

VMware vSphere 4 on Dell
PowerEdge Systems
Getting Started Guide



Notes, Cautions, and Warnings



NOTE: A NOTE indicates important information that helps you make better use of your computer.



CAUTION: A CAUTION indicates potential damage to hardware or loss of data if instructions are not followed.



WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

Information in this publication is subject to change without notice.

© 2010—2011 Dell Inc. All rights reserved.

Reproduction of these materials in any manner whatsoever without the written permission of Dell Inc. is strictly forbidden.

Trademarks used in this text: Dell™, the DELL™ logo, PowerEdge™, and PowerVault™ are trademarks of Dell Inc. VMware®, Virtual SMP®, vMotion®, vCenter®, and vSphere® are registered trademarks or trademarks of VMWare, Inc. in the United States or other countries.

Other trademarks and trade names may be used in this publication to refer to either the entities claiming the marks and names or their products. Dell Inc. disclaims any proprietary interest in trademarks and trade names other than its own.

Contents

Creating the ESX Installation Media	5
Creating the ESXi Recovery Media	5
Creating the vCenter Server Installation Media	7
Installing vCenter Server	7
Downloading the Patches and Updates for ESX and ESXi.	7
Installing, Enabling, and Disabling ESXi	9
Installing Your Flash Media.	9
Installing a USB Key or SD Memory Card	9
Installing ESXi on Flash Media	10
Enabling or Disabling ESXi	11
Configuring One-Time Boot to ESXi	12
Configuring Recurring Boot to ESXi	13
License Certificate.	13
Licensing Modes.	14
Evaluation License	14
ESXi Single Server Edition License.	14
vSphere Essentials Plus, Standard, Advanced, Enterprise, Enterprise Plus Edition License	15
Administering License Keys	15

 **NOTE:** The VMware ESX, ESXi, or the VMware vCenter Server media is not shipped with the system.

Creating the ESX Installation Media

- 1 Go to the VMware Download Center for Datacenter Virtualization Products website at vmware.com/download.
- 2 Select the VMware vSphere 4 download link.
- 3 Use your VMware store account credentials to log in to the download portal. Follow the on-screen instructions to download ESX.
- 4 Use a blank media to burn the ISO image.
You have now created your ESX installation media.

For information on deploying ESX on your system, see the *VMware ESX 4 on Dell PowerEdge Systems Deployment Guide* at support.dell.com/manuals.

Creating the ESXi Recovery Media

 **NOTE:** If ESXi was ordered, it is pre-installed on your PowerEdge system. The ESXi recovery media is required only for the recovery of a corrupted image.

 **NOTE:** If you did not order ESXi with your system, you can order the Internal Dual SD Module kit at dell.com and download the ESXi Installation media from support.dell.com. For information on how to install and setup ESXi, see "Installing, Enabling, and Disabling ESXi" on page 8.

 **NOTE:** vSphere 4.1 with its subsequent updates and patch releases are the last releases to include both ESX and ESXi hypervisor architectures. Future major releases of VMware vSphere include only the VMware ESXi architecture. It is recommended that you migrate to ESXi starting with this release.

You can download the Dell-customized ESXi recovery image from support.dell.com.

- 1 Go to support.dell.com.
- 2 Select your line of business.
- 3 Select **Drivers & Downloads**.
- 4 Select **Enter a Tag**. Enter the Service Tag of the system you want to install ESXi on and select **Go**.

Alternatively, you can select **Choose a Model** and navigate to **Servers, Storage, Networking**→ **PowerEdge Server**. Select the model of your system and confirm your selection.

The **Drivers & Downloads** page is displayed.

- 5 Choose the **Operating System** as **ESXi**.
- 6 Expand **Enterprise Solutions**.
- 7 Select **Download Now** beside the appropriate image.
- 8 Use a blank media to burn the ISO image.

You have now created your ESXi recovery media.

For information on deploying ESXi on your system, see the *VMware ESXi 4 on Dell PowerEdge Systems Deployment Guide* at support.dell.com/manuals.

- The Dell-customized ESXi Recovery ISO image content does not include Dell OpenManage Server Administrator. For detailed instructions to install and use Dell OpenManage Server Administrator, see the Dell OpenManage documentation at support.dell.com/manuals. Select **Software**, then **Systems Management**.
 - The files that Dell creates or modifies as part of customization are:
 - `etc/vmware/oem.xml`
 - `etc/vmware/support`
 - `etc/vmware/vmware.lic`
-  **NOTE:** The list of files appended, modified or customized by Dell may change during a later release.
-  **NOTE:** Dell-customized ESXi image may contain additional or updated drivers (VMware-IOVP certified). For more information, see "*Additional information*" section of the release at support.dell.com
- Dell may, if needed, update the customized ISO for a critical patch impacting Dell to include VMware patches/bug fixes for Dell hardware.
 - Dell VIB (Dell OpenManage Offline Bundle) can be installed on ESXi systems deployed using either ESXi installation media from VMware (OEM uncustomized) or Dell customized ESXi installation media.

Creating the vCenter Server Installation Media

- 1 Go to vmware.com/download.
- 2 Select the **VMware vSphere 4** download link.
- 3 Use your VMware store account credentials to log in to the download portal.
- 4 Follow the on-screen instructions to download the vCenter Server software.

- 5 Use a blank media to burn the ISO image.
You have now created your vCenter Server installation media.

Installing vCenter Server

 **NOTE:** You must install and use vCenter Server to centrally manage your vSphere environment and to make use of all the features of vSphere Essentials Plus, Standard, Advanced, Enterprise, or Enterprise Plus edition.

- 1 Insert the vCenter Server media into the optical drive.
- 2 Follow the on-screen instructions.

 **NOTE:** If the installation program does not start automatically, browse to the *vCenter Server* media directory and locate **autorun.exe**. Double-click **autorun.exe** and follow the on-screen instructions.

Downloading the Patches and Updates for ESX and ESXi

 **NOTE:** Ensure that you follow the instructions given in this section to install any patches or updates for ESX and ESXi.

 **NOTE:** Check for the latest patch and update releases for your ESX or ESXi version regularly.

After you install ESX or ESXi, check for the latest patches or updates. For some hardware configurations, VMware may list certain patches or updates as *required* on its hardware compatibility list at vmware.com/resources/compatibility/search.php.

To check for and install the latest ESX or ESXi patch:

- 1 Go to support.vmware.com/selfsupport/download.
- 2 Select **ESX or ESXi (Embedded and Installable)** from the product drop-down menu.
- 3 Select the version of your software from the version drop-down menu.
- 4 Enter the **Release Date** of the patch or select the **Release Date** by clicking the calendar icon.
- 5 Select **All Classifications** from the classifications drop-down menu.
- 6 Select **Search**.

The **Download Patches** page displays a list of all the patches that match the details you specified.

- 7 Select the required patch and click **Download Now** to download the zip file.
- 8 Install the patch using any of the update tools provided by VMware such as `esxupdate`, `vihostupdate`, VMware vSphere **Host Update Utility**, or vCenter Update Manager.

 **NOTE:** For more information on patch management, see [vmware.com/support/pubs/](https://www.vmware.com/support/pubs/).

Installing, Enabling, and Disabling ESXi

 **WARNING:** Before you begin any of the procedures in these sections, read the safety information that shipped with your system. For additional best practices information, see [dell.com/regulatory_compliance](https://www.dell.com/regulatory_compliance).

Installing Your Flash Media

 **NOTE:** If you did not order ESXi with your system, you can order the Internal Dual SD Module kit at [dell.com](https://www.dell.com) and download the ESXi Installation media from support.dell.com. For information on creating your ESXi media, see "Creating the ESXi Recovery Media" on page 5.

 **NOTE:** If you have ordered the ESXi kit separately and your PowerEdge system is not pre-installed with the software, you must follow the steps in this section to install ESXi.

Your ESXi recovery kit contains one of the following for your PowerEdge system:

- USB key

 **NOTE:** The flash storage device may ship separately.

- Secure Digital (SD) memory card

 **NOTE:** To install the SD memory card, an internal SD module may be shipped with some systems.

Installing a USB Key or SD Memory Card

For instructions to install the internal USB key in the supported PowerEdge 1950III, 2900III, and 2950III systems, see the appropriate *Information Update* document at support.dell.com/manuals.

For instructions to install the internal USB key or the SD Card on the system board for other supported PowerEdge systems, see the *Hardware Owner's Manual* of your system at support.dell.com/manuals.



NOTE: For more information about supported configurations of PowerEdge systems with the USB key or the SD memory card, see the *VMware ESXi 4 on Dell PowerEdge Systems Deployment Guide* at support.dell.com/manuals.

Installing ESXi on Flash Media

After installing the USB key or SD card in your system, locate the ESXi recovery media that you had created in "Creating the ESXi Recovery Media" on page 5.

- 1 With your system turned off, remove or disable the additional physical USB-based storage devices other than the one on which ESXi must be installed.



NOTE: If you do not remove or disable the specified USB devices, an error may occur during the image recovery process.

- 2 Turn on the system.
- 3 When the DELL logo is displayed, press <F2> immediately to enter System Setup.



NOTE: If you hold down a key on the keyboard for extended periods of time, it may result in keyboard failure. To avoid possible keyboard failure, press and release <F2> in even intervals until the **System Setup** screen is displayed.

If the operating system logo is displayed, continue to wait until the operating system finishes loading. Restart the system and try again.

- 4 Use the up- and down-arrow keys to highlight **Integrated Devices**, and then press <Enter>.
- 5 Press <Enter> to save your selection, then Press <Esc>.
- 6 Select **Save Changes and Exit**, and then press <Enter> to exit System Setup.
- 7 Insert the ESXi recovery media into the optical drive.
- 8 Reboot the system.
- 9 When the DELL logo displays, press <F11> immediately.
- 10 At the **Boot Menu**, use the up and down-arrow keys to select the CD/DVD drive where your ESXi recovery media is placed, and then press <Enter>.

The recovery environment starts. When the recovery image loads, the system is ready to begin the flash storage imaging process.

 **CAUTION: Step 11 erases all data on your USB or SD storage device.**

- 11 Press <Enter> to confirm that you want to re-image the internal storage device.
 -  **NOTE:** If the system displays a fatal error when you press <Enter>, remove or disable the additional physical USB devices on the system other than the one on which ESXi must be installed.
- 12 When the recovery process is complete, press <Enter> to reboot the system.
- 13 When the DELL logo is displayed, press <F11> immediately.
- 14 At the **Boot Menu**, use the up- and down-arrow keys to select the internal USB or SD storage device, and then press <Enter>.
- 15 The system reboots and launches ESXi. To enable recurring boot, see "Configuring Recurring Boot to ESXi" on page 13.
- 16 Set the correct licensing mode as instructed in "Licensing Modes" on page 14.

Enabling or Disabling ESXi

ESXi installs on an internal flash storage device.

 **CAUTION: Before you begin using the trial version of ESXi, you must enable the internal flash device port. Disable the internal flash storage device when booting to another operating system to avoid loss of data.**

 **NOTE:** After the internal flash device port is enabled, you can configure the system to boot ESXi only when specified (one-time boot) or all the time (recurring boot).

- 1 Turn on the system.
- 2 When the DELL logo is displayed, press <F2> immediately to enter the **System Setup** screen.

 **NOTE:** If you hold down a key on the keyboard for extended periods of time, it may result in keyboard failure. To avoid possible keyboard failure, press and release <F2> in even intervals until the **System Setup** screen is displayed.

If the operating system logo is displayed instead of the **System Setup** screen, wait until the operating system finishes loading. Turn off the system and try again.

- 3 Use the up- and down-arrow keys to highlight **Integrated Devices**, and then press <Enter>.
- 4 To *enable* ESXi:
 - a Highlight **SD Card** or **Internal USB Port**, depending upon which device is valid for your system.
 - b Use the right- and left-arrow keys to enable the device.

To *disable* ESXi:

- a Restart ESXi and access **System Setup**.
- b Select **SD Card** or **Internal USB Port**, depending upon which device is valid for your system.
- c Use the right- and left-arrow keys to disable the device.

 **CAUTION: Booting into an operating system other than ESXi without disabling the flash media results in data loss.**

- 5 Press <Enter> to save your selection.
- 6 Press <Esc>.
- 7 Select **Save Changes and Exit**, and then press <Enter> to exit the **System Setup** screen.
- 8 Reboot the system.
- 9 To complete the process, follow the steps in "Configuring Recurring Boot to ESXi" on page 13 or "Configuring Recurring Boot to ESXi" on page 13.

Configuring One-Time Boot to ESXi

- 1 Turn on your system.
- 2 The DELL logo is displayed. Press <F11> to enter the one-time boot menu option.

The menu entry changes to **Entering Boot Menu**, confirming your selection.
- 3 The boot menu displays several boot options. Using the up- and down-arrow keys, select **Hard Drive C:**, then use the right-arrow key to select **SD Card** or **Internal USB Port**.
- 4 Press <Enter> to boot to the internal secure digital (SD) card or USB port.

Configuring Recurring Boot to ESXi

Follow the steps given below to boot your system to ESXi. Once the internal flash device port is enabled, your system continues to boot to ESXi.

- 1 Turn on your system.
- 2 The DELL logo is displayed. Press <F2> to launch the Setup menu.
- 3 After you complete the system boot, the system BIOS configuration menu displays.
- 4 Using the up- and down-arrow keys, select **Hard Disk Boot Sequence** and then select **SD Card: Multi Card**. Press the hyphen key <-> to move the SD card or internal USB port up in the order.
- 5 Press <Enter>, <Esc>, and then <Enter> to save these changes.



CAUTION: It is recommended that you do not modify other settings unless you are familiar with the settings. Modifying settings could cause your system to fail to boot or function properly.

- 6 Restart your system.

License Certificate

The following VMware licensing is available through Dell OEM:

- vSphere Essentials Plus
- vSphere Standard
- vSphere Advanced
- vSphere Enterprise
- vSphere Enterprise Plus
- vCenter Server



NOTE: vSphere Essentials Plus is an all-inclusive package that includes licenses for three physical servers; each server with up to two processors and vCenter Server for Essentials, to centrally manage the servers. This edition is supported only on one or two processor systems.

If you purchased vSphere 4 or vCenter Server OEM from Dell, you would receive the partner activation code certificate with the server documentation. To use the software and receive the subscription services, you must register and exchange the partner activation code printed on the license certificate for

a license key or license activation code. The registration must be completed within 30 days from the date of product purchase. For more information, see vmware.com/code/dell.

If you have multiple activation codes, you can register the activation codes either with one license administrator or with different license administrators.

For information on product features and licensing methods, see vmware.com.



NOTE: For more information about the different editions, see vmware.com.



NOTE: If you ordered your system with ESXi Single Server edition, the license certificate is not shipped. ESXi is pre-installed and activated with the license key. Record the license key and store it safely. See "ESXi Single Server Edition License" on page 14.

Licensing Modes

Evaluation License

VMware allows a 60-day free evaluation period for all enterprise-level features of vSphere 4. At the end of the evaluation period, your ESX/ESXi hypervisor may stop managing all virtual machines in the inventory. To continue managing the virtual machines, upgrade the evaluation license to either the ESXi Single Server Edition license or the vSphere Essentials Plus, Standard, Advanced, Enterprise, or Enterprise Plus edition license.

ESXi Single Server Edition License

The ESXi ordered with your system is pre-installed and activated with the ESXi Single Server edition license. Note down the license key and store it safely. To retrieve the license key:

- 1 Log in to the **Direct Console User Interface (DCUI)**.
- 2 Go to **View Support Information** and note down the displayed license key. Alternatively, connect to the ESXi system using vSphere Client. Go to **Configuration**→**Software**→**Licensed Features** and record the displayed license key.



NOTE: You can choose to evaluate the enterprise-level features during the first 60-day free evaluation period. At the end of the 60-day evaluation period, reassign the recorded ESXi Single Server edition license key to enable your system to function in that mode.

vSphere Essentials Plus, Standard, Advanced, Enterprise, Enterprise Plus Edition License

If you ordered the vSphere Essentials Plus, Standard, Advanced, Enterprise, or Enterprise Plus edition, the license certificate is shipped. Register and exchange the partner activation code printed on the license certificate for a license key. Administer the license key to your ESX or ESXi host using vSphere Client or vCenter Server.

Administering License Keys

ESX is not pre-installed when purchased with the system. You can administer the license key during installation or you can choose to install in the evaluation mode and administer the license key after installation.

The ESXi ordered with your system is pre-installed and activated with the ESXi Single Server edition license. If you ordered the ESXi hypervisor-based vSphere Essentials Plus, Standard, Advanced, Enterprise, or Enterprise Plus edition, replace the pre-installed ESXi Single Server edition license key with the vSphere Essentials Plus, Standard, Advanced, Enterprise, or Enterprise Plus edition license key.



NOTE: You can choose to evaluate the enterprise-level features during the first 60-day free evaluation period. At the end of the 60-day evaluation period, reassign the factory-installed ESXi Single Server edition license key or the vSphere Essentials Plus, Standard, Advanced, Enterprise, or Enterprise Plus edition license key to enable your system to continue functioning.

You can administer the license key using vSphere Client to manage the licenses individually on the ESX or the ESXi system. Alternatively, you can use vCenter Server to manage the licenses centrally.



NOTE: For more information on administering license keys and VMware software licensing configuration, see vmware.com/support/pubs.



NOTE: If you receive a warning that you are disabling certain features by switching out of evaluation mode, click **OK**, and then click **Yes**.



NOTE: You must use all licensing information according to VMware's End User Licensing Agreement.



NOTE: Licensing changes made using VMware vSphere Client are not persisted on ESXi reboots. This issue occurs only when licensing changes are done using VMware vSphere Client instead of vCenter Server. For more information, see *VMware vSphere 4.x on Dell PowerEdge Systems Release Notes* at support.dell.com/manuals.