Implementing Microsoft Windows Server 2003 with Service Pack 1 on ProLiant servers

integration note, 2nd edition

Abstract

This integration note describes the level of support available for Microsoft® Windows® Server 2003 Service Pack 1 (SP1):

- Supported configurations of ProLiant servers
- Recommended system configuration and server platforms
- Supported software, storage options, and network adapters
- Procedures for new installations
- Known issues with workarounds

This paper describes the level of support available for Microsoft Windows Web Server, Standard Server, and Enterprise Server editions of the Windows Server 2003 family with Service Pack 1. It does not describe support for Itanium® 2-based systems.

Additionally, the focus of this document does not include performing upgrades to Windows Server 2003. For information of this nature, refer to the integration note titled "Upgrading to Microsoft Windows Server 2003 with Service Pack 1 on ProLiant servers." This document and others pertaining to Windows Server 2003 can be found at www.hp.com/go/windows.

Introduction to Windows Server 2003 and Service Pack 1

Windows Server 2003 is an extension of the Windows 2000 operating system (OS) environment developed to enhance the customer experience and to improve the overall usability and deployment. With few exceptions, application code developed for use under Windows 2000 will work with the Windows Server 2003 family of operating systems.

Microsoft provides Windows Server 2003 in both 32-bit and 64-bit editions. The 64-bit edition supports the Intel® Itanium® and Intel ® Itanium® 2 processors.

This paper covers the 32-bit editions of Windows Server 2003 running on ProLiant servers based on the x86 architecture.

Microsoft delivered Windows Server 2003 Service Pack 1 to enhance security, increase reliability, and simplify administration of Windows Server 2003. Windows Server 2003 Service Pack 1 provides refinements and supplies cumulative system patches to Windows Server 2003.

Supported configurations

Windows Server 2003 SP1 should load and run on any ProLiant server that meets the recommended hardware configuration established by Microsoft.

Carefully review this document for the recommended system configuration and possible issues you might encounter. Performing due diligence optimizes your resources and testing scenarios. Do not use this paper as your sole source of information. In addition to the websites mentioned throughout this paper, you might also want to visit the Windows Server 2003 support page at http://h18004.www1.hp.com/products/servers/software/microsoft/OS/Windows2003_support.html and the Microsoft website at www.microsoft.com/.

Recommended system configuration

Table 1 lists the recommended minimum system configuration established by Microsoft for Windows Server 2003. These requirements do not change for applying Windows server 2003 SP1. The recommendations listed here pertain to the Windows Server 2003 operating system only and do not include the requirements for software applications that run on your system. Please check your application requirements to make certain your system can run both the operating system and your software. Most software vendors have this information posted to their website.

Table 1. Recommended minimum system configuration[2]

Parameter	Web Edition	Standard Edition	Enterprise Edition
Processor	550 MHz	550 MHz	733 MHz
RAM	256 MB	256 MB	256 MB
Monitor	VGA or higher resolution	VGA or higher resolution	VGA or higher resolution
Available disk space[1]	1.5 GB	1.5 GB	1.5 GB

Note 1: Available disk space refers to free disk space on the partition to contain the system files. Additional space is required if you copy the Windows Server 2003 CD contents to the hard disk during installation.

Note 2: For the latest system requirements for each edition of the Windows Server 2003 family, visit www.microsoft.com/windowsserver2003/evaluation/sysreqs/default.mspx.

Server platforms

Table 2 lists the ProLiant servers, ROM version, and ROM date that support Windows Server 2003 SP1. Refer to the following resources on the Web to assist in determining the ROM version and family of your ProLiant server.

- System ROM family code and version: http://h18007.www1.hp.com/support/files/server/us/romhowto.html
- Latest ROMPaq downloads: http://h18023.www1.hp.com/support/files/server/us/romtabl.html
- Software and drivers: http://h18007.www1.hp.com/support/files/server/us/index.html
- Windows on ProLiant support matrix: http://h10018.www1.hp.com/wwsolutions/windows/index.html

Table 2. Supported system platforms

Server platform	ROM family	Minimum ROM date
ProLiant BL10e[3]	I03	02/17/03
ProLiant BL10e G2[3]	I07	08/12/03
ProLiant BL20p[3]	I01	01/31/03
ProLiant BL20p G2[3, 4]	I04	09/16/04
ProLiant BL20p G3[3]	I08	03/02/05
ProLiant BL25p[3]	A02	04/14/05
ProLiant BL30p[3, 4]	I10	09/16/04
ProLiant BL35p[3]	A03	03/09/05
ProLiant BL40p[3, 4]	I02	09/15/04

Server platform	ROM family	Minimum ROM date
ProLiant BL45p[3]	A02	03/09/05
ProLiant CL380	P17	12/18/02
ProLiant DL140	DL140	11/25/04
ProLiant DL140 G2	DL140G2	08/15/05
ProLiant DL145	DL145	03/22/05
ProLiant DL145 G2	DL145G2	05/05/05
ProLiant DL320	D05	11/15/02
ProLiant DL320 G2[3, 4]	D13	09/15/04
ProLiant DL320 G3[3]	D18	03/04/05
ProLiant DL360	P21	11/15/02
ProLiant DL360 G2[3]	P26	02/07/03
ProLiant DL360 G3[3, 4]	P31	09/15/04
ProLiant DL360 G4[3]	P52	12/02/04
ProLiant DL360 G4p[3]	P54	01/12/05
ProLiant DL380 (667-1000 MHz)	P17	12/18/02
ProLiant DL380 G2 (1133 MHz and greater)	P24	11/15/02
ProLiant DL380 G3[3, 4]	P29	09/15/04
ProLiant DL380 G4[3]	P51	12/02/04
ProLiant DL380 G4 Packaged Cluster[3]	P51	12/02/04
ProLiant DL385[3]	A05	04/29/05
ProLiant DL560[3, 4]	P30	09/15/04
ProLiant DL580	P20	12/17/02
ProLiant DL580 G2[3, 4]	P27	09/15/04
ProLiant DL580 G3[3]	P29	09/15/04
ProLiant DL585[3]	A01	03/09/05
ProLiant DL740[3, 4]	P47	09/15/04
ProLiant DL760[3]	P46	12/15/02
ProLiant DL760 G2[3, 4]	P44	09/15/04
ProLiant ML110	ML110	07/16/04
ProLiant ML110 G2	ML110G2	08/11/05
ProLiant ML150	AMI	05/26/04

Server platform	ROM family	Minimum ROM date
ProLiant ML150 G2	ML150G2	01/28/05
ProLiant ML310[3, 4]	D12	09/15/04
ProLiant ML310 G2	W01	02/15/05
ProLiant ML330	D03	11/15/02
ProLiant ML330 G2[3]	D10	02/17/03
ProLiant ML330e	D06	11/15/02
ProLiant ML350 (1 GHz)	D04	11/15/02
ProLiant ML350 (600, 733, 800, 866, 933 MHz)	D02	11/15/02
ProLiant ML350 G2 (1133 MHz and greater)[3]	D11	02/17/03
ProLiant ML350 G3[3, 4]	D14	09/15/04
ProLiant ML350 G4[3]	D17	12/02/04
ProLiant ML350 G4p[3]	D19	02/21/05
ProLiant ML370 (667-1000 MHz)	P17	12/18/02
ProLiant ML370 G2 (1133 MHz and greater)	P25	11/15/02
ProLiant ML370 G3[3, 4]	P28	09/15/04
ProLiant ML370 G4[3]	P50	12/02/04
ProLiant ML530	P19	12/18/02
ProLiant ML530 G2[3, 4]	P22	09/15/04
ProLiant ML570	P20	12/17/02
ProLiant ML570 G2[3, 4]	P32	09/15/04
ProLiant ML570 G3[3]	P37	02/28/05
ProLiant ML750	P45	12/15/02
ProLiant 3000 (Pentium III Processor)	P09	11/08/00
ProLiant 5500 (Pentium III Xeon Processor)	P12	11/08/00
ProLiant 6000 (Pentium III Xeon Processor)	P40	12/27/99
ProLiant 6400R (Pentium III Xeon Processor)	P11	11/08/00

Server platform	ROM family	Minimum ROM date
ProLiant 6500 (Pentium III Xeon Processor)	P11	11/08/00
ProLiant 7000 (Pentium III Xeon Processor)	P40	12/27/99
ProLiant 8000	P41	12/15/02
ProLiant 8500	P42	12/15/02

Note 3: The ROM for this ProLiant server supports the Microsoft® Emergency Management Service console feature in Windows Server 2003.

Note 4: This System ROM upgrade is considered a critical fix and is required to correct Issue 1 in the "Known issues and workarounds" section of this paper. HP strongly recommends immediate application of required critical fixes. Neglecting to perform the required action could leave the server in an unstable condition, which could potentially result in sub-optimal server performance, server lockups or failures, ungraceful server shutdowns, hardware damage, or data corruption or loss. By disregarding this notification, the customer accepts the risk of incurring future related events.

Supported software

Table 3 lists supported ProLiant utilities, drivers, and other value-add software and their corresponding version needed for Windows Server 2003 SP1.

Table 3. Supported ProLiant value-add software

Utility	Minimum version	Location
Array Configuration Utility for Windows 2000	2.90.65.0	http://h18023.www1.hp.com/support/files/server/us/locate/2012.html
PCI Hot Plug Filter Driver	6.1.2.5	http://h18023.www1.hp.com/support/files/server/us/locate/2001.html
ProLiant Support Pack for Microsoft Windows Server 2003[4]	7.30A	http://h18023.www1.hp.com/support/files/server/us/locate/3376.html
System Configuration Utility	2.58	http://h18023.www1.hp.com/support/files/server/us/locate/1950.html

Note 5: Some elements of the ProLiant Support Pack for Microsoft Windows Server 2003 are superseded by the components residing on the Windows Server 2003 SP1 media or are otherwise supported for use with Windows Server 2003 SP1. For more information, refer to the "Known issues and workarounds" section of this paper.

Supported storage options

Table 4 lists supported ProLiant storage options and recommended driver revisions needed to interface with Windows Server 2003 SP1.

Table 4. Supported ProLiant storage options

Option	Driver	Location	Digital Signature
HP 4 GB Hard Disk Drives	DISK.SYS	Windows Server 2003 SP1 CD	Yes
HP 9 GB Hard Disk Drives	DISK.SYS	Windows Server 2003 SP1 CD	Yes
HP 18 GB Hard Disk Drives	DISK.SYS	Windows Server 2003 SP1 CD	Yes
HP 36 GB Hard Disk Drives	DISK.SYS	Windows Server 2003 SP1 CD	Yes
HP 72 GB Hard Disk Drives	DISK.SYS	Windows Server 2003 SP1 CD	Yes
HP 144 GB Hard Disk Drives	DISK.SYS	Windows Server 2003 SP1 CD	Yes
36.4 GB 10,000 rpm Hard Disk Drives	DISK.SYS	Windows Server 2003 SP1 CD	Yes
72.8 GB 10,000 rpm Hard Disk Drives	DISK.SYS	Windows Server 2003 SP1 CD	Yes
146.8 GB 10,000 rpm Hard Disk Drives	DISK.SYS	Windows Server 2003 SP1 CD	Yes
18.2 GB 15,000 rpm Hard Disk Drives	DISK.SYS	Windows Server 2003 SP1 CD	Yes
36.4 GB 15,000 rpm Hard Disk Drives	DISK.SYS	Windows Server 2003 SP1 CD	Yes
72.8 GB 15,000 rpm Hard Disk Drives	DISK.SYS	Windows Server 2003 SP1 CD	Yes
Compaq 4/8-GB SLR Tape Drive	TANDQIC.SYS	Windows Server 2003 SP1 CD	Yes
Compaq 4x-32x CD-ROM Drives	CDROM.SYS	Windows Server 2003 SP1 CD	Yes
Compaq AIT 100/50/35 Tape Drives	SONYAIT.SYS	Windows Server 2003 SP1 CD	Yes
Compaq DDS2/3/4 Tape Drives	4MMDAT.SYS	Windows Server 2003 SP1 CD	Yes
HP DDS2/3/4 Tape Drives	4MMDAT.SYS	Windows Server 2003 SP1 CD	Yes
HP DAT72 Tape Drive	HPDAT.SYS	For 32-bit: SP21969 For 64-bit: SP21970	Yes
LTO 215/230 Ultrium-1 Tape Drives	LTOTAPE.SYS	Windows Server 2003 SP1 CD	Yes
LTO Ultrium-2 460 Tape Drive	HPLTO.SYS	For 32-bit: SP21966 For 64-bit: SP21967	Yes
Compaq VS80	DLTTAPE.SYS	Windows Server 2003 SP1 CD	Yes
HP SureStore VS80	DLTTAPE.SYS	Windows Server 2003 SP1 CD	Yes
Compaq 4/8 GB Autoloader	DDSMC.SYS	Windows Server 2003 SP1 CD	Yes

Option	Driver	Location	Digital Signature
Compaq DDS2 4/16 GB Autoloader	DDSMC.SYS	Windows Server 2003 SP1 CD	Yes
Compaq DDS3 12/24 GB DAT Autoloader	DDSMC.SYS	Windows Server 2003 SP1 CD	Yes
Compaq DDS4 8 Cassette Autoloader	DDSMC.SYS	Windows Server 2003 SP1 CD	Yes
HP DDS4 6 Cassette Autoloader	DDSMC.SYS	Windows Server 2003 SP1 CD	Yes
StorageWorks 35GB AIT Autoloader	POWERFIL.SYS	Windows Server 2003 SP1 CD	Yes
StorageWorks 8/16 Cartridge DLT Autoloader	ADICSC.SYS	Windows Server 2003 SP1 CD	Yes
StorageWorks SSL1016 Autoloader	HP116N32.SYS	For 32-bit: SP21971	Yes
Compaq DLT 15 Cartridge Library Model 15/30	HPMC.SYS	Windows Server 2003 SP1 CD	Yes
Compaq DLT 15 Cartridge Library Model 20/40	HPMC.SYS	Windows Server 2003 SP1 CD	Yes
Compaq DLT 15 Cartridge Library Model 35/70	HPMC.SYS	Windows Server 2003 SP1 CD	Yes
Compaq DLT Tape Drives	DLTTAPE.SYS	Windows Server 2003 SP1 CD	Yes
StorageWorks MSL5000 Series Mini-Libraries	LIBXPRMC.SYS	Windows Server 2003 SP1 CD	Yes
StorageWorks SSL2020 AIT Mini-Library	LIBXPRMC.SYS	Windows Server 2003 SP1 CD	Yes
StorageWorks TL881 DLT Mini-Library	LIBXPRMC.SYS	Windows Server 2003 SP1 CD	Yes
StorageWorks TL891 DLT Mini-Library	LIBXPRMC.SYS	Windows Server 2003 SP1 CD	Yes
Drive Array Notification [6]	CPQDAEN.SYS	ProLiant Support Pack for Microsoft Windows Server 2003 Version 7.30A	Yes
Smart Array 5xxx Notification Driver[6]	CPQCISSE.SYS	ProLiant Support Pack for Microsoft Windows Server 2003 Version 7.30A	Yes
Smart Array 5i Controller [6, 7]	CPQCISSM.SYS	Windows Server 2003 SP1 CD	Yes
Smart Array 5i Controller Plus	CPQCISSM.SYS	Windows Server 2003 SP1 CD	Yes
Smart Array 5302 Controller [6, 7]	CPQCISSM.SYS	ProLiant Support Pack for Microsoft Windows Server 2003 Version 7.30A	Yes

Option	Driver	Location	Digital Signature
Smart Array 5304 Controller [6, 7]	CPQCISSM.SYS	ProLiant Support Pack for Microsoft Windows Server 2003 Version 7.30A	Yes
Smart Array 5312 Controller [6, 7]	CPQCISSM.SYS	Windows Server 2003 SP1 CD	Yes
Smart Array 532 Controller [6, 7]	CPQCISSM.SYS	Windows Server 2003 SP1 CD	Yes
Smart Array 6402 Controller	CPQCISSM.SYS	Windows Server 2003 SP1 CD	Yes
Smart Array 6404 Controller	CPQCISSM.SYS	Windows Server 2003 SP1 CD	Yes
Smart Array 641 Controller [7]	CPQCISSM.SYS	Windows Server 2003 SP1 CD	Yes
Smart Array 642 Controller [7]	CPQCISSM.SYS	Windows Server 2003 SP1 CD	Yes
Smart Array 6i Controller	CPQCISSM.SYS	Windows Server 2003 SP1 CD	Yes
Fibre Channel Host Controller /P (32-bit/33-MHz Fibre Channel Host Adapter) [6]	CPQFCALM.SYS	Windows Server 2003 SP1 CD	Yes
Fibre Channel Host Controller /P (64-bit/66-MHz Fibre Channel Host Adapter) [6]	CPQFCALM.SYS	Windows Server 2003 SP1 CD	Yes
Fibre Channel Filter Driver [6]	CPQFCFTR.SYS	ProLiant Support Pack for Microsoft Windows Server 2003 Version 7.30A	Yes
Fibre Channel Array [6, 7]	CPQFCAC.SYS	ProLiant Support Pack for Microsoft Windows Server 2003 Version 7.30A	Yes
Smart Array 431, 4200, Smart Array 4250ES, and Integrated Smart Array Controllers [6, 7]	CPQARRY2.SYS	Windows Server 2003 SP1 CD	No
Integrated Dual Channel Wide Ultra2 SCSI Adapter [6]	SYM_HI.SYS	Windows Server 2003 SP1 CD	Yes
Integrated Wide Ultra2 SCSI Adapter [6]	SYM_HI.SYS	Windows Server 2003 SP1 CD	Yes
Integrated Ultra2 SCSI Adapter [6]	SYMC8XX.SYS	Windows Server 2003 SP1 CD	Yes
64-Bit Dual Channel Wide Ultra2 SCSI Adapter [6]	SYM_HI.SYS	Windows Server 2003 SP1 CD	Yes
64-bit/66MHz Dual Channel Wide Ultra 3 SCSI Adapter [6]	ADPU160M.SYS	Windows Server 2003 SP1 CD	Yes
64-bit/66MHz Single Channel Wide Ultra 3 SCSI Adapter [6]	ADPU160M.SYS	Windows Server 2003 SP1 CD	Yes
ProLiant Storage System [6]	PRLNTSS.SYS	ProLiant Support Pack for Microsoft Windows Server 2003 Version 7.30A	Yes

Option	Driver	Location	Digital Signature
Integrated Dual Channel Ultra320 SCSI Controller	SYMMPI.SYS	ProLiant Support Pack for Microsoft Windows Server 2003 Version 7.30A	Yes
HP 64-bit/13MHz Dual Channel Ultra320 SCSI Host Bus Adapter	SYMMPI.SYS	ProLiant Support Pack for Microsoft Windows Server 2003 Version 7.30A	Yes
HP 64-bit/13MHz Single Channel Ultra320 SCSI Host Bus Adapter	SYMMPI.SYS	ProLiant Support Pack for Microsoft Windows Server 2003 Version 7.30A	Yes

Note 6: Driver upgrades for many of the listed devices are included in Version 7.30A of the ProLiant Support Pack for Microsoft Windows Server 2003. After installing Windows Server 2003, update those drivers to enhance their reliability and functionality.

Note 7: Many of these devices have firmware upgrades available through variations of the Options ROMPaq. The latest version of each Options ROMPaq is available on the software and drivers website at http://h18007.www1.hp.com/support/files/server/us/index.html.

Supported network interface controllers

Table 5 lists supported ProLiant network interface controllers (NICs) and driver revisions supported by Windows Server 2003 SP1.

Table 5. Supported ProLiant Network Interface Controllers

NIC	Driver	Location	Digital Signature
NC3120 Fast Ethernet	N100325.SYS	Windows Server 2003 SP1 CD	Yes
NC3122 Fast Ethernet	N100325.SYS	Windows Server 2003 SP1 CD	Yes
NC3123 Fast Ethernet	N100325.SYS	Windows Server 2003 SP1 CD	Yes
NC3131 Fast Ethernet	N100325.SYS	Windows Server 2003 SP1 CD	Yes
NC3132 Fast Ethernet Upgrade Module	N100325.SYS	Windows Server 2003 SP1 CD	Yes
NC3133 Fast Ethernet Upgrade Module	N100325.SYS	Windows Server 2003 SP1 CD	Yes
NC3134 Fast Ethernet	N100325.SYS	Windows Server 2003 SP1 CD	Yes
NC3135 Fast Ethernet Upgrade Module	N100325.SYS	Windows Server 2003 SP1 CD	Yes
NC3162 Fast Ethernet (Embedded)	N100325.SYS	Windows Server 2003 SP1 CD	Yes
NC3163 Fast Ethernet (Embedded)	N100325.SYS	Windows Server 2003 SP1 CD	Yes
NC4621 Token Ring NIC	CPQTRND5.SYS	Windows Server 2003 SP1 CD	Yes
NC6132 Gigabit Module	N1000NT5.SYS	Windows Server 2003 SP1 CD	Yes
NC6133 Gigabit Module	N1000NT5.SYS	Windows Server 2003 SP1 CD	Yes
NC6134 Gigabit	N1000NT5.SYS	Windows Server 2003 SP1 CD	Yes
NC6136 Gigabit	N1000NT5.SYS	Windows Server 2003 SP1 CD	Yes
HP NC6170 Gigabit Server Adapter	N1000325.SYS	ProLiant Support Pack for Microsoft Windows Server 2003 Version 7.30A	Yes
NC7131 Gigabit	N1000NT5.SYS	Windows Server 2003 SP1 CD	Yes
NC7132 Gigabit Module	N1000NT5.SYS	Windows Server 2003 SP1 CD	Yes
HP NC7170 Gigabit Server Adapter	N1000325.SYS	ProLiant Support Pack for Microsoft Windows Server 2003 Version 7.30A	Yes
NC150T PCI 4-Port Gigabit Combo Switch Adapter	Q57XP32.SYS	ProLiant Support Pack for Microsoft Windows Server 2003 Version 7.30A	Yes
NC310F PCI-X Gigabit Server Adapter	N1000325.SYS	ProLiant Support Pack for Microsoft Windows Server 2003 Version 7.30A	Yes

NIC	Driver	Location	Digital Signature
NC320T PCI Express Gigabit Server Adapter	Q57XP32.SYS	ProLiant Support Pack for Microsoft Windows Server 2003 Version 7.30A	Yes
NC370T PCI-X Gigabit Server Adapter	BXND51X.SYS	ProLiant Support Pack for Microsoft Windows Server 2003 Version 7.30A	Yes
NC370F PCI-X Gigabit Server Adapter	BXND51X.SYS	ProLiant Support Pack for Microsoft Windows Server 2003 Version 7.30A	Yes
NC370i PCI-X Gigabit Server Adapter	BXND51X.SYS	ProLiant Support Pack for Microsoft Windows Server 2003 Version 7.30A	Yes
NC1020 Gigabit Server Adapter	Q57XP32.SYS	ProLiant Support Pack for Microsoft Windows Server 2003 Version 7.30A	Yes
NC6770 PCI-X Gigabit Server Adapter	Q57XP32.SYS	ProLiant Support Pack for Microsoft Windows Server 2003 Version 7.30A	Yes
NC7760 PCI-X Gigabit Server LAN on the Motherboard (LOM)	Q57XP32.SYS	ProLiant Support Pack for Microsoft Windows Server 2003 Version 7.30A	Yes
HP NC7761 Gigabit Server Adapter	Q57XP32.SYS	ProLiant Support Pack for Microsoft Windows Server 2003 Version 7.30A	Yes
NC7770 Gigabit	Q57XP32.SYS	ProLiant Support Pack for Microsoft Windows Server 2003 Version 7.30A	Yes
HP NC7771 Gigabit Server Adapter	Q57XP32.SYS	ProLiant Support Pack for Microsoft Windows Server 2003 Version 7.30A	Yes
NC7780 PCI Gigabit Server LOM	Q57XP32.SYS	ProLiant Support Pack for Microsoft Windows Server 2003 Version 7.30A	Yes
NC7781 PCI-X Gigabit Server LOM	Q57XP32.SYS	ProLiant Support Pack for Microsoft Windows Server 2003 Version 7.30A	Yes
HP NC7782 PCI-X Gigabit Server Adapter	Q57XP32.SYS	ProLiant Support Pack for Microsoft Windows Server 2003 Version 7.30A	Yes
IBM 16/4 TOKEN RING PCI SPECIAL	IBMTRP.SYS	Windows Server 2003 SP1 CD	Yes
Netelligent 16/4 PCI IBM UTP/STP Controller	IBMTRP.SYS	Windows Server 2003 SP1 CD	Yes

Important:
The drivers for the network interface controllers reside on the Windows Server 2003 SP1 CD and have undergone testing by Microsoft and HP.

ProLiant cluster support

A critical goal of HP's Adaptive Enterprise is to offer customers the ability to reduce exposure to unplanned downtime through automated software and hardware tools that predict, diagnose, and respond immediately to potential fault conditions. HP delivers intelligent fault resilience with its High Availability Clustering product solutions and kits built on Windows Server 2003, Enterprise Edition, industry standard ProLiant servers, Smart Array Cluster Storage, or StorageWorks platforms integrated with HP management tools.

The following products support Windows Server 2003, Enterprise Edition: ProLiant DL380 G4 Packaged Cluster, ProLiant DL380 G3 Packaged Cluster, ProLiant DL380 G2 Packaged Cluster, ProLiant CL380 Packaged cluster, and the ProLiant Cluster Kits HA/F500 for Enterprise Virtual Array, HA/F500 for MA8000, and HA/F100 & F200 for MSA1000.

PCI Hot Plug support

PCI Hot Plug is the ability to physically insert, remove, or replace PCI adapters while a ProLiant server is powered on. PCI Hot Plug operations may be performed under Windows Server 2003 SP1 on supported ProLiant servers with the PCI Hot Plug Filter Driver installed. ProLiant storage options and network interface controllers are supported for PCI Hot Plug operations.

ProLiant servers that are capable of PCI Hot Plug include:

Table 6. ProLiant servers with PCI Hot Plug support

HP ProLiant DL servers	HP ProLiant ML servers	Compaq ProLiant servers
ProLiant DL380 G2	ProLiant ML370 G2	ProLiant 6400R
ProLiant DL380 G3	ProLiant ML530 G2	ProLiant 6500 Xeon
ProLiant DL580	ProLiant ML570	ProLiant 7000 Xeon
ProLiant DL580 G2	ProLiant ML570 G2	ProLiant 8000
ProLiant DL740	ProLiant ML750	ProLiant 8500
ProLiant DL760 G2		

Higher availability on HP and Microsoft solutions is achieved through the deployment of Hot Plug RAID Memory, the most robust memory-protection solution in the HP Advanced Memory Protection strategy. With the introduction of industry-leading ProLiant 8-way platforms, the ProLiant DL760 G2 and ProLiant DL740, HP is the first and only vendor to offer Hot Plug RAID Memory in an industry-standard platform. With the introduction of these two new platforms based on the HP F8 chipset, customers will be able to, for the first time, deploy mainframe levels of availability in their industry-standard IT environments, without the high cost of mainframe technology. With the HP/Microsoft solution, customers can dynamically hot-add memory capacity without powering down the server which delivers true resource scalability and maximum uptime for enterprise customers. The Hot Add Memory feature in the specified 4-way and 8-way ProLiant servers is only supported in Windows Server 2003.

The following Hot Plug RAID Memory driver and utility are included in Version 7.30A and later of the ProLiant Support Pack for Microsoft Windows Server 2003:

- HP ProLiant Hot-Plug Memory Configuration Utility for Windows Server 2003
- HP ProLiant Hot Plug Memory Driver for Windows Server 2003

Lights-Out management support

Lights-Out management products, such as Integrated Lights-Out 2 (iLO 2), Integrated Lights-Out (iLO), and Remote Insight Lights-Out Edition II (RILOE II), remain an important part of the ProLiant solution adding support for the Windows Server 2003 operating system. Drivers for these products are included in the ProLiant Support Pack for Microsoft Windows Server 2003. Refer to the QuickSpecs for information regarding supported remote management features and functionality on Windows Server 2003: www.hp.com/servers/lights-out.

SmartStart installation paths

Server deployment of Microsoft Windows Server 2003 SP1 is consistent and easy every time with ROM-based utilities, whether you choose a SmartStart assisted installation or a manual operating system installation.

To fully optimize the performance of your hardware platform, a SmartStart assisted installation walks you through the entire operating system installation process. Using an assisted installation, SmartStart prepares the server for installation, allows you to install the operating system using the vendor-supplied CDs, and provides automated installation of server support software using ProLiant Support Packs (PSPs).

For a manual installation of the operating system, you can take advantage of the ROM-based utilities and vendor-supplied operating system media before manually installing server support software from the SmartStart CD.

For more information on SmartStart, go to the SmartStart website at www.hp.com/servers/smartstart. The installation guide, available on this website, walks you through both SmartStart installation paths.

Pre-installation tasks

To prepare for installation, gather the supported software detailed below.

1. Obtain ProLiant Support Pack (PSP) for Microsoft Windows Server 2003 Version 7.30A (or later) at http://h18023.www1.hp.com/support/files/server/us/locate/3376.html or from the SmartStart 7.30 CD. This PSP contains device drivers, management agents, and utilities supported under Windows Server 2003.

Note:
Once the ProLiant Support Pack for Microsoft Windows Server 2003 Version 7.30A (or later) is installed, you can use HP Systems Insight Manager available at www.hp.com/go/hpsim to manage your Windows Server 2003 servers.

2. For the ProLiant servers listed in Table 7, obtain System Configuration Utility Version 2.58 (or later) at http://h18023.www1.hp.com/support/files/server/us/locate/1950.html and create the associated bootable diskette set. Run the utility and verify that all system configuration options conform to those listed for the chosen platform.

Important:
Create the bootable diskette set if you plan to use the SmartStart Assisted Installation Path.

Table 7. ProLiant servers with System Configuration Utility support

Compaq ProLiant servers	ProLiant DL servers	ProLiant ML servers
ProLiant CL380	ProLiant DL360	ProLiant ML150
ProLiant 3000	ProLiant DL380	ProLiant ML150 G2
ProLiant 5500		ProLiant ML330
ProLiant 6000		ProLiant ML350
ProLiant 6400R		ProLiant ML370
ProLiant 6500		ProLiant ML530
ProLiant 7000		ProLiant ML570
ProLiant 8000		
ProLiant 8500		

Other ProLiant servers use the ROM-Based Setup Utility (RBSU). This utility can be used in place of the System Configuration Utility and must be used to specify the operating system on the server if you are using the SmartStart Assisted Installation Path.

Procedures for performing a clean installation

This section outlines the proper procedures to follow when performing a clean (new) installation of the Windows Server 2003 SP1 operating system on ProLiant servers.

To complete a Windows Server 2003 SP1 installation fully supported by HP, follow these steps when setting up the system. Read the following sequence completely before you begin.

Blade installation

The ProLiant Essentials Rapid Deployment Pack is a server deployment product that facilitates the installation, configuration, and deployment of high-volumes of servers via a GUI-based console using either scripting or imaging technology.

Especially designed for the HP BladeSystem servers, but supporting all ProLiant servers, the Rapid Deployment Pack has advanced features that can detect and display server blades based on their physical rack, enclosure, and bay location. You can set the deployment console to automatically install or redeploy a previous computer's configuration to a new blade when replaced.

To install Windows Server 2003 SP1 on HP BladeSystem servers, HP recommends using Rapid Deployment Pack Version 2.0 (or later).

All blade enclosures ship with a Foundation Pack which includes the Rapid Deployment Pack CD. The Rapid Deployment Pack CD contains all of the drivers, agents, and support software that the blade needs. Use the Rapid Deployment Pack CD with any deployment method chosen to install software on HP BladeSystem servers.

For additional product information and usage instructions for Rapid Deployment Pack, visit www.hp.com/servers/rdp.

Details about other deployment options can be found at the following locations:

- For ProLiant BL e-Class: http://h18004.www1.hp.com/products/servers/proliant-bl/e-class/deployment.html
- For HP BladeSystem p-Class: http://h18004.www1.hp.com/products/servers/proliant-bl/p-class/documentation.html

Manual install

To perform a manual installation:

1. Select a supported system platform from the server platforms listed in Table 2.
2. Inspect the system to confirm that it conforms to the platform-specific configuration listed in Table 2. If necessary, update the system ROMs as specified in this table.
3. Use the System Configuration Utility to configure the hardware for your server. See Table 7 to determine if this step is necessary for the server.

4. If the server has a Smart Array 642, Smart Array 641, Smart Array 5304, Smart Array 5302, Smart Array 531, Smart Array 5i, Smart Array 431, or Integrated Smart Array Controller installed as the boot controller, configure these arrays by accessing the Option ROM Configuration for Arrays utility via the F8 key during boot. Once the configuration is complete, exit the utility to continue the boot process.

Note:
Alternatively, you may set your array controller as the secondary controller and install the OS to a SCSI controller. Once the OS is installed, configure the array through the Array Configuration Utility (ACU) using the PSP for Microsoft Windows Server 2003 Version 7.30A

5. Insert the Windows Server 2003 SP1 CD into the CD-ROM drive to begin installation.
6. After Windows Server 2003 SP1 has been installed, install the Simple Network Management Protocol (SNMP), if you want to use the functionality of the ProLiant Management Agents.
   - Select the **Control Panel** from the Start menu.
   - Select **Add/Remove Programs**.
   - Click **Add/Remove Windows Components.**
   - Select **Management and Monitoring Tools** from the list of components.
   - Click **Details**.
   - Select **Simple Network Management Protocol** so that a checkmark is displayed in the checkbox.
   - Click **OK** and then click **Next**.
   - Click **Finish**.
7. Install Version 7.30A (or later) of the ProLiant Support Pack (PSP) for Microsoft Windows Server 2003, which is available at http://h18023.www1.hp.com/support/files/server/us/locate/3376.html. The PSP contains numerous files. For the PSP to be installed properly, all files must be present in the same directory as the SETUP.EXE program.

   Primary installation method

   - Run the SETUP.EXE program included with the PSP. By default, all software components are selected for installation. In most circumstances, this default selection should not be altered.
   - Click **Install** to proceed with the installation. Although all software components are selected for installation by default, only those required by the server will install. After the installation is complete, the utility will display successfully installed components, non-applicable components, and any component installation failures.

   Command prompt installation

   - Use the SETUPC.EXE to install the PSP from a command line prompt without user interaction. This utility is designed as a tool that can be scripted. As with the SETUP.EXE program, all components appropriate for the target server will be installed.
   - For additional usage information, refer to the BPXXXXXX.TXT file included with the downloaded files and the ProLiant Support Pack and Deployment Utilities User Guide posted on the download Web page for the PSP.

Unattended install

For detailed procedures on unattended installs, refer to Microsoft documentation. When using an UNATTEND.TXT file, follow these additional procedures.

1. Add the following line in the unattend section if the UNATTEND.TXT file has the OEMPreinstall flag set.

```
[UNATTEND]

DisableVirtualOemDevices=Yes
```

2. Ensure that any special hardware-specific drivers appropriate for your ProLiant server are available in the specified OEMFilesPath. The drivers for the supported devices may not be included on the base media.

Note:
These changes are only necessary when using an UNATTEND.TXT file with the OEMPreinstall flag set. Failure to set this flag could cause installs to abort with the following message: "File [filename] could not be loaded. Error code is 18. Setup cannot continue."

Known issues and workarounds

This section details the known issues with installing Windows Server 2003 SP1 on ProLiant servers and provides information about resolving them.

Table 8. Known issues

Issue 1	**SYSTEM ROM UPGRADE REQUIRED on ProLiant servers with Intel Xeon, Xeon DP, or Xeon MP processors to correct timing marginality in the Instruction Decoder.**	
	Description	Intel Corp. has identified a timing marginality in a small percentage of Intel Xeon, Intel Xeon DP and Intel Xeon MP Processors that can cause erratic system behavior after prolonged usage. Based on Erratum P72 in the Intel Xeon Processor Specification Update and Erratum O69 in the Intel Xeon MP Processor Specification Update dated July 2004, the timing marginality in the instruction decoder unit may cause unpredictable application or system behavior. For additional details, refer to the customer advisory located at http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?objectID=PSD_EL040709_CW01.
	Solution	This timing marginality in Intel Xeon, Intel Xeon DP and Intel Xeon MP Processors is corrected in the June 2004 System ROMs. However, separate Intel errata (Erratum P76 and Erratum O73 - A Timing Marginality in the Arithmetic Logic Unit May Cause Indeterminate Behavior) has been corrected in System ROMs dated September 2004. System ROMs dated September 2004 include the microcode required to correct BOTH errata P72 and P76 in the Xeon Processor and errata O69 and O73 in the Xeon MP Processor. HP strongly recommends downloading and applying the System ROMPaq Upgrade Diskette (dated September 2004 or later) to upgrade the ProLiant System ROM to the appropriate date.

Issue 2	**The Data Execution Prevention (DEP) feature in Windows Server 2003 SP1 causes the HP Insight Management Agents and the HP ProLiant Rack Infrastructure Service to stop running.**	
	Description	If the Data Execution Prevention (DEP) feature is enabled in Microsoft Windows Server 2003 Service Pack 1 (SP1), it causes the HP Insight Management Agents for Windows Server 2003 and the HP ProLiant Rack Infrastructure Interface Service for Windows Server 2003 (this only affects ProLiant Server Blades) to stop running. For additional details, refer to the customer advisory located at http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?objectID=PSD_EM050113_CW01.
	Solution	Install Version 7.30A of the ProLiant Support Pack for Microsoft Windows Server 2003.
Issue 3	**Yellow exclamation mark gets displayed in ATI Device Manager with Remote Insight Lights-Out Edition installed.**	
	Description	When using Remote Insight Lights-Out Edition, the Windows Server 2003 Device Manager displays a yellow exclamation mark beside the ATI device.
	Solution	Please disregard the yellow exclamation mark as there is no loss of functionality or other reported symptoms to elicit concern.
Issue 4	**Hibernation issue exists with 4 GB or more system memory.**	
	Description	The Hibernation tab does not install on servers with 4 GB or more system memory.
	Solution	Hibernation with 4 GB or more system memory is not supported in Windows Server 2003.
Issue 5	**Embedded network interface controllers are not enumerated consistently.**	
	Description	After installing and configuring embedded network interface controllers (NICs) post Windows Server 2003 installation, the port configurations may not operate as expected.
	Solution	Switch cables if you are experiencing this situation.
Issue 6	**Dynamic disk drives attached to Compaq Fibre Channel HBAs disappear after "hot-swap."**	
	Description	After hot removal and subsequent hot addition of the Compaq Fibre Channel Array or the Compaq Fibre Channel Host Controller /P (64-bit/66-MHz Fibre Channel Host Adapter) from one slot to another, the dynamic disk drive letters associated with the drives attached to the Compaq Fibre Channel Array or the Compaq Fibre Channel Host Controller /P are no longer listed in the Device Manager.
	Workaround	Reboot the server for the correct dynamic disk drive letters to return.
	Solution	Scheduled to be fixed in a later Microsoft operating system release.

Issue 7	**The Smart Array 4200 Controller Driver does not install during Setup.**	
	Description	During the install of Windows Server 2003, a popup box reports the following: Setup had problems installing the following device: Compaq Smart Array 4200 Controller. Do you want to delay installing this device until after setup is complete? The Smart Array 4200 Controller will not be installed during Windows Server 2003 Setup if this controller is set as the boot controller.
	Solution	This issue is resolved by installing Windows Server 2003 SP1.
Issue 8	**Software fault tolerant volumes (dynamic disks) fail during driver upgrade or rollback.**	
	Description	When a device driver is updated for a device containing dynamic disks, the software fault tolerant volumes located on these dynamic disks will fail and will require regeneration.
	Workaround	No workaround is available at this time.
	Solution	Scheduled to be fixed in a later Microsoft operating system release.
Issue 9	**Upgrading miniport driver for secondary device requires reboot.**	
	Description	When a device driver for a secondary device is updated, the Windows Server 2003 operating system may request a reboot.
	Workaround	Reboot the server as prompted.
	Solution	Scheduled to be fixed in a later Microsoft operating system release.
Issue 10	**Incorrect port number and port ID returned in insertion and removal events.**	
	Description	When using Smart Array 5xxx Notification Driver (CPQCISSE.SYS) Version 5.42.0.32 with Smart Array Cluster Storage, the port number and port ID in removal and insertion events are reported incorrectly.
	Solution	To resolve this issue upgrade to Smart Array Cluster Controller Firmware Version 1.70 (or later) and upgrade to Version 5.42.2.32 (or later) of the CPQCISSE.SYS driver. Smart Array Cluster Controller Firmware Version 1.70 (or later) is downloadable as follows: • **Name:** Online ROM Flash Component for Windows - Compaq Smart Array Cluster Storage Controller • **Download location:** http://h18007.www1.hp.com/support/files/server/us/locate/6397.html CPQCISSE.SYS Version 5.42.2.32 (or later) is downloadable as follows: • **Name:** ProLiant Smart Array 5x and 6x Controller Driver for Windows 2000/Server 2003 • **Download location:** http://h18007.www1.hp.com/support/files/server/us/locate/2757.html

Issue 11	**The native OS backup utility may prohibit appending data to the tape drive.**	
	Description	When performing a backup using the native OS backup utility, you might receive a message describing a hardware error. In this case, the following message will be displayed at the end of the backup job: Drive Error: The device reported an error on a request to write data to media. Error Reported: Invalid command. There may be a hardware or media problem. Please check the system event log for relevant failures. The backup log will suggest that drive C is not a valid drive or that you do not have access to the drive. After you receive this error, you can no longer append data to that tape drive.
	Solution	Download the Microsoft HotFix WindowServer2003-KB817688-I386-ENU.EXE file from http://h71028.www7.hp.com/enterprise/downloads/WindowsServer2003-KB817688-i386-ENU.exe. Then, run the executable in the Windows Server 2003 environment.
Issue 12	**ProLiant Advanced System Management Controller Driver for Microsoft Windows Server 2003 (CPQASM.SYS) will not load on the ProLiant 3000, 5500, or 6500.**	
	Description	The ProLiant Advanced System Management Controller Driver for Microsoft Windows Server 2003 (CPQASM.SYS) will not load on the ProLiant 3000, 5500, or 6500. The Windows Server 2003 version of this driver depends on ACPI support, and these ProLiant models do not support ACPI. Other components that depend on this driver may fail to load or may not provide full functionality. The following message will be displayed in CPQSETUP.LOG after the driver is installed: Name: hp ProLiant Advanced System Management Controller Driver for Windows Server 2003 New Version: 5.30.3718.0 Beginning Silent Session… The software is not installed on this system, but is supported for installation. - the component will be installed Installation failed on at least one device. One of the devices may have been deleted through Device Manager and a reboot may be necessary to complete the driver installation for this device. The operation was not successful.
	Solution	This issue is resolved in Version 5.36.0.0 or later of the ProLiant Advanced System Management Controller Driver for Windows 2000/Server 2003. This version of the driver will automatically check for ACPI support and install the appropriate driver. Install Version 7.30A of the ProLiant Support Pack for Microsoft Windows Server 2003.

Issue 13	Unattended installs abort when using UNATTEND.TXT file with the OEMPreinstall flag set.	
	Description	Unattended installs abort with the following message: File [filename] could not be loaded. Error code is 18. Setup cannot continue. When installing any edition of Microsoft Windows Server 2003 on a ProLiant server that has an embedded virtual install disk, the error message listed above may be generated when using an UNATTEND.TXT file that includes the OEMPreinstall flag. The problem occurs because the Windows Server 2003 Installer interacts with the embedded virtual install disk when the OEMPreinstall flag is set in the UNATTEND.TXT file, but no files are specified to be preinstalled. In order for this error condition to be triggered, all of the following conditions must be met: • Windows Server 2003 (or later) installation. • Installation must be performed using an UNATTEND.TXT script. • The OEMPreinstall flag must be set in the UNATTEND.TXT file. • The UNATTEND.TXT file must NOT specify any files to be preinstalled. • The server must have an active virtual install disk. **Note:** Installations performed using SmartStart, Rapid Deployment Pack, or "Disk Image" (i.e., the operating system image is copied to the hard drive) are not affected.

	Solution	To work around this problem, use one of the following methods:
		Preferred method:
		If the OEMPreinstall flag is set to Yes in the UNATTEND.TXT file, set the "DisableVirtualOemDevices" flag to Yes in the [UNATTENDED] section of the UNATTEND.TXT file, as shown in the following example:
		`[UNATTENDED]`
		`DisableVirtualOemDevices=Yes`
		Other methods:
		Avoid setting the OEMPreinstall flag to Yes in the UNATTEND.TXT file if files are not specified to be preinstalled.
		OR
		Disable the virtual install disk in the advanced options of the ROM-Based Setup Utility (RBSU) for the affected server.

For more information

For additional information, refer to the resources detailed below.

Table 8. Web resources

Resource description	Web address
HP and Microsoft Frontline Partnership website	www.hp.com/go/microsoft
Microsoft website	www.microsoft.com
Microsoft Windows Server 2003 TechCenter: *Learn About and Install Windows Server 2003 Service Pack 1 (SP1)*	www.microsoft.com/technet/prodtechnol/windowsserver2003/servicepack/default.mspx

Call to action

Send comments about this paper to: TechCom@HP.com.

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