

A photograph of a server room. In the foreground, a laptop is open on a server rack, displaying a command-line interface with text. The server racks extend into the background, creating a perspective effect. The lighting is dim, with a bright area in the distance.

VMware Overview

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You Are Here



Importance and Module Objectives

Importance

VMware has an array of products and it is useful to understand from both a business and technical standpoint why one product is used over another.

Objectives for the learner

Identify the benefits of using a virtual machine

Identify uses for the various VMware products

Identify when to use one VMware product over another

Benefits of a Virtual Machine

Physical Machine

- Difficult to move or copy
- Bound to a specific set of hardware
- Often has short life cycle
- Requires personal contact to upgrade hardware
- Difficult to manage remotely



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



Why Use Virtual Machines?

~~OS and applications are freed from physical hardware~~

- Hardware maintenance is easier

- Fewer gotchas on hardware upgrade

- New options in disaster recovery

It's easy to image a virtual machine

- Configure OS and applications once, clone many times

- Back up a virtual machine by backing up its few constituent files

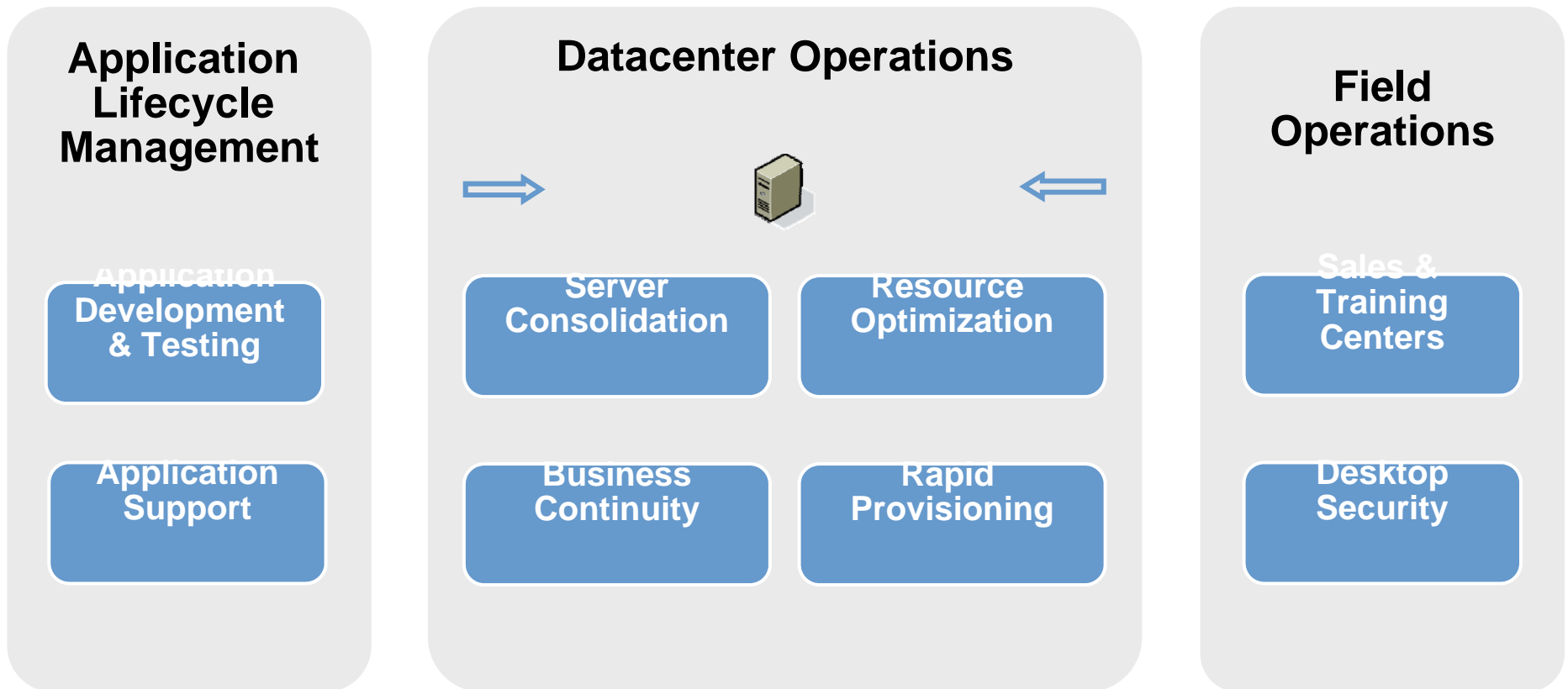
Many VMs can run on the same physical server

- Greater resource utilization

- Each is unaffected by the others

- Fine-grained tuning options

Use Cases for VMware Products



VMware Products

Category	Product	Use Case
Datacenter	VMware Infrastructure 3 (<i>ESX Server, Virtual SMP, VirtualCenter, VMotion, VMware HA, VMware DRS, and VCB</i>)	Application lifecycle management; Datacenter operations
Migration Tool	VMware Converter	Server consolidation
Development and Test	VMware Workstation	Application lifecycle management; Field operations
	VMware Lab Manager	Application lifecycle management
Enterprise Desktop	VMware Player	Desktop security
	VMware Virtual Desktop Infrastructure	Desktop manageability
FREE Virtualization	VMware Player	Run, share, evaluate pre-built applications and beta software in VMs
	VMware Server	Test/dev, evaluate software, server provisioning

VMware Infrastructure 3

A software suite for optimizing and managing IT environments through virtualization

Consists of the following software:

ESX Server

Virtual SMP

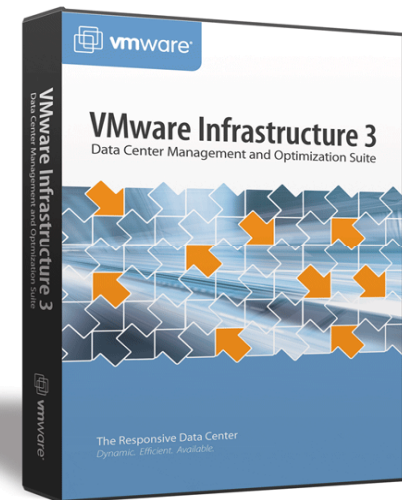
VirtualCenter

VMotion

VMware HA (High Availability)

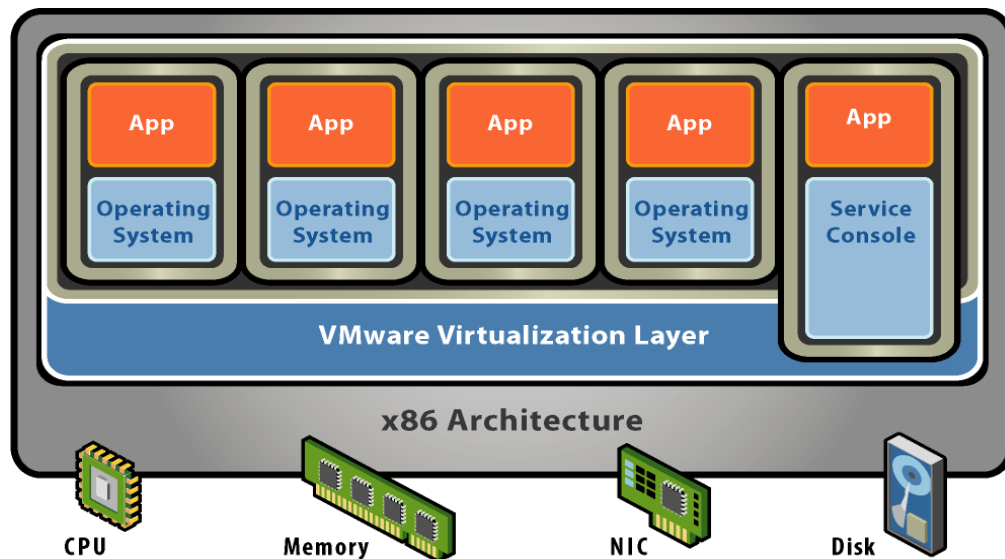
VMware DRS (Distributed Resource Scheduler)

VMware Consolidated Backup (VCB)



VMware ESX Server

Virtual Machine Platform for the Datacenter



A virtual machine platform that installs on “bare metal”

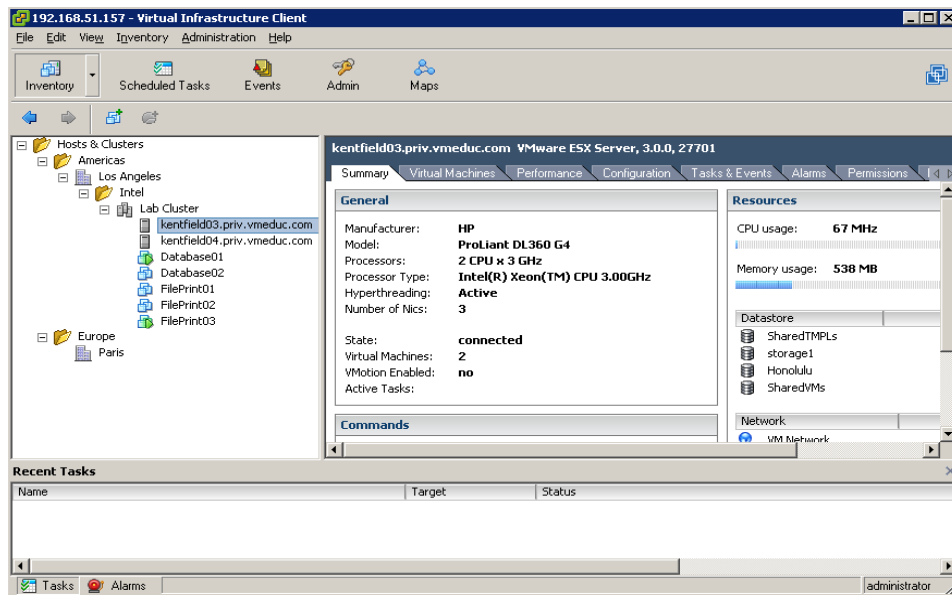
VMkernel has complete control over hardware resources

Uses a high-performance filesystem, VMFS-3

Supports dynamic allocation of computing resources

Enables VMs to use up to 4 physical processors with Virtual SMP

VMware VirtualCenter



Create and manage inventory of hosts and virtual machines

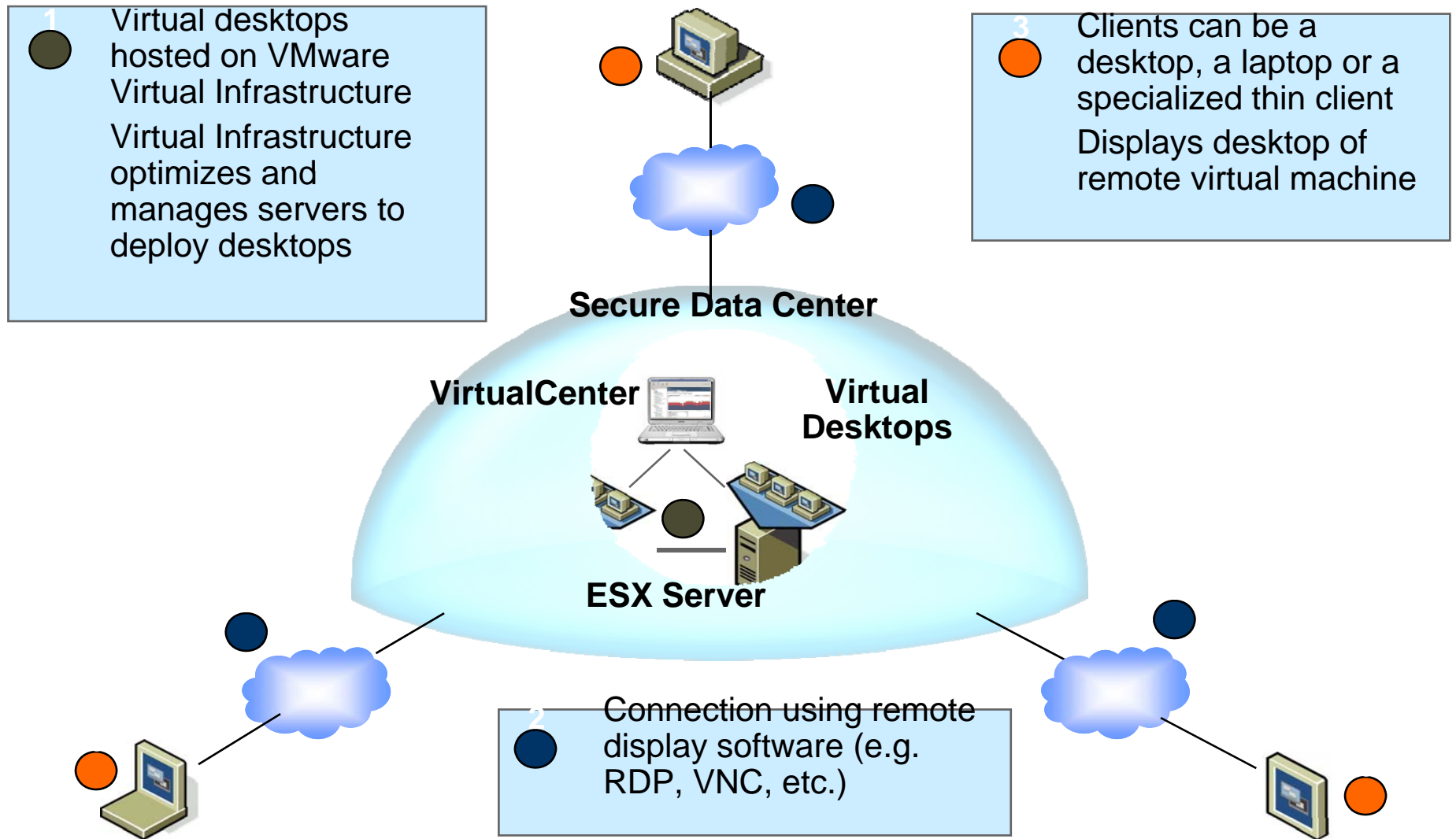
Provision virtual machines from templates

Migrate running VMs across hosts (VMotion)

Balance virtual machine workloads across hosts (VMware DRS)

Manage virtual machines for high availability and disaster recovery (VMware HA)

Use case for VMware Infrastructure: Virtual desktops

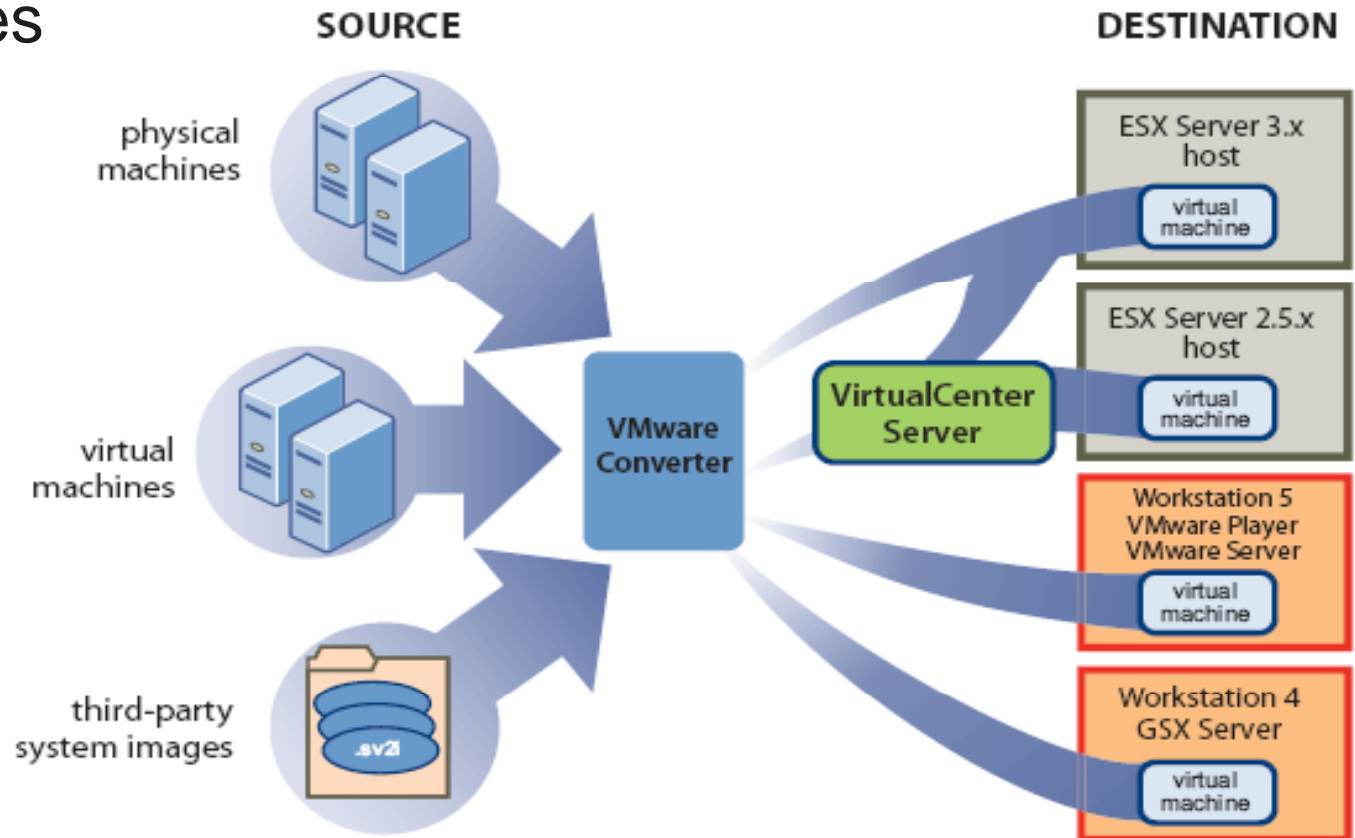


VMware Converter (Formerly P2V and VMware Importer)

Convert physical machines to virtual machines

Convert virtual machines

Convert third-party system images

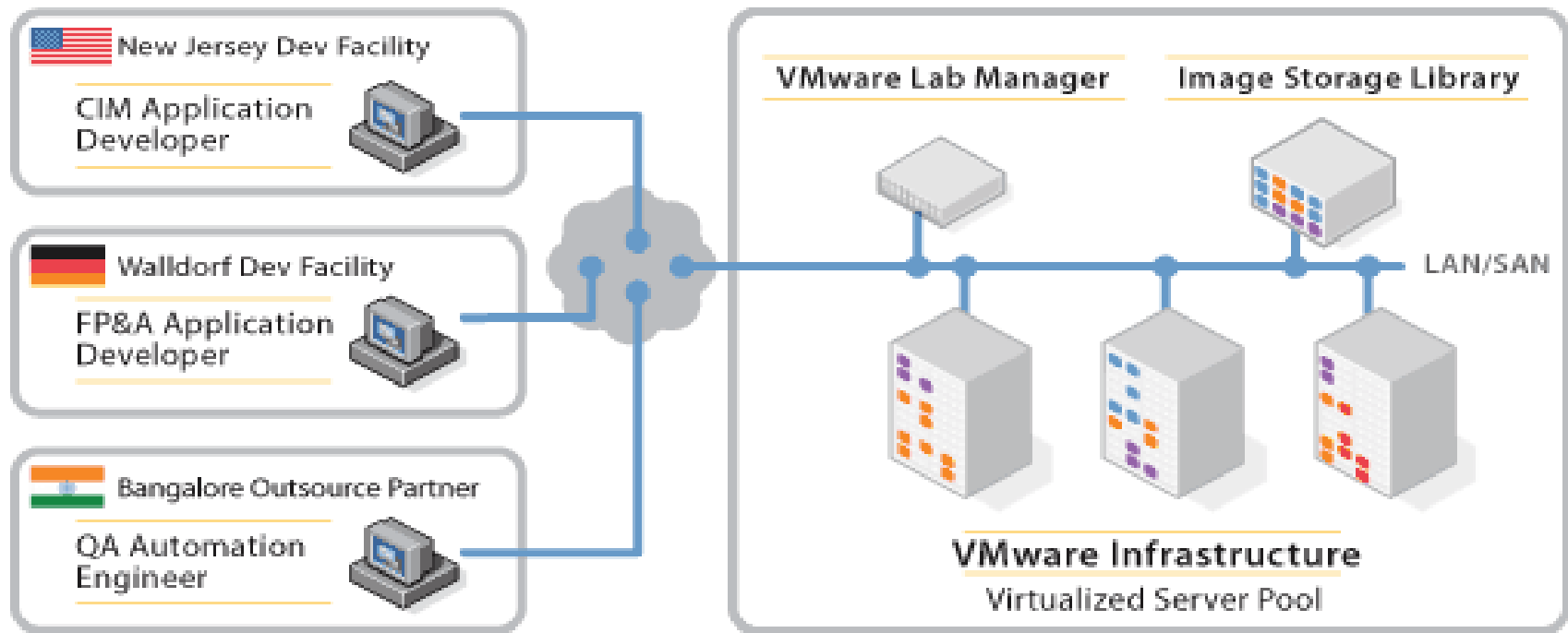


VMware Lab Manager

Rapidly set up multiple Test/Development environments

Provision environments quickly

Capture and reproduce software defects



VMware Workstation

Virtual machine platform for the desktop

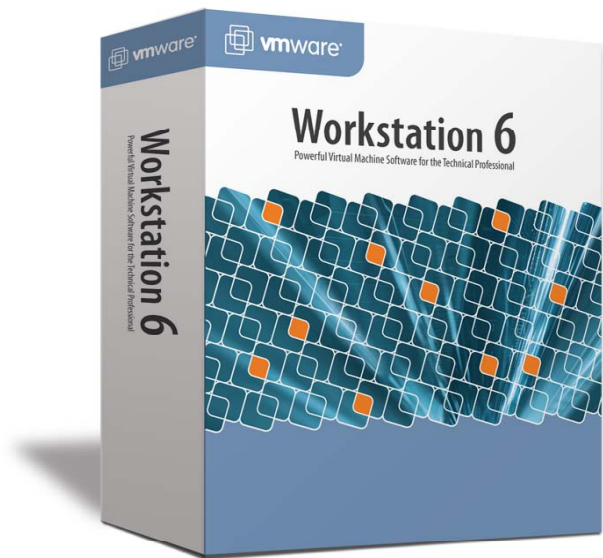
Installs on a Windows or Linux host and runs like an application

Supports Windows Vista (both guest and host OS)

Supports USB 2.0 devices (including high-speed storage and iPods)

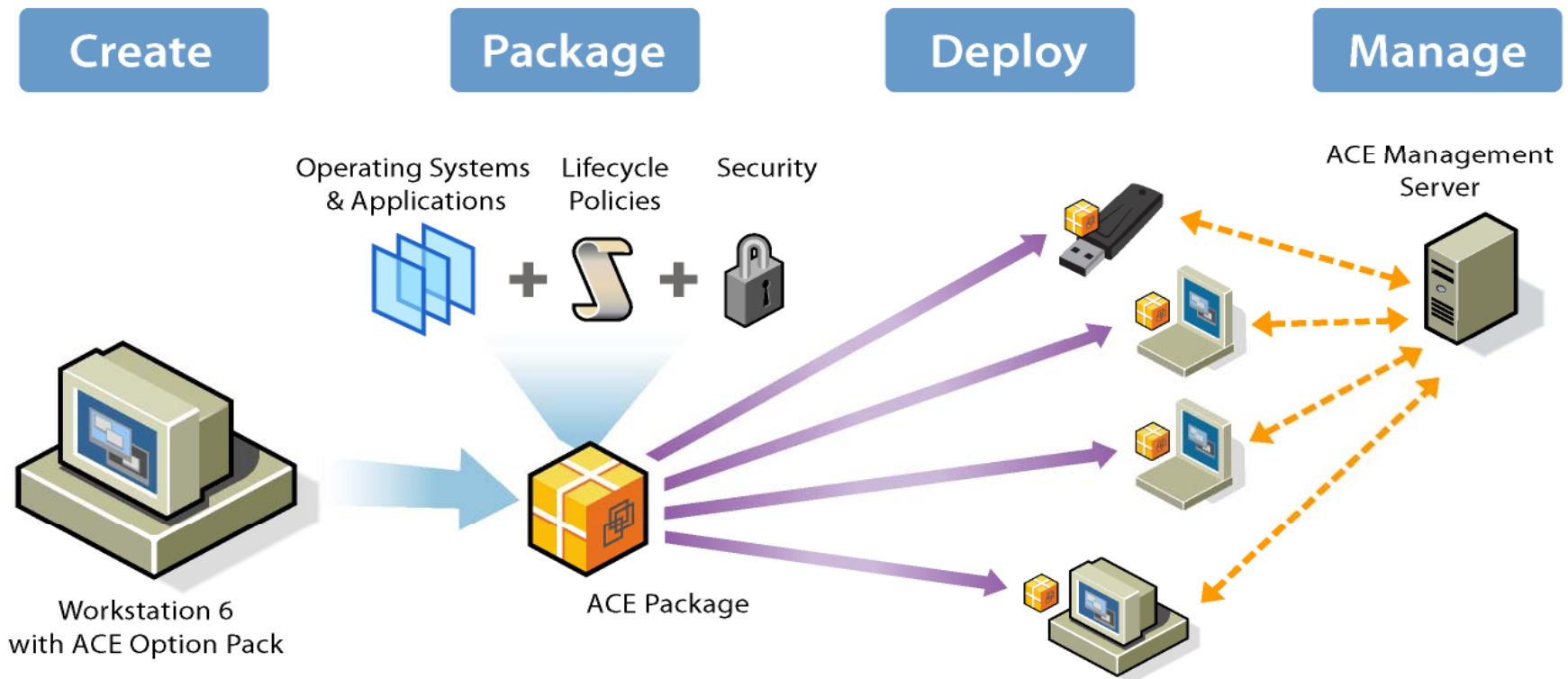
Provides full support for 2-way Virtual SMP

Provides VMware Converter for creating a new VM from a physical disk



VMware ACE

Allows IT desktop managers to provision standardized client PC environments inside secure, centrally managed virtual machines called ACEs



VMware Player

Free software to run any preconfigured Windows or Linux, 32- or 64-bit virtual machine on any PC

Way to introduce virtualization for first-time users

Distribute virtual machines within your organization

Evaluate preconfigured beta or evaluation software from ISVs

Use the VMware Browser Appliance virtual machine for safe browsing



VMware Server

Free virtualization product for Windows and Linux servers

Way to introduce virtualization for first-time users

Installs like an application and runs on any standard x86 hardware

Supports Intel® Virtualization Technology, virtual SMP and 64-bit guest operating systems

Supports any Windows or Linux application, including pre-built virtual appliances from VMTN

Can be managed by VirtualCenter 1.4

Easy upgrade path to VMware ESX Server



Desktop Products Comparison

	VMware Player	Workstation	ACE
Target User	Anyone	Developers, testers, system administrators	IT security administrators
Main use case	Evaluate software in VMs	Test/development, training, demos	Secure and manage unmanaged PCs
Capabilities	Run multiple VMs on single PC, create network configurations, access host devices		
	Create VMs		
		Add hardware devices, virtual SMP	
			Set security policies such as authentication, expiration, encryption, copy protection, device access and network access
			Package VMs as installable files for secure deployment

Server Products Comparison

	VMware Server	VMware Infrastructure 3
Environment	Department, workgroup	Enterprise datacenter
Server H/W Support	Compatibility from host OS	Requires VMware drivers
Platform	Linux & Win2000/2003	Runs directly on hardware
# of simultaneous VMs	2-4 per core	4-8 per core
System	2-16 CPUs, up to 64 GB RAM (limited by host OS for VMware Server)	
Management	Web-based interface, VM remote console	
	Centralized management with VirtualCenter 1.4	Centralized management, VM templates
High Availability	NIC teaming*, VM clustering, SAN connectivity* (*on VMware Server, available through host OS)	
Security		Hot migration of running VMs Multi-user VM administration, security through VLANs
Performance		Dynamic resource management

VMware Online Resources

VMware Technical Support

<http://www.vmware.com/support>
VMware Infrastructure 3 Documentation

http://www.vmware.com/support/pubs/vi_pubs.html
VMware Knowledge Base

<http://www.vmware.com/kb>
VMware Communities

<http://www.vmware.com/resources/communities.html>
VMware Technology Network (VMTN)

<http://www.vmware.com/vmtn>

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The screenshot shows the VMware Technology Network (VMTN) website. At the top left is the VMTN logo and the text "VMware Technology Network". At the top right is the VMware logo. Below the header is a navigation menu with items: VMTN Home, Technology Centers, Virtual Appliance Marketplace, Technical Papers, Documentation, Knowledge Base, Discussion Forums, Blogs, and More Communities. The main content area is titled "VMware Technology Network" and features several sections: "TOP NEWS" with a featured article "ESX Server Patches" (May 17, 2007) and other news items for VMware Workstation 6.0, SDK & API Resources, VMware ACE 2.0, and VMware Player 2.0. There are also sections for "VIRTUAL APPLIANCES", "TECHNICAL RESOURCES", "DISCUSSIONS", and "KNOWLEDGE BASE". On the right side, there are sections for "Join VMTN | About VMTN", "TOP RESOURCES" (listing VMware Infrastructure 3, Webinars, Virtual Appliances, VMworld 2006 Proceedings, RSS Newsfeed, and Newsletter Archive), and "VIRTUALIZATION BLOGS" (listing various blog posts).

Module Summary

Virtual machines are easy to move or copy because they are encapsulated in a set of files

VMware products can be used for application lifecycle management, datacenter operations and field operations

Free products such as VMware Player and VMware Server provide a good introduction to virtualization technology

A photograph of a server room. In the foreground, a laptop is open on a server rack, displaying a command-line interface with text. The server racks extend into the background, creating a perspective view of a long aisle. The lighting is bright, and the overall scene is clean and professional.

Questions?