

Migrating from Microsoft Windows 2000 Server to Windows Server 2003 with SP1 on Dell PowerEdge Servers

Organizations currently running Microsoft® Windows® 2000 Server can benefit from upgrading to the improved security, stability, productivity, and integrated features of the Microsoft Windows Server™ 2003 family of operating systems. Furthermore, Windows Server 2003 with Service Pack 1 (SP1) offers enhanced file, print, application, Web, and communication services. This article explains best practices for determining system requirements and upgrading to Windows Server 2003 with SP1.

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Service Pack 1 (SP1) for Microsoft Windows Server 2003 is the first cumulative service pack upgrade for the Windows Server 2003 OS. Although many of the security enhancements in SP1 were already introduced in Microsoft Windows XP Service Pack 2 (SP2) for the client environment, the server environment is characterized by specific traits that necessitated the SP1 release for Windows Server 2003.¹ SP1 introduces certain features that require hardware-level support in the server, including Data Execution Prevention (DEP) and Demand-Based Switching (DBS).

Dell supports Windows Server 2003 with SP1 on server platforms that support the initial Windows Server 2003 release. The Windows Server 2003 with SP1 family includes the following 32-bit OS versions:

- Windows Server 2003, Standard Edition
- Windows Server 2003 Enterprise Edition
- Windows Server 2003, Datacenter Edition
- Windows Server 2003, Web Edition
- Windows Small Business Server 2003

Identifying the supported upgrade paths

A first step in choosing the most suitable OS is to determine the nearest equivalent to the OS that the system is currently running. Windows Server 2003, Web Edition, is designed for rack-mounted Web support deployments. However, because this OS edition was introduced in the Windows Server 2003 family, it does not have an equivalent in the Windows 2000 Server family of operating systems.

¹ Detailed information about the changes and enhancements in Service Pack 1 can be found on the Microsoft Windows Server 2003 Web site at www.microsoft.com/windowsserver2003.

OS currently being used	Can be upgraded to:				
	Windows Server 2003, Standard Edition, with SP1	Windows Server 2003, Enterprise Edition, with SP1	Windows Server 2003, Datacenter Edition, with SP1	Windows Server 2003, Web Edition, with SP1	Windows Small Business Server 2003 with SP1
Windows 2000 Server	✓	✓			✓
Windows 2000 Advanced Server		✓			
Windows 2000 Datacenter Server			✓		
Windows Server 2003, Standard Edition	✓	✓			✓
Windows Server 2003, Enterprise Edition		✓			
Windows Server 2003, Datacenter Edition			✓		
Windows Server 2003, Web Edition				✓	

Figure 1. Supported upgrade paths to Windows Server 2003 with SP1

A Windows server OS can be upgraded only to an equivalent or higher-level OS (see Figure 1). Administrators cannot downgrade to a less powerful OS because some functionality may be lost in the process. This means that administrators cannot migrate from Windows 2000 Server, Enterprise Edition, (or other server products in the Windows 2000 family) to Windows Server 2003, Web Edition, without removing the earlier OS and performing a new, or *clean*, installation. Additionally, administrators cannot upgrade to Windows Server 2003, Datacenter Edition, because it is available only as an original equipment manufacturer (OEM) clean installation.²

Planning for migration to Windows Server 2003 with Service Pack 1

Depending on when customers purchased their Dell PowerEdge servers, they belong to one of the following groups. Customers should refer to the appropriate section for instructions related to their specific scenario.

Group 1. These are customers who purchased Dell PowerEdge servers before 2004 with the Windows 2000 Server with SP4 image installed at a Dell manufacturing facility. These customers also received the OEM version of the Windows 2000 Server with SP4 CD media from Dell. (The label on the side of the server shows the license and product key for Windows 2000 Server). Because of licensing agreements, these customers cannot upgrade their servers to Windows Server 2003 OEM media. However, they have the option of purchasing Windows Server 2003 retail media and then performing the migration (performing a clean OS installation and restoring the data).

Group 2. These are customers who purchased Dell PowerEdge servers in or after 2004 with the Windows 2000 Server with SP4 (OEM) image installed at the Dell manufacturing facility. However, these customers also received Windows Server 2003 SP0 CD media. To be eligible for this program, customers must have previously received a Windows 2000 Server–installed PowerEdge server along with the Windows 2000 Server media. These customers have the option of either upgrading to Windows Server 2003 SP0 or performing a clean installation using the Windows Server 2003 SP0 media that was shipped to them.

If Group 2 customers want to upgrade to Windows Server 2003 with SP1, they can either apply SP1 on the Windows Server 2003 SP0 server or purchase retail media of Windows Server 2003 with SP1 and perform a clean installation.

Group 3. These are customers who purchased Dell PowerEdge servers with the Windows 2000 Server with SP4 (OEM) image installed at the Dell manufacturing facility after Windows Server 2003 with SP1 was validated and supported by Dell. However, these customers also received Windows Server 2003 with SP1 CD media along with the server. To be eligible for this program, customers must have previously received a Windows 2000 Server–installed PowerEdge server along with the Windows 2000 Server media. They have the option of either upgrading to Windows Server 2003 with SP1 or performing a clean installation using the Windows Server 2003 with SP1 media that was shipped to them.

Note: Customers can determine whether a server is running an OEM version of Windows simply by opening System Properties and looking at the “Registered to:” section on the General tab. The serial number has “OEM” in it if the server is running an OEM version.

²For more information about upgrade paths supported by Microsoft, visit www.microsoft.com/windowsserver2003/evaluation/whyupgrade/supportedpaths.msp.

Preparing the system before migrating to Windows Server 2003 with Service Pack 1

Before migrating to Windows Server 2003, administrators should make sure that the server meets the recommended system requirements³ and that all hardware and software components are compatible with the OS.

Hardware compatibility

As part of confirming hardware compatibility, administrators should verify that they have obtained updated firmware, hardware device drivers, and the latest system BIOS, which are available at the Dell support Web site (support.dell.com).⁴ If the storage controller driver is not included in the Windows Server 2003 media, then administrators must download the driver from the Dell support Web site, place it in the floppy drive of the server, and press F6 during the start of the installation. They should then follow the instructions on the screen to supply the driver, so the setup program can recognize the hard drives.

Application compatibility

Before proceeding with the upgrade, administrators should make sure that all applications to be run on Windows Server 2003 are supported by the OS. Dell OpenManage 4.4 is fully tested and supported on Windows Server 2003 with SP1. Best practices recommend using the latest Dell OpenManage version, which can be downloaded from the Dell support Web site.

If a server is running Dell OpenManage 4.3 or earlier, administrators should first upgrade to Dell OpenManage 4.4 or later before upgrading to Windows Server 2003 with SP1. Included in Dell OpenManage 4.4, Dell OpenManage Server Assistant (DSA) 8.6 supports a clean installation of Windows Server 2003 with SP1 on Dell PowerEdge servers. Dell includes DSA with PowerEdge servers and makes it available through the Dell OpenManage Subscription Service. The Dell OpenManage Server Update Utility in Dell OpenManage 4.4 also contains system BIOS updates, firmware, drivers, and utilities that administrators need to deploy and manage PowerEdge servers.

Product key and activation requirements

Depending on how customers obtained the Windows Server 2003 media, they belong to one of the following groups. Customers should refer to the appropriate section for instructions related to their specific scenario.

Group 1. These are customers who purchased retail media of Windows Server 2003 (either SP0 or SP1). They must have received a product ID (PID) along with the media. These customers need to

use this PID when prompted during the installation. They are also required to have the server image activated from Microsoft after completing the upgrade.

Group 2. These are customers who received Windows Server 2003 SP0 media from Dell, along with a server. To complete the upgrade using this media, customers need to use the PID, which is provided in the `txtsetup.sif` file on the Windows Server 2003 SP0 CD. They can explore the CD and go to the `\I386\txtsetup.sif` file to obtain the product key. These customers are required to have the server image activated after completing the upgrade.

Note: A product key is not needed if customers plan to perform a clean installation of Windows Server 2003 SP0 on the server. Also, activation is not required for a clean installation.

Group 3. These are customers who received Windows Server 2003 with SP1 media from Dell, along with a server. To complete the upgrade using this media, customers need to use the product key, which appears on a label on the side of the server. They should take note of the product key and have it with them before starting the upgrade. These customers are required to have the server image activated after completing the upgrade.

Note: A product key and activation are necessary even if customers plan to perform a clean installation of Windows Server 2003 with SP1.

Checklist before starting the migration

Best practices recommend that enterprise IT organizations perform the following tasks before migrating Dell PowerEdge servers to Windows Server 2003:

- Identify the appropriate customer group.
- Make sure the system requirements are met.
- Make sure the applications are compatible with Windows Server 2003.
- Have the CD media and the PID available.
- Back up the server's existing data.

Migrating to Windows Server 2003 with Service Pack 1

Dell supports Windows Server 2003 with SP1 and hence recommends that all customers using Windows run Windows Server 2003 with SP1 on their servers. From a Windows 2000 Server environment, migration to Windows Server 2003 is relatively straightforward. Two options are available: direct upgrade and clean installation.

Performing a direct upgrade

The ease of performing an upgrade rather than a clean installation can make sense, especially for small organizations. With an

³To determine the minimum and recommended system requirements to run the selected edition of Windows Server 2003, visit www.microsoft.com/windowsserver2003/evaluation/sysreqs/default.mspx.

⁴For more information about minimum supported versions of Dell system BIOS, firmware, and RAID drivers for Windows Server 2003, visit support.dell.com/support/edocs/software/ws2k3s1/en/imp_info/impinfn.pdf.



Figure 2. Window Server 2003 CD welcome screen

upgrade, the configuration is generally simpler than a clean installation; and existing users, settings, groups, rights, and permissions are retained. An upgrade also does not require reinstalling files and applications.

To perform a direct upgrade, administrators should take the following steps:

1. As with any major changes to a hard disk, back up the system before beginning the upgrade.
2. Upgrade the system BIOS, firmware, and drivers. The latest versions can be downloaded from support.dell.com.
3. Upgrade Dell OpenManage to version 4.4 or later. Dell OpenManage software can be downloaded from support.dell.com.
4. For other custom applications, verify the compatibility of the application with Windows Server 2003 with SP1 before proceeding with the upgrade.
5. Place the Windows Server 2003 with SP1 CD in the CD drive and select the upgrade option—"Install Windows Server 2003"—displayed on the screen when the CD loads (see Figure 2). Do not boot directly from the Windows Server 2003 CD.

Performing a clean installation

Best practices recommend performing a clean installation rather than an upgrade—especially for large organizations. A clean installation also is preferable if consolidation of the Windows 2000 Server infrastructure using Windows Server 2003 is the primary objective.

Hard disk efficiency can be improved by reformatting hard disks during a clean installation. In addition, reformatting allows administrators to modify the size or number of disk partitions, to

make them match OS and organization requirements, if any, as closely as possible.


To practice careful configuration management of a high-availability server, administrators can perform a clean installation on that server instead of an upgrade. This is especially true for servers on which the OS has been upgraded several times in the past.

For detailed steps on performing a clean OS installation using the Windows Server 2003 CDs, see “Microsoft Windows Server 2003 Standard, Enterprise, and Web Editions: Using the Windows Server 2003 CDs to Perform a Clean Installation of the Operating System” at support.dell.com/support/edocs/software/ws2k3s1/en/ins_osc/WS2K3bk0.pdf.

Migrating Microsoft Active Directory information

Microsoft Active Directory* Migration Tool (ADMT) can be used to help simplify the process of migrating users, groups, and computer accounts from Windows 2000 Server with SP4 to Windows Server 2003. ADMT is part of the Windows Server 2003 Deployment Kit.⁵

Enhancing the performance of the enterprise

Upgrading to Windows Server 2003 with Service Pack 1 can prove beneficial to enterprises because SP1 integrates improved file, print, application, Web, and communication services compared to earlier versions of Windows server operating systems. Organizations that currently run Microsoft Windows 2000 Server should consider migrating to Windows Server 2003 with SP1 for enhanced data center efficiency and a robust platform for mission-critical applications. 

References

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FOR MORE INFORMATION

OS documentation for Dell servers:
www.dell.com/ostechsheets

⁵ For more information, see the *Microsoft Windows Server 2003 Deployment Guide* at www.microsoft.com/resources/documentation/windowsserv/2003/all/deployguide/en-us/default.asp.