

Deploying Microsoft Windows Server 2003 x64 Editions on Dell PowerEdge Servers

Microsoft® Windows Server™ 2003 x64 Editions are designed for servers that are based on 64-bit extended architecture. This article provides guidelines for installing Windows Server 2003 x64 Editions on Dell™ PowerEdge™ servers equipped with Intel® Extended Memory 64 Technology–based processors. The article also describes hardware and software components supported by the x64 operating systems.

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Microsoft Windows Server 2003 x64 Editions—also referred to as x64—support 64-bit extended architecture–based servers. These operating systems are supported on eighth-generation and later Dell PowerEdge servers¹ that are equipped with Intel Extended Memory 64 Technology (EM64T). Figure 1 lists the Dell PowerEdge servers that currently support the x64 platform.

To help ensure compatibility on Windows Server 2003 x64 Editions, Dell worked extensively with Microsoft and other hardware and software partners, performing comprehensive tests across Dell’s hardware and software products throughout the development of the x64 platform. In addition to performing tests in Dell labs, Dell engineers worked with several enterprises that participated in Microsoft’s Technology Adoption Program. These enterprises received prerelease versions of device drivers, BIOS and firmware releases, and Dell OpenManage™ 4 software components. The Technology Adoption Program helped identify and address enterprise issues from the perspective of a production environment, which in turn enhanced Dell hardware and software product readiness for Windows Server 2003 x64 Editions.

This article discusses Windows Server 2003 x64 Editions and the Intel EM64T architecture, focusing in particular on the installation of x64 on EM64T-based Dell PowerEdge servers.² Besides explaining the recommended installation process for Windows Server 2003 x64 Editions, this article describes Dell OpenManage components, network components, and storage components supported by x64.

Dell support for Windows Server 2003 x64 Editions

Microsoft offers three editions of x64: Standard, Enterprise, and Datacenter.³ Dell supports Standard x64 Edition and Enterprise x64 Edition, which are compared in Figure 2. Figure 3 lists Microsoft’s required minimum and recommended minimum hardware configurations for supporting these operating systems.

Windows Server 2003 SP1 and x64

Windows Server 2003 x64 Editions are based on the same code-tree as Windows Server 2003 Service Pack 1 (SP1). However, x64 is not packaged as a Service Pack. The x64 Editions are 64-bit operating systems, and they differ

¹Legacy Dell PowerEdge servers (seventh-generation and earlier, not listed in Figure 1) do not support Intel EM64T–capable processors and thus do not support Windows Server 2003 x64 Editions. For more information about eighth-generation Dell PowerEdge servers that do support Intel EM64T architecture, visit www.dell.com/servers.

²For more information about Windows Server 2003 x64 Editions, see “Introducing Microsoft Windows Server 2003 x64 Editions for the Intel EM64T Platform” by Ranjith Purush and Chip Webb in *Dell Power Solutions*, May 2005.

³For a detailed product overview of Windows Server 2003 x64 Editions, visit www.microsoft.com/windowsserver2003/64bit/x64/default.mspx.

Dell PowerEdge server	BIOS/BMC firmware
PowerEdge SC1420	A00/None
PowerEdge SC1425	A01/A01
PowerEdge 1800	A02/A01
PowerEdge 1850	A02/A02
PowerEdge 1855	A02/A00
PowerEdge 2800	A02/A02
PowerEdge 2850	A02/A02
PowerEdge 6800	A00/A00
PowerEdge 6850	A00/A00

Note: To obtain the latest BIOS and BMC firmware, visit support.dell.com.

Figure 1. Minimum BIOS/BMC requirements for x64-capable Dell PowerEdge servers

from 32-bit versions of Windows Server 2003 as well as Windows Server 2003 for 64-Bit Itanium®-based Systems.

However, features and security enhancements introduced in 32-bit Windows Server 2003 SP1⁴ are available on the x64 platform, and Dell PowerEdge servers based on Intel EM64T support features such as data execution prevention (DEP) and Server Balanced Processor Power and Performance.

DEP requires processors that support Execute Disable (XD) as well as the minimum Dell system BIOS revision (see Figure 4). Dell PowerEdge servers shipped since October 2004 have XD-supported processors.⁵ Server Balanced Processor Power and Performance support in Windows Server 2003 x64 Editions is designed to leverage the Enhanced Intel SpeedStep® Technology⁶ (EIST) on supported Intel processors. Support for this OS feature is dependent on the processor model, frequency,⁷ and stepping. Figure 5 lists the minimum BIOS requirements

Edition	Physical memory	Physical processors	General features
Windows Server 2003, Standard x64 Edition	Up to 32 GB	Up to 4	Domain controller, Microsoft Active Directory® directory service, Internet Connection Firewall (ICF), Internet Authentication Service (IAS), Internet Connection Sharing (ICS), IPv6, Distributed File System (DFS), Windows Management Instrumentation (WMI), Internet Information Services (IIS) 6.0, Dynamic Host Configuration Protocol (DHCP), Domain Name System (DNS), Windows Internet Naming Service (WINS), Remote Installation Service, Terminal Server, and virtual private network
Windows Server 2003, Enterprise x64 Edition	Up to 1 TB	Up to 8	All the preceding features of Windows Server 2003, Standard x64 Edition, plus eight-node Microsoft Cluster Service (MSCS) support, Terminal Server with Session Directory, Metadirectory Services support, Remote Storage, non-uniform memory access (NUMA), and Windows System Resource Manager (WSRM)

Figure 2. Feature comparison between Standard x64 Edition and Enterprise x64 Edition

Supported hardware	Required minimum	Recommended minimum
Intel Xeon™ with Intel EM64T	2.80 GHz	3.60 GHz
Intel Pentium® with Intel EM64T	3.20 GHz	3.60 GHz
Memory	512 MB	512 MB
Disk space	4 GB*	4 GB*

* Dell recommends a 12 GB system partition. The default setting for Dell factory-installed images and the Dell PowerEdge Installation and Server Management CD is 12 GB.

Figure 3. Hardware requirements for Windows Server 2003 x64 Editions

to leverage EIST capabilities in supported Dell servers. To determine whether the processors⁸ on a Dell PowerEdge server are EIST capable, administrators can take the following steps:

1. When the system is booting up, press F2 to enter system BIOS settings.
2. Under “CPU Information,” check for the Demand-Based Power Management option.
3. If the Demand-Based Power Management option is available and editable as “Disabled” or “Enabled,” all the processors on the server support EIST.
4. If the Demand-Based Power Management option is available and read-only, then at least one of the processors on the system does not support EIST.

Dell-supported peripherals for x64

Windows Server 2003 x64 Editions require that all drivers, including device drivers, be 64-bit drivers. Device drivers also need x64-specific decorators in the driver information (.inf) files.⁹ Dell worked with peripheral device vendors as well as Microsoft to help ensure availability of 64-bit drivers for peripheral devices supported on EM64T-based Dell PowerEdge servers. As a result, many of these drivers have native¹⁰ support in x64.

The following sections provide information about driver support for major peripheral devices such as network and storage adapters. The information includes:

- Minimum supported driver and firmware versions
- Whether specific peripherals have a native driver in the OS¹¹
- PowerEdge servers on which specific peripherals are supported

⁴For more information about the changes introduced by SP1, see “Guide to Deploying Microsoft Windows Server 2003 Service Pack 1 on Dell PowerEdge Servers” by Min-John Lee, Scott M. Callaway, and Jeff Ferris in *Dell Power Solutions*, May 2005.

⁵For more information about XD, visit www.intel.com/business/bss/infrastructure/security/xdbit.htm.

⁶For more information about Enhanced Intel SpeedStep technology, visit www.intel.com/cd/ids/developer/asm-na/eng/195910.htm.

⁷The minimum frequency requirement for EIST support varies with the processor model. For example, the current minimum frequency requirement for the Intel Nocona Xeon processor is 3.4 GHz.

⁸The Windows OS will not enable Server Balanced Processor Power and Performance unless all processors on the server are EIST capable.

⁹For more information about .inf file requirements that affect device installation on x64, visit www.microsoft.com/whdc/driver/install/64INF_reqs.mspx.

¹⁰Even if a device has a native driver in the OS, Dell recommends that administrators check for the latest drivers on support.dell.com.

¹¹Drivers that are included in the OS are listed as “native” in the location column; drivers that are not included in the OS are listed as “non-native.” Administrators can download non-native drivers and utilities from the Dell Web site (support.dell.com) or use the Dell PowerEdge Service and Diagnostic Utilities CD that shipped with the Dell server.

- Categorization of devices based on supported technology—that is, Peripheral Component Interconnect Extended (PCI-X) or PCI Express¹²

Dell PowerEdge server	Minimum BIOS revision required for XD support
PowerEdge SC1420	A00
PowerEdge SC1425	A00
PowerEdge 1800	A01
PowerEdge 1850	A02
PowerEdge 1855	A02
PowerEdge 2800	A02
PowerEdge 2850	A02
PowerEdge 6800	A00
PowerEdge 6850	A00

Figure 4. Minimum BIOS requirements for XD support on Dell PowerEdge servers

Dell PowerEdge server	Minimum BIOS revision required for EIST support
PowerEdge SC1420	EIST not supported
PowerEdge SC1425	A01
PowerEdge 1800	A01
PowerEdge 1850	A02
PowerEdge 1855	A02
PowerEdge 2800	A02
PowerEdge 2850	A02
PowerEdge 6800	A00
PowerEdge 6850	A00

Figure 5. Minimum BIOS requirements for EIST support on Dell PowerEdge servers

Note: The driver versions listed in this article were the minimum versions required to support Windows Server 2003 x64 Editions at press time. Dell recommends that administrators use the latest drivers, which can be found at support.dell.com.

Supported network components

Dell worked closely with two major vendors, Broadcom and Intel, to help ensure support for both embedded and add-on network peripherals on PowerEdge servers that support x64. Figure 6 provides additional information about x64 drivers for Intel and Broadcom network adapters supported on x64-capable Dell PowerEdge servers.

Advanced networking features: Teaming and bridging

Teaming enables a group of adapters to be configured together for various purposes such as increased throughput, load balancing, and fault tolerance. Teaming requires specialized software such as the Intel PROSet utility and the Broadcom Advanced Control Suite (BACS). The advanced intermediate drivers and base drivers required for teaming support are also part of these

specialized software packages.

Broadcom and Intel have made available versions of the BACS and PROSet utilities that are compatible with x64. Figure 7 lists the minimum driver versions of these utilities that support x64. BACS is a 32-bit application suite that can execute on both 32-bit and x64 versions of Windows Server 2003, but with different kernel-mode drivers. The Intel PROSet utility has two separate versions for 32-bit and x64 primarily because of changes in the names of the installation files. The latest versions of both BACS and PROSet are available on the Dell Web site at support.dell.com.

Bridging is also supported natively in Windows Server 2003 x64 Editions. A network bridge is designed to create connections between different types of network media, helping administrators to manage LAN segments and to create a single subnet for the entire network. Additional hardware devices, drivers, or software are not required for bridging on the x64 platform.

Product	Driver/version/location	Supported PowerEdge servers	Connection speed	Technology
Add-on network adapters				
Intel PRO/100 S	efe5b32e.sys/7.1.8.4/native	PowerEdge SC1420 PowerEdge SC1425	Fast Ethernet	PCI
Intel PRO/1000 MT	e1G5132e.sys/8.1.4.0/native	PowerEdge 1800 PowerEdge 1850	Gigabit Ethernet	PCI-X
Intel PRO/1000 MT Dual Port	e1G5132e.sys/8.1.4.0/native	PowerEdge 2800 PowerEdge 2850 PowerEdge 6800 PowerEdge 6850	Gigabit Ethernet	PCI-X
Intel PRO/1000 MF	e1G5132e.sys/8.1.4.0/native	PowerEdge 1800 PowerEdge 1850 PowerEdge 2800 PowerEdge 2850 PowerEdge 6800 PowerEdge 6850	Gigabit Ethernet	PCI-X
Intel PRO/1000 P Dual Port	e1G5132e.sys/8.4.21.0/non-native	PowerEdge SC1420 PowerEdge 1800 PowerEdge 1850 PowerEdge 2800 PowerEdge 2850	Gigabit Ethernet	PCI Express
Broadcom 5721	b57amd64.sys/7.107/non-native	PowerEdge SC1420 PowerEdge 1800 PowerEdge 1850 PowerEdge 2800 PowerEdge 2850 PowerEdge 6800 PowerEdge 6850	Gigabit Ethernet	PCI Express
Embedded network adapters				
Intel Gigabit Ethernet adapters	e1G5132e.sys/8.1.4.0/native	PowerEdge SC1420 PowerEdge SC1425 PowerEdge 1800 PowerEdge 1850 PowerEdge 1855 PowerEdge 2800 PowerEdge 2850	Gigabit Ethernet	PCI-X
Broadcom 5704	b57amd64.sys/7.80.0.0/native	PowerEdge 6800 PowerEdge 6850	Gigabit Ethernet	PCI-X

Figure 6. Minimum supported x64 driver revisions for embedded and add-on network peripherals

Adapter teaming utility	Driver/version/location
Intel PROSet	iansw32e.sys/8.01.05/non-native
Broadcom Advanced Control Suite	basps.sys/6.1.6/non-native

Figure 7. Teaming support on Windows Server 2003 x64 Editions

¹² For more information about Windows support for PCI Express technology, visit www.microsoft.com/whdc/system/bus/PCI/PCIe_Windows.msp.

Supported storage components

Dell worked closely with two major storage vendors, LSI Logic and Adaptec, to help ensure support for both embedded and add-on storage adapters on PowerEdge servers that support x64. LSI Logic and Adaptec are both original equipment manufacturers (OEMs) for Dell PowerEdge Expandable RAID Controllers (PERCs) and Cost Effective RAID Controllers (CERCs). Figure 8 provides information about x64 drivers for supported storage controllers. Windows Server 2003 x64 Editions also offer OS-based software RAID.¹³

Eighth-generation Dell PowerEdge servers offer both SCSI and Serial ATA (SATA) RAID adapters. Critical storage devices that do not have native drivers in Windows Server 2003 x64 Editions include SCSI-based storage devices—the Adaptec 39320 and the PERC 320, Dual Channel (PERC 320/DC)—and SATA-based storage devices—CERC SATA 2s and CERC SATA 6ch.

Native backup support and supported secondary storage components

Windows Server 2003 x64 Editions support NTBackup,¹⁴ a backup utility native in Windows Server 2003 that can be configured to help protect data from accidental loss if a system experiences hardware or storage media failure. NTBackup in x64 is a native 64-bit application and can be used to create a duplicate copy of data on a backup storage medium such as a hard drive, a removable disk, or an entire library of disks or tapes.

Secondary storage systems from Dell include Dell PowerVault™ stand-alone tape drives, tape autoloaders, and tape libraries. Figures 9 and 10 list the x64 drivers for these supported storage components.

Windows Server 2003 x64 Editions also support the native CD-burning software tool that allows data to be written to CD-R and CD-RW discs. This tool is implemented by the native Image Mastering Application Programming Interface (IMAPI) CD-burning COM Service.¹⁵ It has a limited feature set and is not supported by NTBackup to back up or restore files.

Product	Driver/version/location	Supported PowerEdge servers	Technology	Firmware version
Add-on SCSI RAID adapters				
PERC 4/SC	mraid35x.sys/6.37.2.64/native	PowerEdge 1800 PowerEdge 1850	PCI-X	351H
PERC 4/DC	mraid35x.sys/6.37.2.64/native	PowerEdge 1800 PowerEdge 1850 PowerEdge 2800 PowerEdge 2850 PowerEdge 6800 PowerEdge 6850	PCI-X	351H
PERC 4e/DC	mraid35x.sys/6.37.2.64/native	PowerEdge 1800 PowerEdge 1850 PowerEdge 2800 PowerEdge 2850 PowerEdge 6800 PowerEdge 6850	PCI Express	521H
PERC 320/DC	aac.sys/4.0.0.5815/non-native	PowerEdge SC1420 PowerEdge 1800	PCI-X	5813
Adaptec 39320 with host software RAID*	A320raid.sys/2.00.00.76/non-native	PowerEdge SC1420 PowerEdge SC1425 PowerEdge 1800	PCI-X	Not applicable
Embedded SCSI RAID adapters				
PERC 4e/Si	mraid35x.sys/6.44.3.64/native	PowerEdge 1850	PCI Express	521H
PERC 4e/Di	mraid35x.sys/6.44.3.64/native	PowerEdge 2800 PowerEdge 2850 PowerEdge 6800 PowerEdge 6850	PCI Express	521H
Add-on SATA RAID adapters				
CERC SATA 6ch	cercsr6.sys/4.1.1.7033/non-native	PowerEdge SC1420 PowerEdge SC1425 PowerEdge 1800	PCI-X	4.1.0.7403
Embedded SATA RAID adapters				
CERC SATA 2s with host software RAID*	aaarch.sys/6.00.00.076/non-native	PowerEdge SC1420 PowerEdge SC1425 PowerEdge 1800	PCI-X	Not applicable
Add-on SCSI adapters				
Adaptec 39160	adpu160m.sys/RTC_XP107/native	PowerEdge 1800 PowerEdge 1850 PowerEdge 2800 PowerEdge 2850 PowerEdge 6800 PowerEdge 6850	PCI-X	2.57.2s1
Embedded SCSI adapters				
LSI Logic 1020/1030	symmpi.sys/1.09.11.52/native	PowerEdge 1800 PowerEdge 1850 PowerEdge 2800 PowerEdge 2850 PowerEdge 6800 PowerEdge 6850	PCI-X	5.06.04

* The Adaptec 39320 SCSI RAID adapter—also known as the Adaptec U320 SCSI RAID 0 or 1 controller—and the CERC SATA 2s adapter provide driver-based RAID with RAID-0 and RAID-1 capabilities.

Figure 8. Minimum supported x64 driver revisions for embedded and add-on storage controllers

Installation process for Windows Server 2003 x64 Editions

Because Windows Server 2003 x64 Editions differ significantly from other 32-bit and 64-bit Microsoft offerings, they require a

¹³ For more information about OS-based software RAID, visit www.microsoft.com/technet/prodtechnol/windowsserver2003/library/ServerHelp/1279a8c6-1b47-482d-bc00-4b4f91ec6412.mspx.

¹⁴ For more information about native backup support available on Windows Server 2003, visit www.microsoft.com/technet/prodtechnol/windowsserver2003/library/ServerHelp/7803d7f2-390c-42fe-9171-c825c4b11668.mspx.

¹⁵ For more information about the native Windows Server 2003 x64 CD-burning software utility, visit support.microsoft.com/default.aspx?scid=kb;en-us;317525.

Product	Driver/version/location	Supported PowerEdge servers
PowerVault 100T Travan40	qic157.sys/5.2.3790/native	PowerEdge SC1420 PowerEdge 1800
PowerVault 100T DDS4	4mmdat.sys/5.2.3790/native	PowerEdge 6800 PowerEdge 6850
PowerVault 100T DAT72	Pvdatw2k.sys/1.11.0.0/ non-native	PowerEdge SC1420 PowerEdge 1800 PowerEdge 1850 PowerEdge 2800 PowerEdge 2850 PowerEdge 6800 PowerEdge 6850
PowerVault 110T DLT VS 80	dlttape.sys/5.2.3790/native	PowerEdge 2800 PowerEdge 2850 PowerEdge 6800 PowerEdge 6850
PowerVault 110T LTO-1	ltotape.sys/5.2.3790/native	PowerEdge 1800 PowerEdge 1850 PowerEdge 2800 PowerEdge 2850 PowerEdge 6800 PowerEdge 6850
PowerVault 110T LTO-2	dtapex64.sys/6.0.68/non-native	
PowerVault 110T LTO-2-L	pvltt.sys/1.9.0.0/non-native	
PowerVault 110T LTO-3	dtapex64.sys/6.0.68/non-native	
PowerVault 110T DLT VS 160	Qdltx64.sys/3.0.1.0/non-native	
PowerVault 110T SDLT 320	qdltx64.sys/3.0.1.0/non-native	

Figure 9. Minimum supported x64 driver revisions for stand-alone PowerVault tape drives

fresh installation (see Figure 11).¹⁶ However, the installation process for Windows Server 2003 x64 Editions on supported Dell PowerEdge servers is similar to that of the 32-bit version of Windows Server 2003. Dell supports three ways to install Windows Server 2003 x64 Editions: clean installation using the Windows Server 2003 x64 CD, clean installation using the Dell PowerEdge Installation and Server Management CD, and Dell factory installation.¹⁷

Windows Server 2003 x64 CD

For a clean installation of Windows Server 2003 x64 Editions on Dell PowerEdge servers, administrators should perform the following steps sequentially:

- 1. Prepare BIOS and firmware.** A clean installation begins with an upgrade of the Dell server’s BIOS, baseboard management controller (BMC) firmware, and primary storage controller firmware. Before installing x64, administrators should ensure that they have the appropriate BIOS, BMC firmware, and primary storage controller firmware as discussed in this article. Administrators should either download these components from the Dell Web site (support.dell.com) or use the latest Dell PowerEdge Service and Diagnostic Utilities CD that supports Windows Server 2003 x64 Editions (see the “Dell OpenManage support for Windows Server 2003 x64 Editions” section in this article for more information). Depending on the server and storage adapters on the server, an F6 installation¹⁸ may be required to ensure that the device drivers for the boot drives are loaded. See the “Supported storage components” section in this article for more information about which devices can be loaded with the native drivers and which devices require non-native third-party drivers.
- 2. Install the x64 OS.** Administrators can perform a clean installation using the Windows Server 2003 x64 OS installation CD.

Product	Supported drives	Driver/version/location	Supported PowerEdge servers
PowerVault 112T enclosure	DDS4/DLT VS 80/DLT VS 160	Depends on the tape drive carried	PowerEdge 1850, PowerEdge 2800, PowerEdge 2850, PowerEdge 6800, PowerEdge 6850
PowerVault 114T enclosure	DAT72/DLT VS 160/SLDT 320/LTO-1/LTO-2/ LTO-2-L/LTO-3	Depends on the tape drive carried	PowerEdge 1800, PowerEdge 1850, PowerEdge 2800, PowerEdge 2850, PowerEdge 6800, PowerEdge 6850
PowerVault 122T autoloader	DLT VS 80/LTO-1/LTO-2/SDLT 320	powerfil.sys/5.2.3790/native* (if the tape drive carried has native support)	PowerEdge 1800, PowerEdge 1850, PowerEdge 2800, PowerEdge 2850, PowerEdge 6800, PowerEdge 6850
PowerVault 132T library	LTO-2/LTO-3/SDLT 320	pv132t.sys/6.0.0.0/non-native*	
PowerVault 136T library	LTO-1/LTO-2/SDLT 320	adicsc.sys/5.2.3790/native* (if the tape drive carried has native support) pv136t.sys/6.0.0.0/non-native* (if the tape drive carried does not have native support)	PowerEdge 1850, PowerEdge 2800, PowerEdge 2850, PowerEdge 6800, PowerEdge 6850

* This information pertains to the driver/version/location of the autoloader or library; the driver/version/location of the tape drive depends on the particular tape drive being used.

Figure 10. Minimum supported x64 driver revisions for PowerVault enclosures, autoloaders, and libraries

¹⁶ No upgrade path is available to Windows Server 2003 x64 Editions from any 32-bit or 64-bit Windows OS. Attempting to run the x64 version of the WINNT32 setup program in a 32-bit OS environment with the intention of upgrading from a 32-bit platform to x64 will result in the “WINNT32.exe is not a valid Win32 application” informational message. However, an upgrade path is available from Windows Server 2003, Standard x64 Edition, to Windows Server 2003, Enterprise x64 Edition.

¹⁷ Alternate solutions from Microsoft for installing Windows Server 2003 x64 Editions include Unattended installation using unattend.txt and winnt.sif; System Preparation Tool (Sysprep) image deployment; and Remote Installation Service (RIS) deployment. *Note:* To deploy x64 using RIS, the RIS server must be running Windows Server 2003 SP1 or later.

¹⁸ *F6 installation* refers to pressing F6 during the OS installation to install third-party storage drivers for devices that do not have native drivers on the Windows Server 2003 x64 CD. Windows Server 2003 x64 Editions support adding non-native drivers via F6.

3. **Verify device drivers.** After installing the x64 OS, administrators must use the Device Manager to verify that device drivers have installed with no problems and are working correctly. A yellow exclamation point next to a device in Device Manager usually indicates that a driver is needed. Administrators can download the necessary drivers from the Dell Web site (support.dell.com) or from the Dell PowerEdge Service and Diagnostic Utilities CD.
4. **Install x64 versions of Dell tools and software.** Administrators complete the installation process by installing x64 versions of Dell tools and software, such as the Dell OpenManage components. See the “Dell OpenManage support for Windows Server 2003 x64 Editions” section in this article for more information.

Microsoft supports dual-boot configuration that includes Windows Server 2003 x64 Editions and 32-bit Windows, allowing administrators to boot into either OS. However, to help protect against potential application incompatibility issues, data loss, or system instability in a dual-boot configuration, Microsoft recommends that administrators install the 32-bit OS and x64 on separate partitions and that they install the 32-bit OS before installing x64.

Dell PowerEdge Installation and Server Management CD

The Dell PowerEdge Installation and Server Management CD¹⁹ guides administrators—via easy-to-use graphical user interface (GUI) menus—through a clean OS installation on a Dell PowerEdge server. However, this method still requires using the Windows Server 2003 x64 CD for the OS software.

Dell strongly recommends that administrators use the Dell PowerEdge Installation and Server Management CD for the OS installation process when the factory installation option is not chosen. In addition to simplifying the installation process with easy-to-use GUI menus, the Dell CD provides the latest drivers for all supported devices on Dell PowerEdge servers.

The Dell OpenManage CD kit that ships with Dell servers includes the Dell PowerEdge Installation and Server Management CD. This kit also contains the Dell PowerEdge Service and Diagnostic Utilities CD that contains drivers and utilities required to support Windows Server 2003 x64 Editions on PowerEdge servers.

Dell factory installation

Dell plans to offer factory installation for Windows Server 2003 x64 Editions later in 2005. This option will allow enterprises to have the OS installed during the Dell server manufacturing process. A server purchased from Dell with x64 pre-installed at the factory will have the latest available device drivers and firmware.

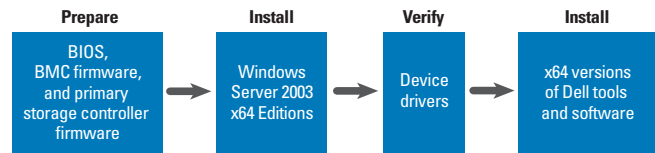


Figure 11. The clean installation process for Windows Server 2003 x64 Editions

Dell OpenManage support for Windows Server 2003 x64 Editions

The Dell OpenManage infrastructure is a systems management application suite that offers proactive monitoring, diagnostics, notification, and remote access for Dell PowerEdge servers. Dell OpenManage 4.4 and later will support Windows Server 2003 x64 Editions. The Dell OpenManage application suite for Windows Server 2003 x64 Editions will continue to be 32-bit (running in WOW64 mode) except for the 64-bit kernel-mode drivers. Dell OpenManage 4.4 will include Dell OpenManage Storage Services (OMSS), which is the management utility for storage components. OMSS will be the only²⁰ storage management software from Dell that supports Windows Server 2003 x64 Editions.

A 64-bit platform that supports 32-bit systems

By following the guidelines and procedures outlined in this article, administrators can deploy Microsoft Windows Server 2003 x64 Editions on Intel EM64T-based Dell PowerEdge servers. The 64-bit extended architecture of these servers and the support for both 32-bit and 64-bit applications provided by Windows Server 2003 x64 Editions can enable organizations to begin the migration to 64-bit platforms while still using their existing 32-bit systems. The coexistence of 32-bit and 64-bit technology enables organizations to maximize their IT investments while preparing for the future. ☞

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¹⁹ Refer to the Dell PowerEdge Documentation CD for more information about the contents of the Dell PowerEdge Installation and Server Management CD and installation best practices.

²⁰ The legacy Dell OpenManage Array Manager storage management tool is nearing end of life and thus will not be supported on Windows Server 2003 x64 Editions.