virtualization essentially means running numerous operating systems on a single machine while sharing all hardware resources.

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