

Introduction to Virtualization

What is Virtualization

- Today's x86 computer hardware was designed to run a single operating system and a single application, leaving most machines vastly underutilized.
- Virtualization lets you run multiple virtual machines on a single physical machine, with each virtual machine sharing the resources of that one physical computer across multiple environments.
- Different virtual machines can run different operating systems and multiple applications on the same physical computer.



Traditional Architecture



Virtual Architecture

Benefits of Virtualization

Improve Effectiveness and Reduce Costs	Increased Business Agility	Maximize Business Continuity
<ul style="list-style-type: none">• Maximize Asset Utilization• Reduced Power and cooling needs• Lower Capital and Operational expenditure• Lower Carbon footprint• Increased IT staff productivity• Reduced Software Licensing ,hardware management costs	<ul style="list-style-type: none">• Dynamically scale up or back• Rapid response to changing business needs• Faster provisioning of services and infrastructure	<ul style="list-style-type: none">• Optimize Availability• Application Isolation• Centralized Management• Simplify disaster recovery• Increase security

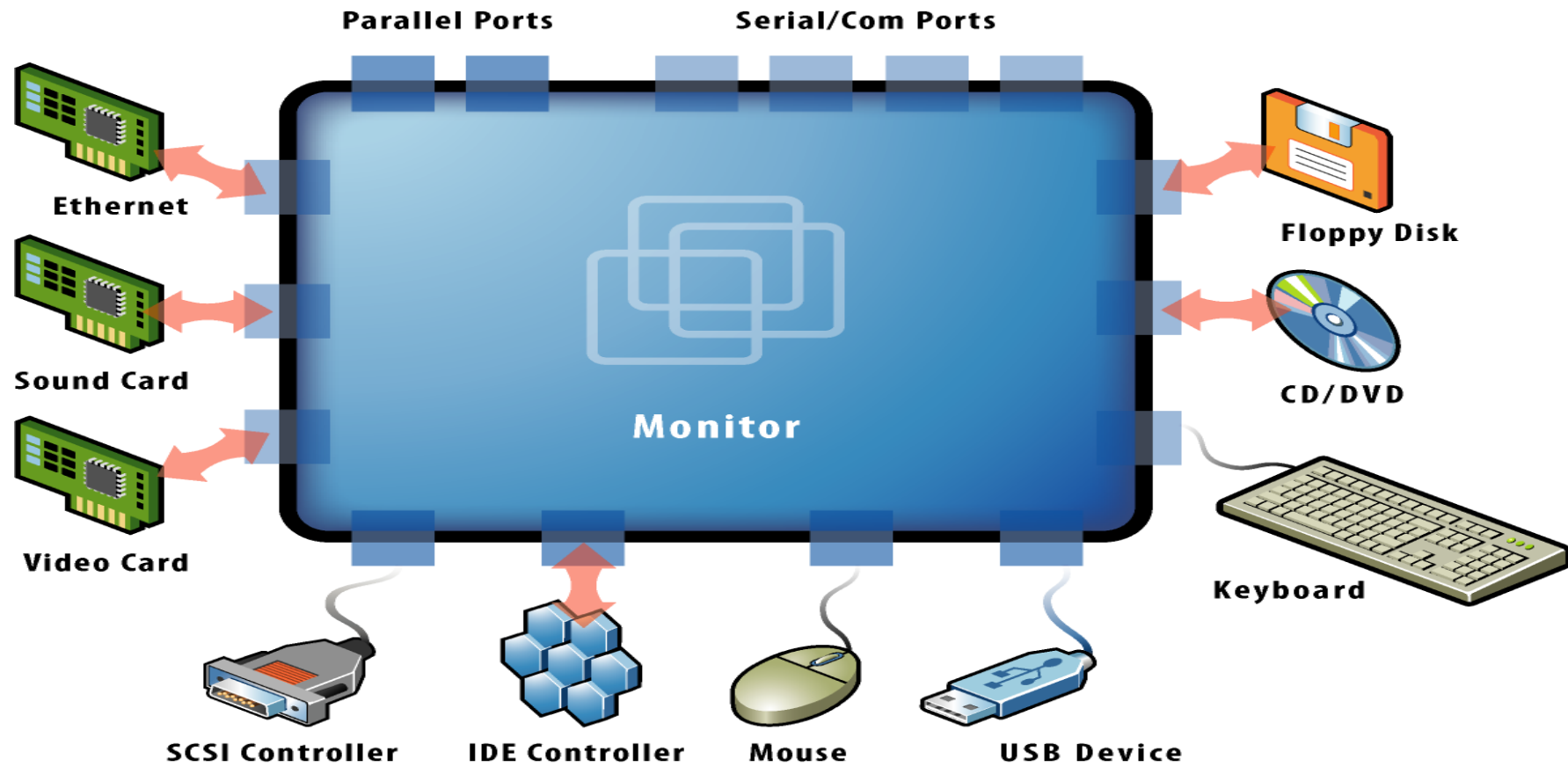
What is a Hypervisor

- A hypervisor is a software that allows multiple operating systems to share a single hardware host.
- Each operating system appears to have the host's processor, memory, and other resources all to itself.
- However, the hypervisor is actually controlling the host processor and resources, allocating what is needed to each operating system in turn and making sure that the guest operating systems (called virtual machines) cannot disrupt each other.

Who Are (Major) The Players?

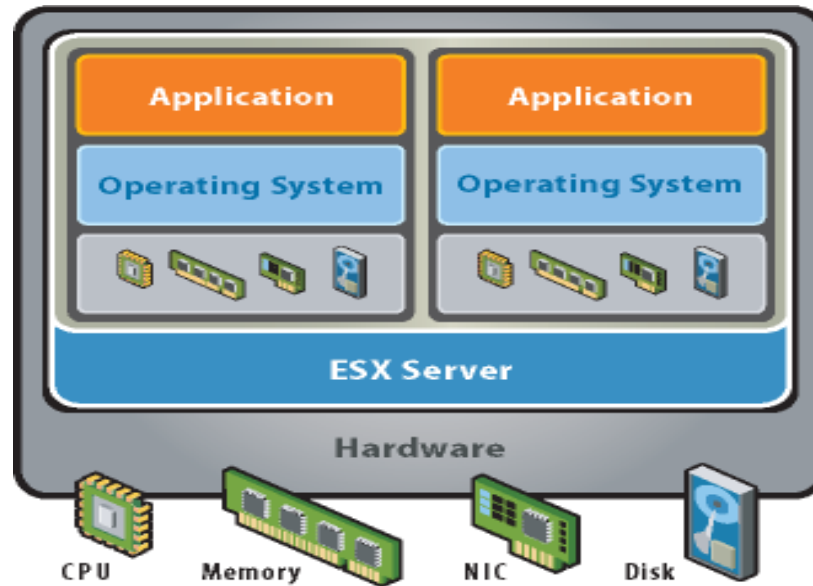


What is a Virtual Machine



Bare-Metal or Type 1 Hypervisors

- ESX & ESXi install right on the bare metal and therefore offers higher performance but runs on a narrower range of hardware.
- Used for server consolidation for Data Centers.
- High performance and scalability.
- Many advanced features for resource management, high availability and security.
- Centralized administration with vCenter Server.



Type -2 Hypervisor

- VMware Player is software that enables users to easily create and run virtual machines on Windows and Linux .VMware Player is free for personal non-commercial use.



- VMware Workstation provides a seamless way to access all of the virtual machines you need, regardless of where they are running. It is not free and used for commercial use.

