

# Reference Slides



# vSphere & Hypervisor Editions

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## How are VMware ESXi and ESX different than VMware vSphere?

- **VMware ESX and ESXi are two alternative architectures that customers can choose** when deploying any of the paid editions of **VMware vSphere (Essentials, Essentials Plus, Standard, Advanced, Enterprise, Enterprise Plus)**.

Note: the **free edition of VMware vSphere Hypervisor** is **only available in the ESXi architecture**.

- **All the functionality of VMware vSphere is supported by both the ESXi and ESX architectures.** VMware vSphere clusters and resource pools don't necessarily have to be based on hosts using the same vSphere hypervisor architecture. Customers can **choose to cluster vSphere hosts that use ESXi architecture with vSphere hosts that use ESX**.

## What is the difference between VMware vSphere Hypervisor and VMware vSphere?

- **VMware vSphere Hypervisor is the entry level edition of VMware vSphere.** It is **available at no cost in order to help companies of all sizes experience the fundamental benefits of virtualization**. VMware vSphere Hypervisor enables customers to consolidate physical servers running multiple virtual machines to a single vSphere host. VMware vSphere Hypervisor is ideal for IT professionals to become familiar with virtualization technology and prove its value in their own organizations.

- In addition to server consolidation capabilities, the **VMware vSphere editions available for purchase (Essentials, Essentials Plus, Standard, Advanced, Enterprise, Enterprise Plus)** offer more advanced capabilities, such as high availability, live migration, power management, automatic load balancing and much more. To unlock such capabilities customers need to **purchase the corresponding VMware vSphere license and deploy VMware vCenter Server management software** which **enables centralized management of multiple vSphere hosts**.

# What's New in ESXi 4.1 Update 1

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The following information describes some of the enhancements available in this release of VMware ESXi:

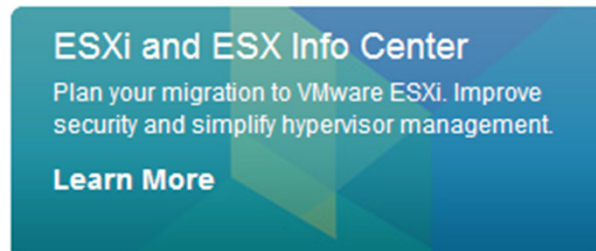
- **Inclusion of additional drivers** — ESXi 4.1 Update 1 includes the 3ware SCSI 2.26.08.036vm40 and Neterion vxge 2.0.28.21239-p3.0.1.2 drivers. For earlier releases, these drivers are only available as separate downloads.
- **Enablement of Trusted Execution Technology (TXT)** — ESXi 4.1 Update 1 can be configured to boot with Intel Trusted Execution Technology (TXT). This boot option can protect ESXi in some cases where system binaries are corrupted or have been tampered with. TXT is currently available on Intel Xeon processor 5600 series servers. For more information, see [KB 1033811](#).
- **Improvement in scalability** — ESXi 4.1 Update 1 supports up to 160 logical processors.
- **Support for additional guest operating systems** — ESXi 4.1 Update 1 provides support for RHEL 6, RHEL 5.6, SLES 11 SP1 for VMware, Ubuntu 10.10, and Solaris 10 Update 9 guest operating systems. For a complete list of guest operating systems supported in this release, see the [VMware Compatibility Guide](#).

# ESXi Convergence

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“VMware would like to remind customers that vSphere 4.1 is the last release to support both the ESX and ESXi hypervisor architecture.

Future major releases will include only the VMware ESXi architecture. For more information visit the ESXi and ESX Info Center.”



*<http://www.vmware.com/products/vsphere/esxi-and-esx/>*

# Visit the ESXi and ESX Info Center today

<http://vmware.com/go/ESXiInfoCenter>

The screenshot shows the VMware ESXi and ESX Info Center website. At the top is a navigation bar with links: Cloud Computing, Virtualize, Solutions, Products, Services, Support & Downloads, Partners, and Company. Below this is a breadcrumb trail: Home > Products > Datacenter Products > VMware vSphere > ESXi and ESX Info Center. The main heading is "VMware ESXi and ESX Info Center" with the subheading "Planning your upgrade to VMware ESXi, the next-generation hypervisor architecture." The main content area features a list of bullet points: "Understand the difference between the ESX and ESXi architectures.", "Learn what's new in ESXi 4.1, such as AD Integration.", "Learn how to upgrade from ESX to ESXi.", and "Find out how to perform common management tasks in ESXi environments." To the right of this list are links: "Read the ESXi Chronicles Blog", "Join the ESXi Community", "Learn about Scripting Tools", "View the ESXi FAQs", and "Learn how to Download ESXi". Below the main content area is a tabbed interface with tabs: Overview, Compare, Why ESXi?, Upgrade, Management, Scripting, and FAQs. The "Overview" tab is selected, showing the heading "Deploy the Most Reliable Production-proven Hypervisor Architectures" and a paragraph: "Virtualize even the most resource-intensive applications with the hypervisor architectures that set the industry standard for reliability, performance and cross-platform support." Below this paragraph is a button labeled "VMware ESX and ESXi". To the right of the main content area is a sidebar with a "Products" section containing links for "Datacenter Products", "VMware vSphere", "For Small Business", "For Mid-Size & Enterprise Business", "vSphere Upgrade Center", "ESXi and ESX Info Center", and "vSphere Purchase Advisor". Below this is a "Desktop Products" section, an "SMB Products" section, and a "Dev / Test Products" section. At the bottom of the sidebar is a "Register for ESXi classes" section with a green background, stating "VMware makes available hands-on training classes on ESXi at convenient locations around the world:" and listing "Transition to ESXi" and "Automation with PowerCLI". Below this is a "Webcast: Time to Upgrade to ESXi" section.

Cloud Computing Virtualize Solutions Products Services Support & Downloads Partners Company

Home > Products > Datacenter Products > VMware vSphere > ESXi and ESX Info Center

## VMware ESXi and ESX Info Center

Planning your upgrade to VMware ESXi, the next-generation hypervisor architecture.

Upgrade from ESX to ESXi to improve security and simplify hypervisor management.

- Understand the difference between the ESX and ESXi architectures.
- Learn what's new in ESXi 4.1, such as AD Integration.
- Learn how to upgrade from ESX to ESXi.
- Find out how to perform common management tasks in ESXi environments.

[Read the ESXi Chronicles Blog](#)  
[Join the ESXi Community](#)  
[Learn about Scripting Tools](#)  
[View the ESXi FAQs](#)  
[Learn how to Download ESXi](#)

Overview Compare Why ESXi? Upgrade Management Scripting FAQs

### Deploy the Most Reliable Production-proven Hypervisor Architectures

Virtualize even the most resource-intensive applications with the hypervisor architectures that set the industry standard for reliability, performance and cross-platform support.

VMware ESX and VMware ESXi are "bare-metal" hypervisor architectures, meaning they install directly on top of the physical server and partition it into

APP OS APP OS APP OS APP OS

VMware ESX and ESXi

Products

Datacenter Products

VMware vSphere

For Small Business  
For Mid-Size & Enterprise Business  
vSphere Upgrade Center  
[ESXi and ESX Info Center](#)  
vSphere Purchase Advisor

Desktop Products

SMB Products

Dev / Test Products

Register for ESXi classes

VMware makes available hands-on training classes on ESXi at convenient locations around the world:

- Transition to ESXi
- Automation with PowerCLI

Webcast: Time to Upgrade to ESXi

# Training

Pro-actively plan to train staff on ESXi.

## VMware Education Services Transition to ESXi

vmware® EDUCATION SERVICES

### VMware vSphere: Transition to ESXi

#### Overview

This hands-on training course covers the requirements and effects of transitioning your VMware vSphere™ environment to VMware® ESXi. It provides the knowledge and skills necessary to make fundamental design decisions and successfully add ESXi to a deployed vSphere environment. This course is based on ESXi 4.0.

#### Course Objectives

At the end of the course, you should be able to:

- Analyze ESXi and its benefits for your environment
- Identify ESXi installation and configuration procedures
- Use scripted installations for large-scale ESXi deployments
- Employ scripting interfaces to manage ESXi
- Identify risks when migrating to ESXi

#### Target Audience

System administrators, systems engineers, technical support engineers, and consultants responsible for managing and supporting a vSphere installation

#### Prerequisites

Completion of the VMware vSphere 4: Install, Configure, Manage course or the VMware vSphere 4: What's New course or have experience using VMware ESX™/ESXi and VMware vCenter™ products

#### Pricing and Scope

- Two (2) days of instructor-led, classroom training
- 60% lecture, 40% hands-on lab
- Individual enrollment available at convenient locations worldwide  
<http://www.vmware.com/education>
- Contact your VMware representative for pricing information.
- Onsite training available for companies that want the benefits of instructor-led classes without travel
- Contact VMware Education to discuss facility requirements for onsite training at [education@vmware.com](mailto:education@vmware.com).

#### Course Outline

Module 1: Course Introduction

Module 2: Working with VMware ESXi

- Identify differences between ESX and ESXi
- Recognize tasks and procedures when moving to ESXi

Module 3: Installing and Configuring VMware ESXi

- Analyze ESXi Installable and ESXi Embedded
- Install and configure ESXi Installable and ESXi Embedded
- Recognize the steps for upgrading to ESXi

Module 4: Performing Management Tasks

- Identify hardware monitoring techniques
- Discuss system management and backup methodology
- Distinguish the log files
- Recognize security methodologies
- Employ file management practices
- Perform basic troubleshooting with the direct console user interface

Module 5: Using Scripting Interfaces

- Identify the scripting interfaces for ESXi
- Discuss primary scripting interfaces
- Install VMware vSphere Management Assistant
- Identify differences between commands used with ESX and those used with ESXi
- Recognize custom commands and how to substitute VMware vSphere Command-Line Interface commands or vSphere PowerCLI cmdlets for them

Module 6: Large-Scale Deployment of VMware ESXi

- Identify scripted installation programs for ESXi
- Analyze the commands to perform scripted installation
- Discuss best practices for large-scale deployment

# Free “Transitions to ESXi Essentials” eLearning course

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## Become a true ESXi expert with the new FREE VMware eLearning course and ebook offer!

Great news for all VMware customers: the VMware Education Services team has just made available a new, FREE eLearning course dedicated to ESXi, [“Transition to ESXi Essentials”](#). The course is a self-paced three-hour online training that provides the knowledge necessary to make fundamental design decisions to successfully add VMware ESXi to a vSphere environment and to take advantage of all of the new features included in ESXi 4.1. The training is ideal for system administrators, consultants and engineers responsible for managing and supporting a vSphere environment.

But it doesn’t end here! By completing the **Transition to ESXi Essentials** course and the short survey that follows at the end, you will also receive a FREE ebook copy of [“VMware ESXi: Planning, Implementation, and Security”](#) authored by Dave Mishchenko and edited by VMware technical experts. Dave’s book is truly a phenomenal resource for all VMware users to learn everything there is to know about ESXi. While the **Transition to ESXi Essentials** course will remain available for free in the VMware Education Services portal, we’ll be able to also offer Dave’s book for free only while supplies last. So, hurry up, complete the training and turn in your survey as soon as possible!

For those of you who want to get a more direct hands-on experience on ESXi, VMware Education Services continues to offer an in-depth instructor-led two day course (in this case for a fee). [Here](#) is the link to class schedule and registration.

As you all know very well by now, 4.1 is the last [release](#) for ESX. Future releases of vSphere – starting with the next one – will only be based on the ESXi hypervisor architecture. Needless to say, now is the time to ramp up your expertise about ESXi and how to take advantage of its unique capabilities. The training options discussed above are just a couple of the several resources you can leverage to learn about ESXi. Others that are strongly recommended to help you become the ultimate ESXi expert are:

- [ESXi 4](#) and [ESX 4](#) VMTN communities
- [ESXi and ESX Infocenter](#)
- [VMware ESXi Chronicles](#) and [VMware vSphere](#) blogs
- [VMware Knowledge Base](#)
- VMwarevSphere on Twitter
- VMware vSphere page on Facebook



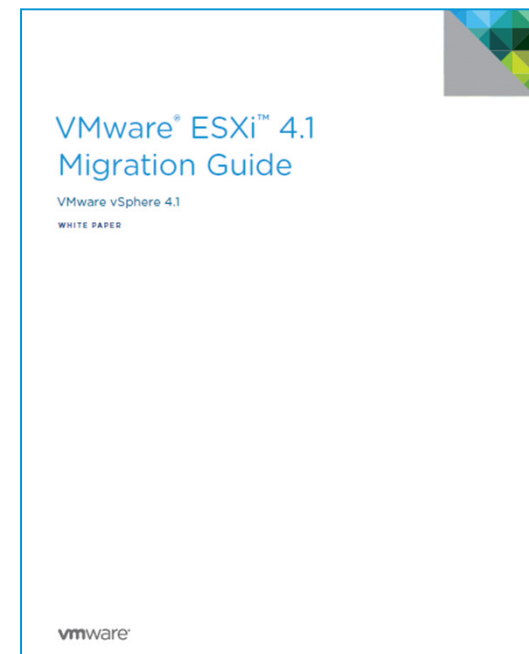
# VMware ESXi Migration Guide

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- Learn how to plan your migration to the ESXi architecture from the legacy ESX framework.
- Download ESXi 4.1 migration guide

<http://www.vmware.com/resources/techresources/10112>

- **VMware ESXi is VMware's next generation hypervisor architecture and is designed to improve hypervisor management** in the areas of **security, deployment and configuration**, and **ongoing administration**.
- In the **vSphere 4.1 release** VMware has **added significant enhancements** to either **ESXi** or the **core tools** that are **used to manage ESXi**.
- This **paper describes the architecture of ESXi** and then **explains how various management tasks are performed in ESXi 4.1**.
- This **information can be used to help plan a migration to the ESXi architecture** from the legacy ESX framework.





# ESXi Chronicles Blog – Ops Changes

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<http://blogs.vmware.com/esxi/>

One of the things that will probably be **most time consuming when migrating to ESXi** are the **changes in operational procedures that will be required**. Of course this fully depends on what type of user you are today. I guess we can **qualify** the **users** in **three main categories**:

- vCenter addict
- PowerCLI god
- Bash guru

For both **category 1 and 2** the **changes in operational procedures will be kept to a bare minimum** but for **category 3, the bash guru**, the **changes will be substantial**. This **series of articles** will take **some examples** of what **you used to do** with **ESX classic** and **translate it to ESXi**. The main **focus** here will be **vMA and/or the Tech Support Mode console**. We will also provide you with some additional examples for scripted installations to show you **the possibilities with ESXi are endless**, just like with ESX classic.

## Ops Changes

- Ops changes part 1 – **Introduction**
- Ops changes part 2 - **Scripted installation**
- Ops changes part 3 - **Local disk vs USB vs BFS**
- Ops changes part 4 - **Injecting or installing drivers**
- Ops changes part 5 - **Scratch partition**

## Additional Articles

- Scripted install with ESXi
- Adopting ESXi, now is the time!
- Cool PowerCLI script for backing up the ESXi System Image
- ESXi 4.1 Active Directory Integration

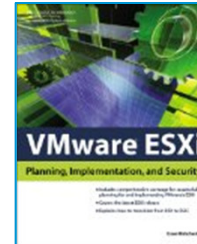
# Publications

## VMware ESXi: Planning, Implementation, and Security

by Dave Mishchenko

Cengage Learning © 2011 (481 pages)

ISBN:9781435454958



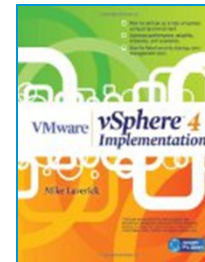
**“Perfect for current VMware VI3 and vSphere administrators who may be planning their migration to vSphere ESXi, this guide covers the key features critical to successfully planning for and implementing VMware's ESXi.”**

## VMware vSphere 4 Implementation

by Mike Laverick

McGraw-Hill/Osborne © 2010 (682 pages)

ISBN:9780071664523



**“Featuring tips, techniques, and best practices, this guide shows you how to design and deploy a high-performance cloud-based enterprise IT platform, and dramatically cut hardware costs, maximize computing power, and centralize system administration.”**

## Virtualizing Microsoft Tier 1 Applications with VMware vSphere 4

by Charles A. Windom Sr., Hemant Gaidhani and Alex Fontana

Sybex © 2010 (528 pages)

ISBN:9780470563601



**“Authored by insiders at VMware who also have developed best practices for multi-tier applications for VMware environments, this book will guide you step-by-step in virtualizing the latest versions of Microsoft Tier 1 applications.”**