VIRTUALIZATION

Virtualization is a process of running a virtual instance of a computer system in a layer abstracted from the actual hardware. Most commonly, it refers to running multiple operating systems on a computer system simultaneously. To the application running on top of the virtualized machine, it can appear as if they are on their own dedicated machine, where the operating system, libraries and other programs are unique to the guest virtualized system and unconnected to the host operating system which sits below it.

SCALABILITY-

Virtual machine configuration limits its scalability

QUICK SETUP-

It is very simple to setup virtual environment

FELXIBILITY-

Proper authentication is required before accessing the virtual machine

SERVICE TYPE-

Software as a service (SaaS)

DEDICATED HARDWARE-

Dedicated hardware required for multiple virtual machines

INTEGRATION-

Virtual integration allows expansion of new machines within the same infrastructure

DEPENDENCY-

Multiple operating system can be installed on single server/computer

ACCESSIBILITY-

Proper permissions are required for accessing from outside the network

DISASTER RECOVERY-

Single machine failure can bring down multiple virtual machine

TYPES-

Hardware virtualization and application virtualization

The machine on which the virtual machine is created is known as host machine and virtual machine is referred as a guest machine. This virtual machine is managed by a software or firmware, which is known as hypervisor.

HYPERVISOR

A hypervisor is a program for creating and running virtual machines. Hypervisors have been split into two classes:

Type one or "bare metal" hypervisors that run guest virtual machines directly on a system's hardware, essentially behaving as an operating system.

LynxSecure, RTS Hypervisor, Oracle VM, Sun xVM Server VirtualLogic VLX are examples of Type 1 hypervisor.

Type two or "hosted" hypervisors behave more like traditional applications that can be started and stopped like a normal program. In modern systems, this split is less prevalent, particularly with systems like KVM. KVM , short for kernel-based virtual machine, is a part of linux kernel that can run virtual machines directly, although we can still use a system running KVM virtual machines as a normal computer itself.

Containers, KVM, Microsoft Hyper V, VMWare Fusion, Virtual Server 2005 R2, Windows Virtual PC and VMWare workstation 6.0 are examples of Type 2 hypervisor.