



Virtualization

What is Virtualization?

Virtualization

- Virtualization is the process of creating a software-based (or virtual) representation of something rather than a physical one.
- Virtualization can apply to applications, servers, storages, and networks.
- Virtualization is the single most effective way to reduce IT expenses while boosting efficiency and agility for all size businesses.

Type of Virtualization

- Server Virtualization
- Storage Virtualization
- Network Virtualization
- Application Virtualization

Server Virtualization

- Server Virtualization is the ability to run multiple operating systems on a single physical system and share the underlying hardware resources.
- It is the process by which one computer hosts the appearance of many computers.



Traditional Network



Virtualization Network



Traditional and Virtual Architecture



Traditional Architecture

Virtual Architecture



Key Properties of Virtual Machines

- Partitioning
- Isolation
- Encapsulation
- Hardware Independence

Why Virtualization is used

- Reduce the number of physical server
- Reduce power consumption
- Reduce servers maintenance and downtime
- Automatically protect applications from server failure
- Increase IT productivity, efficiency, agility and responsiveness.

What is Hypervisor?

- If virtualization is defined as enabling multiple operating systems to run on a single host computer, then the essential **component** in the virtualization stack is the hypervisor.
- This hypervisor, also called Virtual Machine Monitor (VMM), creates a virtual platform on the host computer, on top of which multiple guest operating systems are executed and monitored.
- Multiple operating systems, which are either multiple instances of the same operating system, or different operating systems, can share the hardware resources offered by the host.



Type of Hypervisor

• Type 1 (bare-metal hypervisor)

• Type 2 (hosted hypervisor)

Type 1 & Type 2 hypervisor





APP OS APP OS OS APP OS OS VMware Workstation or Fusion and others Win, Linux, or Mac OS

Type 1



• Type 1 (bare-metal hypervisor)

- a. VMware Vsphere
- b. Microsoft HyperV
- c. Xen server

• Type 2 (hosted hypervisor)

- a. Virtual Box
- b. KVM
- c. VMware Workstation

VMware Certifications

- Data Center Virtualization
- Network Virtualization
- Cloud Management and Automation
- Desktop and Mobility

DATA CENTER VIRTUALIZATION (DCV)







CLOUD MANAGEMENT AND AUTOMATION (CMA)





Thank You