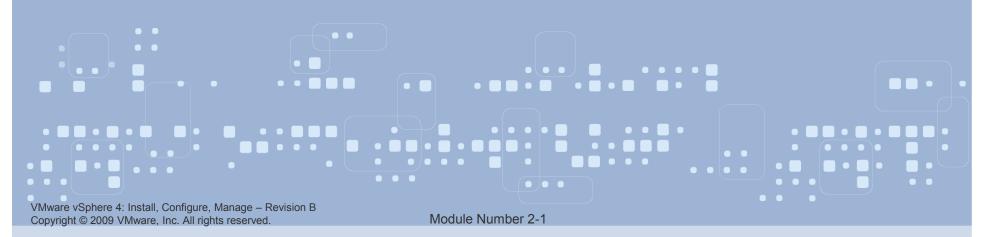


Introduction to VMware Virtualization

Module 2



You Are Here

vSphere Environment

Introduction to VMware Virtualization

Configuring VMware ESX and ESXi

Installing and Using VMware vCenter Server

Networking

Storage

Virtual Machines

Operations

Access Control

Resource Monitoring

Scalability

High Availability and Data Protection

Configuration Management

Installing VMware ESX and ESXi



Importance

VMware® vSphere™ is based on many components that, as a vSphere administrator, you should be familiar with. This module describes the basic concept of virtualization, the types of virtualization available from VMware, and the virtual machine. This module then shows you the fundamental components of vSphere and provides some examples of how vSphere can be used in your environment.



Lesson Objectives

- Understand the concept of virtualization
- Identify the benefits of using a virtual machine
- Describe vSphere components
- Describe scenarios for using virtualization



What Is Virtualization?

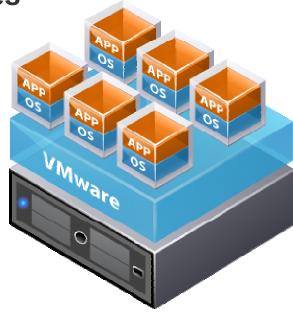
Virtualization is a technology that transforms hardware into software.

Virtualization allows you to run multiple operating systems as virtual machines on a single computer.

Each copy of an operating system is installed into a virtual machine.

Virtualization is not:

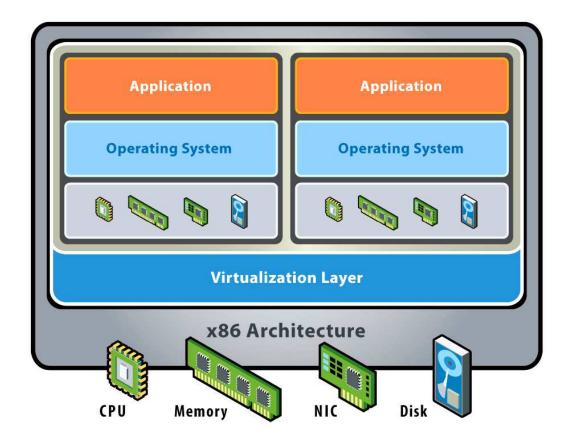
- Simulation
- > Emulation





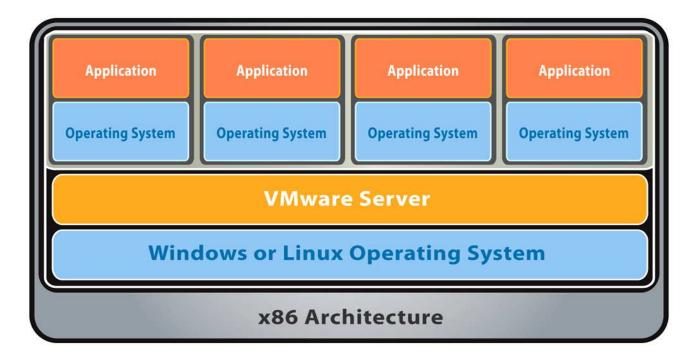
How Does Virtualization Work?

A virtualization layer is installed. It uses either a hosted or hypervisor architecture.





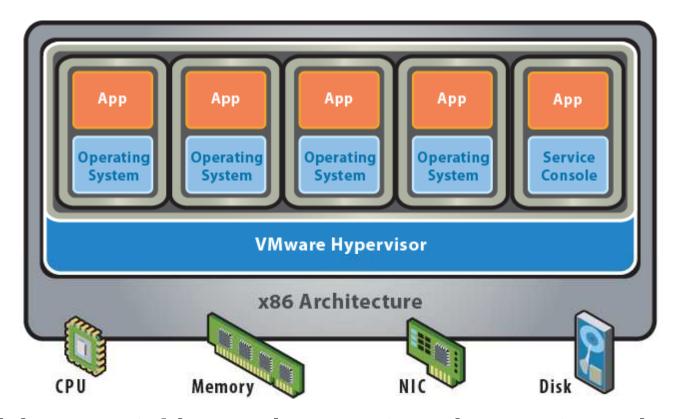
Host Operating System–Based Virtualization



A host-based virtualization system requires an operating system (such as Windows or Linux) to be installed on the computer.



Virtualization Using a Bare-Metal Hypervisor



A bare-metal hypervisor system does not require an operating system. The hypervisor *is* the operating system.

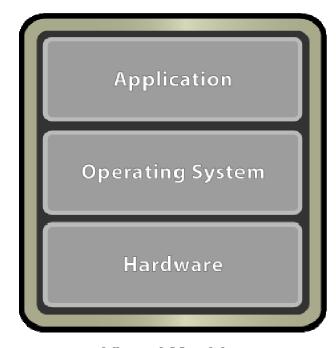


What Is a Virtual Machine?

From the user's perspective, it is a software platform that, like a physical computer, runs an operating system and applications.

From the hypervisor's perspective, it is a discrete set of files. These are the main files:

- Configuration file
- Virtual disk file
- NVRAM settings file
- Log file



Virtual Machine



Why Use Virtual Machines?

Physical Machine

Difficult to move or copy

Bound to a specific set of hardware components

Often has short life cycle

Requires personal contact to upgrade hardware



Virtual Machine

Easy to move and copy

- Encapsulated into files
- Independent of physical hardware

Easy to manage

Isolated from other virtual machines running on the same physical hardware

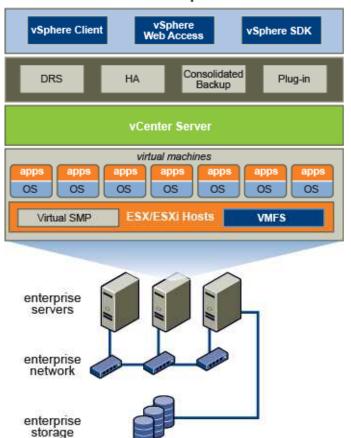
> Insulated from physical hardware

changes



vSphere Components

VMware vSphere



- ➤ VMware ESX™/ESXi
- > VMware vCenter™ Server
- VMware vSphere Client
- VMware vSphere Web Access
- VMware vStorage VMFS
- VMware Virtual SMP

Using vSphere in a Datacenter

vSphere is compatible with various other VMware products.

> For up-todate version compatibility information, go to http://www. vmware.com.

Infrastructure Optimization	Business Continuity	Desktop Management	Software Lifecycle
 VMware vCenter VMware vCenter Converter VMware Capacity Plan 	VMware vCenter Site Recovery Manager anner	VMware ViewVMware ACE	VMware Lab Manager
Resource Availability Management		Mobility	Security

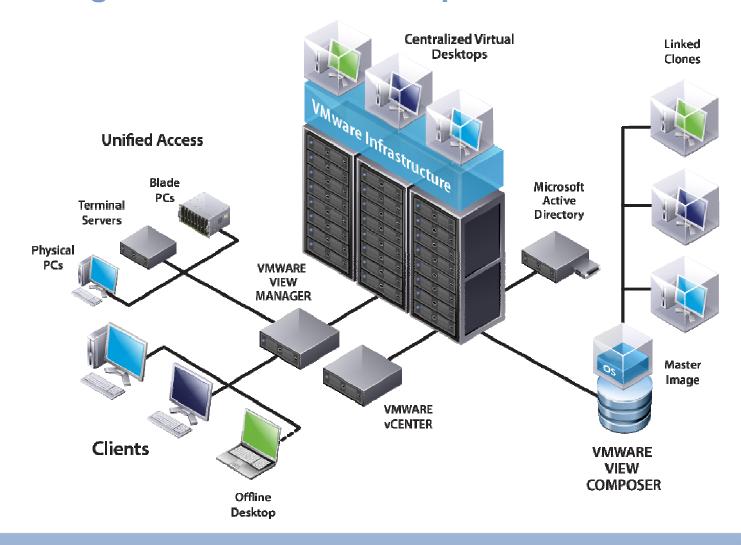
VMware DRS VMware HA VMware StorageVMware vCenter **VMotion Update Manager** VMware DPM VMware Consolidated VMware VMotion Backup VMware Data Recovery VMware vCenter Server Heartbeat

Virtual Platform

- VMware ESX
- VMware ESXi
- VMware Virtual SMP
- VMware vStorage VMFS
- VMware Server
- VMware Workstation
- VMware Fusion
- VMware Player

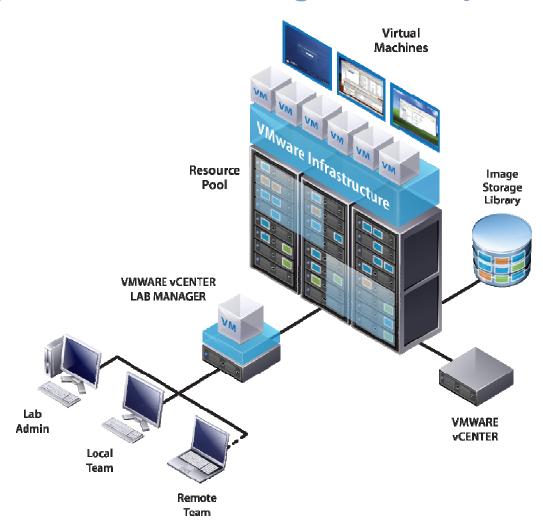


Using VMware View with vSphere





Using VMware Lab Manager with vSphere





Key Points

- ESX/ESXi uses virtualization layers based on the hypervisor architecture.
- Virtual machines are encapsulated into files and independent of physical hardware, making them easy to move and copy between hosts.
- vSphere is commonly used for datacenter consolidation.

