commercial
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Operating System and Device Driver Support
HP bPC Commercial Desktop Division
2003 HP Compaq Business Desktop Products

sales
information

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abstract

This paper is intended to provide business and IT professionals with an overview of operating system and device drive support for the 2003 Business Desktop products from HP.

introduction

Device drivers are required for proper functioning of devices included with computers. Some device driver support is included with the operating system; however, newer devices frequently require additional device drivers that were not available when the operating system was introduced. HP packages device drivers in Softpaq format and places them on a Web site for the customers' convenience.

For this paper, the 2003 Business Desktop computers from HP include:

- HP Compaq Business Desktop D220 Microtower
- HP Compaq Business Desktop D230 Microtower
- HP Business Desktop D325 Microtower
- HP Compaq Business Desktop D330 Slim Tower
- HP Compaq Business Desktop D330 Desktop
- HP Compaq Business Desktop D530 Convertible Minitower
- HP Compaq Business Desktop D530 Small Form Factor
- HP Compaq Business Desktop D330 Microtower
- HP Compaq Business Desktop D530 Ultra-slim Desktop

acronyms used

OS – Operating System

SP – Service Pack

BIOS – Basic Input/Output System: The system's firmware which primarily allows the power up of various devices during boot for the OS to load properly.

device driver support by category

In the tables on subsequent pages:

- **HP/WU** means that drivers are available from both the HP Web site (Softpaq) and from Windows Update. HP has tested and validated that the device drivers on the HP Web site function as expected.
- **HP** means that device drivers that are available from the HP Web site: http://h18007.www1.hp.com/support/files/index.html
- **OS** means that support is included with the operating system.
- **N/R** means "not recommended."
- **SP1** refers to Windows XP Service Pack 1
- **SP3** refers to Windows 2000 Professional Service Pack 3

audio, graphics, NIC, and modem devices	98SE	Me	NT4	2000	XP
	HP/WU	HP/WU	HP/WU	HP/WU	HP/WU

The audio, graphics, NIC, and modem devices shipped with 2003 Business Desktops from HP were all designed, tested, and fabricated after the release of Windows XP and all earlier Windows operating systems. None of these devices will function without a device driver. There are no device drivers included with the operating system that will enable these devices to fully function[1].

AGP 3D-graphics support is not included with the OS and requires both a graphics driver and a chipset update.

PC card, TCPA, and keyboard	98SE	Me	NT4	2000	XP
	-	-	-	HP/WU	HP/WU

Windows does not include a device driver for the PC card controller, TCPA security solution, Internet keyboard, and Smart Card keyboards devices included with 2003 Business Desktop computers from HP. To function, these devices require a device driver to be installed separately from the operating system.

HP provides device drivers for Windows 2000 Professional and Windows XP; device drivers are also available from Windows Update. HP does not provide support for devices in these categories for Windows 98, Windows Me, and Windows NT4.

The Internet keyboard device driver supports the HP-specific Internet keys not found on a standard keyboard. The other keys on the Internet keyboard will function with the keyboard driver included with the operating system.

storage		98SE	Me	NT4	2000	XP
CD-RW[2]		-	-	-	-	OS
48-bit LBA[3]		-	-	-	SP3	SP1
MultiBay (ICH4)		-	-	-	SP3	SP1
MultiBay (ICH5)		-	-	-	HP[4]	HP[5]

For more information on storage support included with the operating system, see
http://www.microsoft.com/hwdev/tech/storage/pcstor.asp

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[1] Windows does include a graphics driver that provides limited functionality at low resolutions, e.g. 640x480 with 16 colors. AGP 3D-graphics support is also not enabled until chipset (e.g. Intel 845) support is installed. The chipset support is available from the HP Web site.

[2] Windows XP includes limited support for CD-RW writing for CD-RW drives that support the IMAPI standard. All CD-RW drives included with 2003 HP computers support IMAPI. IMAPI allows an application to stage and burn a simple audio or data image to CD-R or CD-RW devices.

[3] 48-bit LBA support allows the use of hard drives larger than 137 GB.

[4] When available, Windows 2000 Service Pack 4 will include support for MultiBay implemented with the ICH5 IDE controller.

[5] When available, Windows XP Service Pack 2 will include support for MultiBay implemented with the ICH5 IDE controller.

IEEE 1394	**98SE**	**ME**	**NT4**	**2000**	**XP**
	OS	OS	-	OS	OS

Generic class support included with the operating system is used for IEEE 1394 host controllers.

With each new release of Windows, additional IEEE 1394 device classes (e.g. digital video camera or optical drives) have become supported by the operating system.

USB		**98SE**	**Me**	**NT4**	**2000**	**XP**
	USB Keyboard/Mouse	OS	OS	-	OS	OS
	Disk-on-Key	-	-	-	OS	OS
	USB1.x	OS	OS	Bios only[6]	OS	OS
	USB2.0	-	-	-	SP3	SP1

interrupt controller support		**98SE**	**Me**	**NT4**	**2000**	**XP**
	APIC	No	No	Yes	Yes	Yes
	PIC	Yes	Yes	Yes	Yes	Yes

- APIC support allows each device to have its own interrupt.
- If PIC support is used instead, PCI devices typically will share interrupts.
- All 2003 HP business desktop computers include support for APIC.

power management support		**98SE**	**Me**	**NT4**	**2000**	**XP**
	ACPI	Yes	Yes	No	Yes	Yes
	APM	Yes	Yes	No	N/R	N/R

Microsoft recommends using ACPI instead of the earlier version of power management (APM) on Windows 2000 and Windows XP. As newer computers are introduced, the system BIOS might not support the obsolete APM interface. All 2003 HP business desktop computers include support for ACPI.

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[6] To enable earlier operating systems to be installed, the system BIOS includes support for USB keyboards and USB mice. Depending on the particular computer, the system BIOS may also support booting from a USB floppy drive.

hyperthreaded processor support

	98SE	Me	NT4	2000	XP
Hyperthead Support	No	No	No	No	Yes

- Hyperthreading makes a single physical hyperthreaded enabled Pentium IV processor as two logical processors to the operating system.
- Due to application compatibility concerns, HP recommends Windows XP SP1 or later be used when hyperthreading is enabled.
- Windows 2000 supports up to two processors.
- Optimizations for hyperthreading are not included in Windows 2000 Professional so performance will be lower with hyperthreading enabled.
- Support for hyperthreading is available for both Windows XP Professional and Home Editions.
- Windows XP Home Edition provides support for one physical processor.
- Windows XP Professional provides support for one or two physical processors.
- For more information on hyperthreading from Intel and Microsoft:

  http://www.intel.com/support/platform/ht/os.htm
  http://www.microsoft.com/hwdev/platform/proc/ht-windows.asp

bios update support

	98SE	Me	NT4	2000	XP
bootable floppy-based ROMPAQ	HP	HP	HP	HP	HP
Windows-based (HPQFlash), (CPQFlash), and SSM	-	-	HP	HP	HP

DVD playback software

98SE	Me	NT4	2000	XP
HP	HP	-	HP	HP

HP provides WinDVD playback software on the HP Web site for DVD drives included with the computer.

management software

98SE	Me	NT4	2000	XP
HP	HP	HP	HP	HP

HP provides the following software on the HP Web site:

- HP Diagnostics for Windows
- HP Management Agents
- HP SSM (software update utility)

operating system availability by model

(pre-installed)

	98SE	Me	NT4	2000	XP
HP Compaq Business Desktop d220 Microtower	-	-	-	-	Yes
HP Compaq Business Desktop d230 Microtower	-	-	-	-	Yes
HP Business Desktop d325 Microtower	-	-	-	Yes	Yes
HP Compaq Business Desktop d530 Convertible Minitower	-	-	-	Yes	Yes
HP Compaq Business Desktop d530 Small Form Factor	-	-	-	Yes	Yes
HP Compaq Business Desktop d530 Ultra-slim Desktop	-	-	-	Yes	Yes
HP Compaq Business Desktop d330 Microtower	-	-	-	Yes	Yes
HP Compaq Business Desktop d330 Slim Tower	-	-	-	Yes	Yes
HP Compaq d330 Business Desktop	-	-	-	Yes	Yes

- HP has designed, developed, and tested preinstall images for the different 2003 models as shown above. Due to licensing restrictions, customers should order computers with the intended operating system.

- HP has also received Microsoft WHQL logo certification for the various models as shown in the table above.

operating system support matrix

	Windows 98 SE	Windows NT SP6	Windows 2000 Pro SP2	Windows 2000 Pro SP3	Windows XP Home (Gold)	Windows XP Home SP1	Windows XP Pro (Gold)	Windows XP Pro SP1	Linux	OS/2
HP Compaq D220/230 Business Desktop	-	-	-	-	SP	PI	SP	PI	CT	-
HP D325 Business Desktop	LS	LS	SP	PI	SP	PI	SP	PI	CT	-
HP Compaq D330 Business Desktop	LS	LS	SP	PI	SP	PI	SP	PI	CT	-
HP Compaq D530 Business Desktop	LS	LS	SP	PI	SP	PI	SP	PI	CT	LS

Support Definitions:

PI	Pre-installed – Operating system offered pre-installed by HP. All hardware devices supported.
SP	Supported – Operating system not offered pre-installed by HP but most all hardware devices supported. Note that some hardware subsystems may not be supported by the operating system manufacturer.
LS	Limited Support – Operating system not offered pre-installed by HP but basic hardware devices supported. Note that some hardware subsystems may not be supported by the operating system manufacturer.
CT	Operating system not offered pre-installed by HP but basic hardware devices supported. Note that some hardware subsystems may not be supported by the operating system manufacturer.

Microsoft recommended minimum configurations

Windows XP Professional System Requirements:

http://www.microsoft.com/windowsxp/pro/howtobuy/upgrading/sysreqs.asp

Windows 98 Second Edition:

http://support.microsoft.com/default.aspx?scid=/support/windows/readme/win98SE/w98sesetuptiptxt.asp

Minimum Hardware Requirements to Install Windows Millennium:

http://support.microsoft.com/default.aspx?scid=kb;en-us;253695

Installing Windows 2000 Professional:

http://www.microsoft.com/technet/treeview/default.asp?url=/technet/prodtechnol/windows2000pro/reskit/part2/proch04.asp

general articles on Windows XP

Windows XP Professional Comparison Guide:

http://www.microsoft.com/windowsxp/pro/evaluation/whyupgrade/featurecomp.asp

Windows XP Technical Overview

http://www.microsoft.com/windowsxp/pro/techinfo/planning/techoverview/compat.asp

linux support

Hardware support for the Linux operating system on HP Compaq Business Desktops is provided by various Linux distributions in the marketplace. HP works with MandrakeSoft, Red Hat, SuSE and Turbolinux to certify that specific configurations of HP Business Desktop hardware will function. Note that not all versions of a Linux vendor distribution operating system may be certified on HP hardware. HP does not provide support for Linux. HP does distribute a custom version of Mandrake that contains additional drivers to optimize the device support for HP hardware.

os/2 support

HP makes available certain OS/2 device drivers for the HP Compaq Business Desktop D530 family of products. Some OS/2 drivers will be made available via the HP web site at http://h18007.www1.hp.com/support/files/index.html.

The OS/2 video driver for the HP Compaq D530 Business Desktop is available for purchase with a new HP Compaq D530 Business Desktop PC. Contact your account manager for details.

feedback

Please direct comments regarding this communication to Keith Martin at this Internet address: keith.martin@hp.com