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TEST DRIVE: Mobile Broadband

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50 BIGGEST PC ANNOYANCES



**[AND HOW TO
FIX THEM...]**

✓ **WINDOWS**

Blast Away Bottlenecks

✓ **INTERNET**

Zap Obnoxious Ads

✓ **HARDWARE**

Solve System Mysteries

✓ **E-MAIL**

Cure In-Box Headaches



monitor not included

HP COMPAQ d220 MICROTOWER

Affordable, Reliable

\$579 Lease for \$23
a month*

Intel® Pentium® 4 processor 2.40GHz
128MB DDR SDRAM Memory
40GB Hard Drive (5400 rpm)[†]
48X CD-ROM Drive[†]
Integrated 10/100 Ethernet
PS/2 Scroll Mouse
Microsoft® Windows® XP Professional
1-1-1 (Parts/Labor/On-site) Limited Warranty**



monitor not included

HP COMPAQ d330 SLIM TOWER

Performance, Value

\$679 Lease for \$27
a month*

Intel® Pentium® 4 processor 2.40GHz
256MB DDR SDRAM Memory
40GB Hard Drive (5400 rpm)[†]
48X/24X/48X CD-RW Drive^{††}
Integrated Gigabit Ethernet
Microsoft® Windows® XP Home
Microsoft® Works 2003
3-1-1 (Parts/Labor/On-site) Limited Warranty**



monitor
not included

HP COMPAQ d530 SMALL FORM FACTOR

Small and Powerful

Best of CES 2003 Innovation Award,
D500 Series

\$699 Lease for \$27
a month*

Intel® Pentium® 4 processor 2.40GHz
128MB DDR SDRAM Memory
40GB Hard Drive[†]
Integrated Intel® Extreme Graphics 2
48X CD-ROM Drive[†]
Integrated Gigabit Ethernet
Microsoft® Windows® XP Professional
3-3-3 (Parts/Labor/On-site) Limited Warranty**



monitor not included

HP WORKSTATION xw6000

Space Saving,
Dual Processor Performance

\$1,550 Lease for \$60
a month*

Intel® Xeon™ processor 2.40GHz
80GB Ultra ATA 100 (7200 rpm) Hard Drive[†]
512MB DDR SDRAM (ECC)
ATI FireGL Z1 128MB DDR Open
GL 3D Graphics
48X CD-ROM
Integrated AC97 Audio
Integrated Gigabit (10/100/1000)
Ethernet Controller
Microsoft® Windows® XP Professional
3-Year Worldwide Limited Warranty**

Get even more:

L1825 18" TFT Monitor: Add \$599



monitor not included

HP COMPAQ d530 CONVERTIBLE MINITOWER

Expandable

\$899 Lease for \$35
a month*

Intel® Pentium® 4 Processor 2.60GHz
with HT Technology^{†††}
512MB DDR SDRAM Memory
80GB Hard Drive[†]
Integrated Intel® Extreme Graphics 2
48X/24X/48X CD-RW Drive^{††}
Integrated Gigabit Ethernet
Microsoft® Windows® XP Professional
3-3-3 (Parts/Labor/On-site) Limited Warranty**



monitor
not included

HP COMPAQ d530 SMALL FORM FACTOR

Small and Powerful

\$799 Lease for \$31
a month*

Intel® Pentium® 4 processor 2.40GHz
256MB DDR SDRAM Memory
40GB Hard Drive[†]
Integrated Intel® Extreme Graphics 2
48X/24X/48X CD-RW Drive^{††}
Integrated Gigabit Ethernet
Microsoft® Windows® XP Professional
3-3-3 (Parts/Labor/On-site) Limited Warranty**

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- Microsoft® Pocket PC 2003 Premium

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Secure, Wireless Productivity Tool

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- Microsoft® Pocket PC 2003 Premium

\$649



HP psc 2110 ALL-IN-ONE

Color printing, color scanning, color copying

- Up to 4800-optimized dpi***
- HP PhotoREt III
- Up to 14 ppm text

\$149



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High-performance personal printer

- True 1200 dpi
- 20 ppm rich black text

\$399

HP printers got an A+ in 2003 printer satisfaction survey in PC Magazine.



HP tc2120 SERVER

Dependable Value

Prices starting at:

\$499

Lease starting at \$20 a month*

- Intel® Celeron® or Intel® Pentium® processor
- 40GB Ultra ATA Hard Drive or 36GB U320 SCSI Hard Drive†
- 128MB Advanced ECC PC2100 DDR SDRAM DIMM Memory, upgradable to 4GB
- Integrated Dual Channel Ultra ATA-100 IDE Controller
- Embedded NC7760 PCI Gigabit NIC
- 10/100/1000 WOL (Wake on LAN)
- 48X IDE (ATAPI) CD-ROM Drive
- 1-Year Next-Business-Day On-site Warranty**

Get even more:

HP Care Pack Service - 3 year, 13x5, 4-hour response: Add \$348



HP PROLIANT DL320 G2 SERVER

Flexible and Easy to Manage

HP ProLiant Servers Rank No. 1 in U.S. Customer Satisfaction Report

Prices starting at:

\$1,374

Lease starting at \$53 a month*

- Intel® Pentium® 4 processor 2.26GHz/512KB or 3.06GHz/512KB
- 128MB Total PC2100 Registered ECC DDR SDRAM Memory, upgradable to 4GB
- Integrated Dual Channel Ultra ATA/100 Adapter with Integrated ATA RAID 0, 1
- Two 3.5" x 1" Non-Hot Plug Drive Bays
- 40GB ATA Hard Drive 1" or 36GB U320 Hard Drive (1")†
- Two (2) integrated NC7760 PCI Gigabit NICs
- 10/100/1000 Ethernet NICs w/WOL and PXE support
- Ships standard with the ProLiant Essentials Foundation Pack, (including SmartStart™ and Insight Manager™) and supports other ProLiant Essentials tools like the Rapid Deployment Pack
- 3-1-1 (Parts/Labor/On-site) Limited Warranty**



monitor not included

HP WORKSTATION xw4100

High Performance

\$999

Lease for \$39 a month*

- Intel® Pentium® 4 processor 2.60GHz (800MHz FSB)
- 40GB Ultra ATA 100 (7200 rpm) Hard Drive†
- 512MB PC3200 DDR SDRAM
- NVIDIA Quadro NVS 200 AGP
- 48X CD-RW Drive††
- Broadcom Gigabit 10/100/1000 NIC
- Microsoft® Windows® XP Professional
- 3-Year Worldwide Limited Warranty**



HP PROLIANT ML330 G3 SERVER

Powerful Reliability

HP ProLiant Servers Rank No. 1 in U.S. Customer Satisfaction Report

\$1,329

Lease for \$52 a month*

- Dual processor capable
- Intel® Xeon™ processor 2.80GHz
- 256MB ECC DDR memory, upgradable to 4GB memory
- 36.4GB U320 Universal Hard Drive†, expandable to 402GB storage
- 3 PCI slots
- Embedded NC7760 PCI Gigabit NIC
- Ships standard with the ProLiant Essentials Foundation Pack, (including SmartStart™ and Insight Manager™) and supports other ProLiant Essentials tools like the Rapid Deployment Pack
- 1-Year Global Pre-Failure Warranty**

Prices shown are HP direct prices; reseller and retailer prices may vary. Prices shown are subject to change and do not include applicable state and local sales tax or shipping to recipient's destination. Photography may not accurately represent exact configurations priced. *Implicit lease rate, assuming lessee does not exercise a fair-market-value purchase option at the end of the lease term and timely returns the leased equipment to Hewlett-Packard Financial Services Company (HPFSC) at the end of the lease term and disregarding any charges payable by lessee other than rent payments (such as taxes, fees and shipping charges). Offer valid through 10/31/03 on all lease transactions with a total transaction amount between \$499 and \$100,000. Lease products available through HPFSC to qualified commercial customers in the U.S. and subject to credit approval and execution of standard HPFSC documentation. Other restrictions may apply. HPFSC reserves the right to change or cancel this program at any time without notice. †For hard drives, GB=billion bytes. †48X Max CD-ROM Drive data transfer rates may vary from 6750 Kbps to 7800 Kbps. **Certain warranty restrictions and exclusions may apply. For complete warranty details, call 1-800-345-1518 (U.S.). ††10X, 48X CD-RW drive data transfer rates may vary as follows: for recording to CD-R media, the max transfer rate may be up to 4800 Kbps (use 48X discs for best performance); for writing to CD-RW media, the max transfer rate may be up to 1500 Kbps (use 4X-12X high-speed media discs for best performance); for reading CD media, the max transfer rate may be up to 6000 Kbps. Actual transfer

small and
medium business



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HP recommends Microsoft® Windows® XP Professional.



HP COMPAQ nx9010
NOTEBOOK
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\$1,029 Lease for \$40
a month*

Intel® Pentium® 4 processor 2.40GHz
14.1" TFT XGA Display
256MB DDR SDRAM
30GB SMART Ultra-ATA Hard Drive†
24X CD-ROM Drive††
1.44MB Floppy Drive
Integrated Mini PCI 56K V.92 Modem††
Integrated 10/100 NIC
Microsoft® Windows® XP Home
1-Year Worldwide Limited Warranty**

HP COMPAQ nx7000
NOTEBOOK

Thin and Wide

\$1,699 Lease for \$66
a month*

Intel® Centrino™ mobile technology
(Intel® Pentium® M processor 1.40GHz,
Intel® PRO/Wireless Network Connection 802.11b,
Intel® 855 Chipset Family)
15.4" WXGA Display
40GB Hard Drive†
512MB SDRAM Memory
DVD Drive
56K Modem + 10/100 Ethernet
Microsoft® Windows® XP Professional
1-Year Limited Warranty**

COMPAQ EVO N620c
NOTEBOOK

Slim and Light

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a month*

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14.1" TFT XGA Display
256MB DDR SDRAM
40GB SMART Ultra-ATA Hard Drive†
DVD Drive
Integrated Mini PCI 56K V.92 Modem††
Integrated 10/100/1000 Gigabit Ethernet
Microsoft® Windows® XP Professional
3-Year Worldwide Limited Warranty**

HP COMPAQ nc4000
NOTEBOOK

Compact, Ultra Portable

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a month*

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12.1" XGA Display
40GB Hard Drive†
256MB DDR SDRAM
56K Modem + 10/100 Ethernet
Microsoft® Windows® XP Professional
3-Year Limited Warranty**



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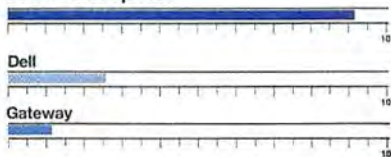
A

2003 PC Magazine Service & Reliability Report: A



ABS® Awesome Desktops are powered by the Intel® Pentium® 4 processor with Hyper-Threading technology.

Customer Satisfaction ABS® Computer



>> Source: Resellerratings.com

August 10, 2003

If you are contemplating buying a PC, go with ABS. You will find out that there is a company out there provides blazing PCs at cheap prices and they still refer to you by your name rather than a number!

-- A. Shaykh from Kalamazoo, Michigan



NVIDIA FX 5900 Ultra (NV35)



VS.



ATI Radeon 9800 Pro (R380)

Realistic 3D Graphic Experience

ABS® Awesome 3500



420-Watt Full Tower Case w/Front USB 2.0 & Audio
ASUS SIS648FX Chipset Motherboard
512MB DDR400 Memory Upgrade to 1GB DDR400 @\$62
80GB 7200RPM 8MB Cache IDE Hard Drive
Lite-On 16X DVD ROM and Floppy Drive
Lite-On 52X24X52 CD-ReWritable Drive
NVIDIA® GeForce FX 5200 w/128MB 8X AGP w/TV-Out & DVI
ADI AD1980 6 Channel Audio
Add Creative Labs Sound Blaster Audigy Sound Card @\$65
Integrated 10/100 Mbps LAN Controller & V.92 PCI 56K Modem
Wireless Keyboard and Optical Mouse Set
Logitech Z-540 5.1 Surround Speakers
Corel WordPerfect Office 11
Various LCD & CRT Monitor Options

Intel® Pentium® 4 Processor
at 2.4GHz w/800MHz

\$859

Intel® Pentium® 4 Processor at 2.6GHz w/800MHz \$699
Intel® Pentium® 4 Processor at 2.8GHz w/800MHz \$959

ABS® Awesome 4500



450-Watt Antec Case w/Front USB 2.0 & IEEE1394
Gigabyte Intel® 865PE Chipset Motherboard
Dual Channel 512MB DDR400 Memory Upgrade to 1GB DDR400 @\$62
120GB 7200RPM 8MB Cache IDE Hard Drive
Lite-On 16X DVD and 52X CD-RW and 5-in-1 Flash Media Reader
ATI Radeon 9800 PRO 128MB 8X AGP w/TV-Out & DVI or
NVIDIA® GeForce FX 5600 w/128MB 8X AGP Video Card w/TV-Out & DVI
Realtek ALC655 Codec 6 Channel Audio
Add Creative Labs Sound Blaster Audigy 2 Sound Card @\$113
Intel® Pro/100 VE LAN Controller & V.92 PCI 56K Modem
Wireless Keyboard and Optical Mouse Set
Monsoon Planar Media 9 LCD Flat Panel Speakers
Microsoft Works 7.0
Various LCD & CRT Monitor Options

Intel® Pentium® 4 Processor
with HT Technology at 2.6GHz w/800MHz

\$1199

Intel® Pentium® 4 Processor with HT Technology at 2.8GHz w/800MHz \$1259
Intel® Pentium® 4 Processor with HT Technology at 3.0GHz w/800MHz \$1399

ABS® Awesome 5500



530-Watt Aluminum Case w/Front USB 2.0 & IEEE1394
Gigabyte Intel® 875P Chipset w/6 Dual Features Motherboard
Dual Channel 1GB DDR400 Upgrade to 2GB DDR400 @\$160
120GB SATA Hard Drive with Second Hard Drive RAID Option
Sony 4X DVD Burner & 5-in-1 Flash Media Reader
ATI Radeon 9800 PRO 128MB 8X AGP w/TV-Out & DVI or
NVIDIA® GeForce FX 5900 Ultra 128MB 8X AGP w/TV-Out & DVI
Realtek ALC655 Codec 6 Channel Audio
Add Creative Labs Sound Blaster Audigy 2 Sound Card @\$113
Intel® Gigabit Ethernet Controller & V.92 PCI 56K Modem
Microsoft Wireless Keyboard and Optical Mouse Set
Monsoon Planar Media 14 LCD Flat Panel Speakers
Corel Office WordPerfect 11 & McAfee Virus Scan 7.0
Various LCD & CRT Monitor Options

Intel® Pentium® 4 Processor
with HT Technology at 2.8GHz w/800MHz

\$1999

Intel® Pentium® 4 Processor with HT Technology at 3.0GHz w/800MHz \$2139
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The **Zensation Z3** based
on Intel® Centrino™
Mobile Technology.



Absolute Balance through Wireless Mobility

ABS® Zensation Z3 Notebook

Intel® Centrino™ Mobile Technology
Intel® Pentium® M Processor 1.4GHz
Intel® 855GM Chipset
Intel® PRO Wireless 2100 802.11b Networking

512MB DDR SDRAM
40GB Hard Drive
DVD/CDRW Combo Drive
14.1" XGA TFT Display 1024 X 768
56K V.92 Modem & 10/100 LAN
1 Firewire port & 2 USB 2.0 Ports
Firewire 1394
5 Hours Battery Life
5.40 lbs Travel Weight
Microsoft Windows XP Home Edition
1 Year Parts Warranty & Life Time Technical Support
Free 1 Year Onsite Service and 7/24 Tech Support

Upgrade/ Processor: Intel® Pentium® M 1.5GHz / 1.6GHz / 1.7GHz

Memory: 1GB DDR SDRAM

Hard Drive: 60GB / 80GB

Software: Microsoft® Windows® XP Professional

\$1389




↗ ABS® Recommends Microsoft® Windows® XP for Mobile Computing




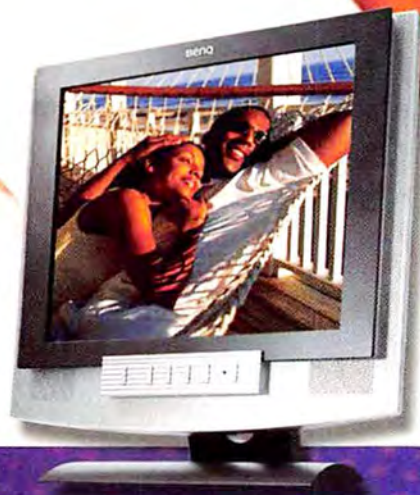
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**A+ PANEL
QUALITY**

PC 2002 BEST OF
COMDEX
FINALIST
Nov. 20, 2002 BenQ FP591
Hardware, Peripherals

BenQ
Enjoyment Matters



PC ANNOYANCES

88 50 Fixes for the Biggest PC Annoyances

Had it up to the gills with software snafus, hardware headaches, and Internet irritations? So has Steve Bass, and he's not gonna take it anymore. Here are 50 nifty tips for making life with your PC a little simpler—easy exorcisms for Windows bogeys, e-mail demons, hardware hobgoblins, audio/video gremlins, and Internet imps.



117

Cover graphics by Diego Aguirre.

PC WORLD

20TH ANNIVERSARY YEAR
OCTOBER 2003
VOLUME 21 ♦ NUMBER 10
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FEATURES

SOFTWARE GEMS

104 The Best Software You're Not Using

Dozens of great, inexpensive programs stand ready to improve your productivity at work, perk up your PC, and make your leisure time even more enjoyable. We've found them for you.



DIGITAL VIDEO

117 Good-bye, VHS Hello, DVD

We look at five video capture devices that can help you transfer your old videotapes to digital disc—and also scrutinize five of the latest ultraportable DV cameras.

APPLICATION SUITE

129 Inside Office 2003

Aside from an overhaul of Outlook, Microsoft's new "system" stresses group functions rather than individual changes to Word, Excel, and the other apps. Find out how it could help your business work better.

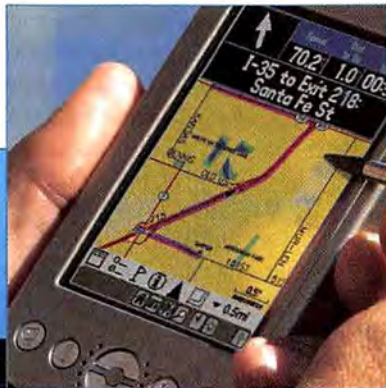


ON THE COVER





Meet the iQue™ 3600. The first PDA
 with fully integrated GPS navigation.



Success is being in the right place at the right time.

The *Garmin iQue 3600* is a Palm-powered organizer with a fully integrated GPS navigator. It keeps track of your busy schedule then gives you turn by turn directions to important off-site appointments. Enter an address, search for a restaurant, or find the rental car return – the iQue 3600 gets you there. See it at major electronics retailers or visit www.garmin.com. The iQue 3600 with GPS, voice recorder and MP3 Player.

It's the smart way to navigate your day.™



TOP 100

- 142 Digital Cameras Aim High
Sophisticated models arrive.
- 144 Top 15 Desktop PCs
- 148 Top 15 Notebook PCs
- 151 Top 5 Multifunction Printers
- 153 Top 10 17-Inch LCD Monitors
- 155 Top 10 DVD Drives
- 157 Top 10 Scanners
- 159 Top 10 Digital Cameras
- 161 More Reviews



142

DEPARTMENTS

- 21 Up Front
- 41 Letters
- 45 Plugged In
AMD goes 64-bit.
- 49 Consumer Watch
Research your next car purchase online.
- 59 Home Office
Going ape over survey sites.
- 61 Bugs and Fixes
DirectX hole, Blaster worm.
- 186 Full Disclosure
Settle on a backup strategy—or face the consequences.



162

RESOURCES

- 18 How to Contact PC World
- 176 PC World Marketplace
- 184 Advertiser Index



155

TELL US WHAT YOU THINK

Tell Us What You Think: Visit www.pcworld.com/pcwinput and rate this issue—you could win a Canon M730, a color multifunction device that lists for \$399. You'll need the subscriber number from your mailing label to take this survey online. The site explains the official rules and also how to participate in the drawing if you're not a subscriber. You can enter from September 5 through October 3, 2003.

COMING UP IN NOVEMBER

Best PC Time-Savers: Five experts share their favorite strategies for getting things done faster with tools, shortcuts, and more.
Going Wireless: Get current with Wi-Fi, as PC World's Test Center

and editors help you find the simplest, most reliable wireless gear.
Great Privacy Makeover: Who's been peeking in at your Windows? We offer an in-depth survey of the state of online privacy today.

NEWS & TRENDS

- 22 Laptop Era Dawns
As laptops get beefier, buyers are beginning to choose portables over their desktop counterparts.
- 30 DSL Speeds, Cellular Coverage
New technologies promise easy, reliable broadband connections wherever you roam.
- 32 Sneaky Apps Attack
Stealthware applications install themselves on your computer without your knowledge.
- 34 MIA: Top-Speed DVD Media
DVD drives that can write at 4X are increasingly common—but where's the 4X media?
- 34 \$40 Printer, \$40 Ink
The HP Deskjet 3520 has an amazingly low price, but its consumables will cost you plenty.
- 36 Big Images for Small Spaces
Using mirrors instead of a lens, NEC's WT600 projector is a great fit for small meeting rooms.

NEW PRODUCTS

- 72 Productivity Software
Microsoft Office FrontPage 2003, Microsoft Office Visio 2003 Standard
- 74 Desktop PCs
Hush Technologies Hush Mini-ITX, Tranquil PC
- 76 Portable Projector
InFocus LP120
- 78 Scanner
Canon CanoScan 9900F
- 80 Video Editing Software
Adobe Premiere Pro
See page 73 for a complete list of new products reviewed.

HERE'S HOW

- 162 Windows Tips
Improve Windows' performance and get more disk space with these five tips and a \$20 utility.
- 166 Hardware Tips
Compare specs for rewritable DVD drives; use a universal power supply to reduce your PC-related travel paraphernalia; track keyboard keystrokes.
- 168 Step-By-Step
Basic cleaning procedures and intensive-care measures to keep your keyboard clicking away.
- 170 Internet Tips
Create strong online passwords and store them securely; preload news sites on your portable.
- 174 Answer Line
Back up your data with the help of a batch file; find out if your PC can boot from a USB drive.



Sun Fire V210 rack-mount server

- > Powered by up to two 1.0GHz UltraSPARC IIIi processors
- > Four auto-negotiating Gigabit Ethernet ports
- > Hot-swappable, front-accessible SCSI disks



\$2995.00
CDW 485135



Adobe® Acrobat® 6.0 Professional

- > Convert any document into Adobe PDF files
- > Create electronic forms
- > View detailed artwork or large-format documents with intuitive navigation tools



\$449.00
CDW 471795



APC Back-UPS RS 1500VA

- > 1,500VA, 865W battery backup
- > 8-outlets with APC PowerChute
- > Easy overload recovery
- > Hot swap batteries



\$247.96
CDW 496788



**hp compaq business notebook
nx7000 series**

- > 1.4GHz Mobile Intel® Pentium® M processor
- > Memory: 512MB
- > 40GB hard drive
- > 8X DVD-ROM drive

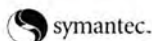


\$1689.95
CDW 501526



Symantec™ Firewall/VPN 200R

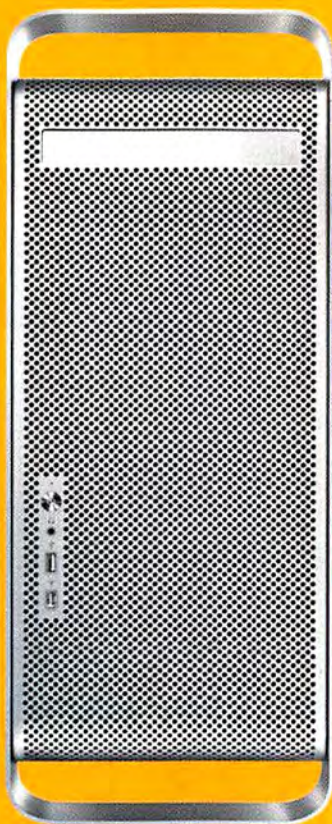
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- > Provides secure and cost-effective Internet connectivity between locations
- > Create a high-speed local network that enables secure access



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CDW 326337



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- > Memory: 256MB RAM
- > 80GB hard drive
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> **5:05 am.** Custom configuration expert Henry Young trains for the mother of all last minute orders.

A man, Henry Young, is shown from the waist up, sitting at a table and solving Rubik's cubes. He is wearing a dark blue jacket with white sleeves and a "CDW" logo on the left chest. He is looking down at the cube he is holding. On the table in front of him are several other Rubik's cubes, some of which are partially solved. In the background, there is a bookshelf with books and a small potted plant. A CDW logo is visible on the bookshelf. The overall scene is a metaphor for solving complex problems, representing the company's expertise in custom configuration.

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This Month We Look at Ultraquiet PCs, Digicamcorders, Super Software, and More

FANLESS COMPUTERS, filmless camcorders, and fantastic software selections grace our latest issue. A list of the newcomers we cover follows, along with each item's star rating, if any (preproduction products are ineligible for stars). Visit find.pcworld.com/10860 for more information on PC World's Star Ratings.



74

DESKTOP PCs

- 144 Dell Dimension 4600 ★★★★★
- 144 Dell Dimension 8300 ★★★★★
- 144 Gateway E-6100 ★★★★★
- 74 Hush Technologies Mini-ITX
- 144 Micro Express MicroFlex 32A ★★★★★
- 144 Polywell Poly 880NF2-2800 ★★★★★
- 144 Sys Technology Performance 3200+ ★★★★★
- 74 Tranquil PC

NOTEBOOK PCs

- 148 Amax Elite 6053M ★★★★★
- 148 Chem USA ChemBook 2300 ★★★★★
- 22 Hypersonic Sonic Aviator ZX7
- 148 MPC TransPort T2000 ★★★★★
- 22 Toshiba Satellite P25-S507
- 148 Toshiba Tecra M1 ★★★★★

INK JET PRINTERS

- 34 HP Deskjet 3520 ★★★★★

MULTIFUNCTION PRINTERS

- 151 HP PSC 2175 ★★★★★
- 151 Lexmark X56170 ★★★★★

17-INCH LCD MONITORS

- 153 Cornea C1704 ★★★★★
- 153 HP L1702 ★★★★★
- 153 IBM ThinkVision L170p ★★★★★
- 153 Sony SDM-HS73 ★★★★★

DVD-REWRITABLE DRIVES

- 155 AOpen DVD+RW/+R DRW4410 ★★★★★
- 155 CenDyne Dual-Format Internal DVD Recorder ★★★★★
- 155 Plextor PX-504UF ★★★★★

DIGITAL CAMERAS

- 159 Canon PowerShot G5 ★★★★★
- 159 Nikon Coolpix 5400 ★★★★★
- 159 Olympus C-750 Ultra Zoom ★★★★★
- 76 Sony Cyber-shot DSC-U60 ★★★★★
- 159 Sony Cyber-shot DSC-V1 ★★★★★

DIGITAL CAMCORDERS

- 119 Canon Elura 50 ★★★★★
- 120 Hitachi DZMV350A DVD Camcorder ★★★★★
- 122 Samsung SC-D33 ★★★★★
- 124 Sharp Viewcam Z VL-Z7U ★★★★★
- 126 Sony DCR-TRV70 ★★★★★

PROJECTORS

- 76 InFocus LP120
- 36 NEC WT600 DLP

SCANNERS

- 157 Canon CanoScan 500F USB ★★★★★
- 78 Canon CanoScan 9900F ★★★★★
- 157 Epson Perfection 3200 Photo ★★★★★
- 157 HP Scanjet 5550c ★★★★★
- 157 Microtek ScanMaker 6800 ★★★★★

PDA

- 84 Sony Clié PEG-UX50 ★★★★★

VIDEO CAPTURE DEVICES

- 118 Adaptec VideOh DVD ★★★★★
- 118 ADS Technologies USB Instant DVD 2.0 ★★★★★
- 118 ATI All-In-Wonder 9800 Pro ★★★★★

- 118 AVerMedia DVD EZMaker USB2.0 ★★★★★
- 80 HP DVD Movie Writer Dc3000
- 118 Pinnacle Studio MovieBox USB ★★★★★

SOFTWARE

- 105 3M Post-it Software Notes ★★★★★
- 80 Adobe Premiere Pro
- 82 Ahead Nero 6 Ultra ★★★★★
- 114 Applian Replay Radio ★★★★★
- 114 Autodesk QuickCAD 8 ★★★★★
- 106 Business Functions Pro ★★★★★
- 112 Cerious ThumbsPlus 5 ★★★★★
- 114 Corel Bryce 5 ★★★★★
- 114 CursorArts IconForge ★★★★★
- 114 Digital Broadcast Systems Diamond Cut 5 ★★★★★
- 108 FileMaker Pro 6 ★★★★★
- 105 Fisher Young Group MSGTAG Status ★★★★★
- 105 Golden Section Labs WinOrganizer ★★★★★
- 108 Hyperionics HyperSnap-DX 5 ★★★★★
- 112 Intermedia Design Helium ★★★★★
- 78 Intuit Quicken 2004
- 107 Jetico BCWipe 3 ★★★★★
- 107 MetaProducts Startup Organizer ★★★★★
- 72 Microsoft Office FrontPage 2003
- 72 Microsoft Office Visio 2003
- 112 MMedia LView Pro 2002 ★★★★★
- 112 MMoon Font Xplorer ★★★★★
- 107 Neobyte Solutions Invisible Secrets 4 ★★★★★
- 107 OpenOffice ★★★★★
- 112 Photodex ProShow Gold ★★★★★
- 105 Tiburon EPrompter ★★★★★
- 112 Unisyn AutoMate 5 ★★★★★
- 106 Word Place Yeah, Write ★★★★★

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MAIL: PC World Editorial
501 Second St. #600
San Francisco, CA 94107

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FULL DISCLOSURE: steve@cranky.com

HARDWARE TIPS: kirk_steers@pcworld.com

HOME OFFICE: homeoffice@pcworld.com

INTERNET TIPS: nettips@spanbauer.com

LETTERS: letters@pcworld.com

ON YOUR SIDE: onyourside@pcworld.com

PLUGGED IN: steve_fox@pcworld.com

PRIVACY WATCH: privacywatch@pcworld.com

STEP-BY-STEP: stan_miestkowski@pcworld.com

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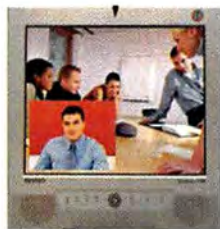
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Help for an Annoyed Nation

You've got tech gripes. And we've got fixes—this month and every month.

COMPUTERS IN THE TWENTY-FIRST CENTURY were supposed to make us more productive, simplify our lives, and keep us entertained. And in countless ways, they have. But even the most visionary of sci-fi flicks never prophesied one aspect of PCs circa 2003: They're...*annoying*.

A year ago, we at *PC World* found ourselves devoting ever-increasing time to spam, pesky Web ads, poorly designed hardware, and software that seemed intent on ignoring our wishes. Gremlins like these made it tough to get work done—and they seemed to be multiplying. We asked Contributing Editor Steve Bass to find solutions for as many nuisances as possible; the resulting article, October 2002's "How to Fix the Biggest PC Annoyances" (find.pcworld.com/37601), became the cover story of our best-selling issue in two years.

Today, tech hassles seem only more aggravating. So we partnered author Bass with Senior Associate Editor Dennis O'Reilly and Senior Editor Michael Lasky—the team behind last year's article and Bass's monthly *Home Office* column—and requested a sequel.

You'll find that article, "50 Fixes for the Biggest PC Annoyances," on page 88. Rounding up dozens of new irritations, sad to say, wasn't much of a challenge. But just as he did last year, Bass eradicates them in a manner that's both relentlessly practical and genuinely amusing.

Asking Bass to return to the topic was an easy call—he's been a *PC World* mainstay since the day when a typical irritation involved Windows 2.0 running on a 286 system. "Rather than just throwing up his hands at problems, Steve takes them as a challenge," says O'Reilly. "He sees the point of why we put up with annoyances,



WHEN THE GOING GETS AGGRAVATING, we turn to 'PC Annoyances' author Bass, left, and editor O'Reilly.

and why it's worth looking for solutions."

This year, Bass didn't stop at solving 50 tech headaches; in October, O'Reilly and Associates (www.oreilly.com, no relation to Dennis) will release his first book, *PC Annoyances*, with more fixes than we could ever stuff into one magazine article. O'Reilly already publishes the popular *Annoyances* computer books, so it's no wonder the company signed Bass up.

HOW WE DO HOW-TO

SIMPLY ACKNOWLEDGING that technology hassles exist can be cathartic in itself. But what's really important about our two articles and Bass's book are the fixes they offer. And tracking down solutions for everything from minor snafus to full-tilt disasters is in *PC World's* DNA.

Every month, our *Here's How* section—also edited by O'Reilly and Lasky, along with Associate Editor Eric Dahl—is devoted to problem-solving tips on PCs and related technologies. Its columns, and our meaty features on topics such as troubleshooting hardware and customizing Windows, are as key to this magazine's mission as product reviews, buying advice, and news analysis.

Every how-to article we publish gets a thorough reality check by our senior technical editors, Karl Koessel and Rex Farrance—who, with 36 years of tenure between them, are by far *PC World's* longest-serving editors. Though Koessel and Farrance provide an important quality-control function for the entire magazine, their contributions to how-to articles are particularly vital. "With multiple versions of Windows, we need to be careful that we notice where the versions differ, and that we don't leave readers behind or lead them astray," says Koessel, who spends his workday surrounded by four PCs loaded with multiple operating systems and applications.

These tips articles may not be the most glamorous stories we produce, but surveys consistently show that they're among the most valuable to readers. And they're pretty special to us, too: "We'll hear from readers who say a tip solved a problem, and I can sense how delighted they are—because I've been in that same boat," explains O'Reilly. "We all have. And it's nice to be reminded that what we do here is to help people get more out of the technology in their life." ■

Contact *PC World* editor Harry McCracken at mageditor@pcworld.com.

NEWS & TRENDS

EDITED BY RAMON G. MCLEOD

INSIDE

- 24 17-INCH-LCD LAPTOPS
- 30 WIRELESS BROADBAND WITH CELLULAR COVERAGE
- 32 SOFTWARE THAT SNEAKS ONTO YOUR PC
- 34 DVD MEDIA SHORTAGE
- 34 \$40 INK JET PRINTER
- 36 NEW PROJECTOR USES MIRRORS TO BIG EFFECT

LAPTOP ERA DAWNS

NOTEBOOK POWER—AND SALES—ARE RISING FAST. WIRELESS NETWORKING GROWTH ONLY SWEETENS THE DEAL. SHOULD YOUR NEXT PC BE A LAPTOP? **BY CARLA THORNTON**

ONCE CONSIDERED poor choices for serious computing, notebooks are earning new respect from hard-core fans of desktop PCs.

Why the change of heart? Today's notebooks offer powerful processors, dazzling large LCD screens (see "Displays

Get Big, Really Big" on page 24), improved upgradability (see "New Upgrade Options Abound" on page 26), and features as potent as those you'd get on many desktops—all at attractive prices. Couple that with the siren song of ubiquitous wireless connectivity, and

more buyers are seriously considering a notebook for their next business or home PC.

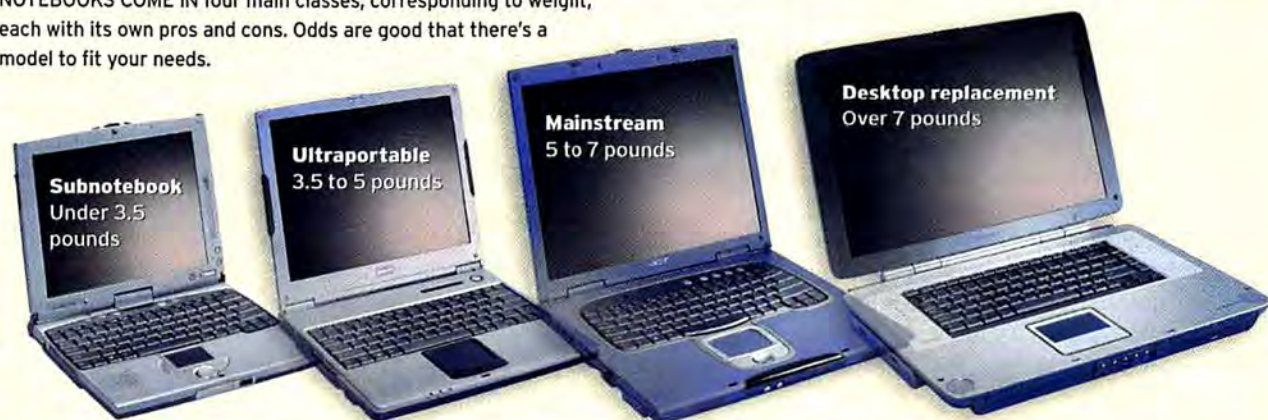
Notebook sales reflect this trend. This spring, according to NPD Group, retailers for the first time made more money selling laptops than desktops: Portables accounted

for 54 percent of May's nearly \$500 million in PC sales. Based on unit sales, desktops remain the retail king, accounting for about 60 percent of the May purchases, NPD says. Still, while in 1999 one in ten home computer buys worldwide was a laptop, these

PHOTOGRAPH BY MARC SIMON

NOTEBOOK CHOICES: WHICH TYPE IS RIGHT FOR YOU?

NOTEBOOKS COME IN four main classes, corresponding to weight, each with its own pros and cons. Odds are good that there's a model to fit your needs.



days it's one in five, points out Roger Kay, vice president of client computing at IDC.

Plunging prices help set the hook. A notebook still typically costs half again as much as a similarly equipped desktop. But this year for the first time, you can buy a portable with a 2.2-GHz Celeron CPU, a CD burner, a 30GB hard drive, and a 14-inch LCD for under \$1000.

REAL POWER

FOR BUYERS willing to spend more, today's crème-de-la-crème laptops approach desktop power in many ways—and across different weight classes (see table below for details).

Shar Jabbari hates the buzz phrase “desktop replacement,” a favorite of laptop vendors trumpeting their units' desktop PC-like features. “Two-thirds of notebooks called that don't have the storage and expansion options I need,” grouses the San Carlos, California, music promoter.

But Jabbari admits his new IBM ThinkPad A31p comes very close to earning the title. The 7.7-pound unit has a 1.9-GHz Pentium 4, a 60GB drive,

two optical drives, and 1GB of RAM. When he snaps on the docking station, which adds a half-size PCI slot, four USB 2.0 ports, and a third drive bay, among other things, the note-

“I would definitely choose mobility over [a desktop's] slightly faster speed.”

book almost matches the capabilities of his 16-month-old workstation, enabling him to handle his clients' multimegabyte music and image files with ease. “Now that I have the A31p, it will be a long time before I feel like I have to buy a new desktop,” he says.

Matt Barrow, a graphics design student, has been pleasantly surprised by the power of the latest laptops. His new 5-

pound Dell 600M, an ultraportable with a fast 1.6-GHz Pentium M chip and 512MB of RAM, matches the power of his four-month-old desktop when running demanding programs like Photoshop, Illustrator, and Dreamweaver.

Unlike some colleges, Barrow's school does not make notebooks a requirement, but he finds the compact size of a notebook a significant plus in cramped university quarters.

“All in all, I would definitely choose [a notebook's] mobility over [a desktop's] slightly faster speed. The ability to work anywhere saves me a lot of time and money.”

Our charts reflect the growing power of notebooks, too. For instance, the power Best Buy in this month's *Top 15 Notebook PCs* chart, the 6.2-pound ThinkPad T40, earned a PC WorldBench 4 score of 124, just 11 percent lower than the 140 score of our power desktop Best Buy, the ABS Ultimate M5 (see the *Top 100* section, starting on page 142).

These days you can get laptops with up to 2GB of RAM, a big boost in multitasking ▶

IN BRIEF

Product Pipeline



LET THE MP3s PLAY: Rio's new line of digital audio players includes both hard-drive and flash devices, as well as one that offers an innovative new storage format. The \$299 Rio Nitrus (above) is among the first players to feature the new Cornice Storage Element, a small device thinner than a flash memory card. The Nitrus has 1.5GB of storage, enough to hold about 375 typical songs, and is smaller than a deck of playing cards. The \$399 Rio Karma, meanwhile, presents a 20GB hard drive in a square package that is somewhat thicker than the Nitrus. Both devices support USB 2.0 for quick and easy transfer of music files. Find pcworld.com/37547



Tidbyte

SPAM Watch EVER WORRIED that your spam protection could be too powerful? False positives, legitimate e-mail that is incorrectly identified as spam and blocked, could be just as problematic as unsolicited messages: Ferris Research reports that false positives will cost U.S. businesses almost \$3.5 billion this year alone.

	Subnotebook	Ultraportable	Mainstream	Desktop replacement
Pros	Thanks to low weight and compact size, ideal for users who are constantly on the move.	Offer high-speed (though not the fastest) processors and very good weight/power/battery-life balance for frequent travelers; thinner than mainstream units.	Feature top-speed processors; have better battery life than desktop replacement units; many come with combination optical drives. The sweet spot for many users.	Most well-endowed, with the fastest CPUs, biggest screens, and largest hard drives; widest assortment of ports; often have two modular bays, for multiple optical drives; often a good sound system.
Cons	Cramped keyboards; LCDs 12 inches or smaller; battery life a bit shorter than in ultraportables; typically no integrated optical drive; generally less powerful than units in the other classes.	May include only one optical drive (which may not be in a modular bay); some designs squeeze the keyboard a bit; often have slightly smaller screens than mainstream notebooks.	Do not offer the largest screens; still a bit heavy for frequent travelers; typically provide only one modular bay.	Too heavy to haul around frequently; battery life of the top-speed, best-equipped models may be under 2 hours.

power. And this fall, Dell's Inspiron 8600 will be among the first to bear 128MB of graphics RAM, long a desktop standard. Look, too, for more models boasting dual-format rewritable DVD drives (typically -R/RW and +R/RW), obviating the need to commit to one format. (Sony's GRT series already has such a drive.)

WIRELESS MOBILITY

THE GROWTH OF networking—particularly the popularity of wireless networking—has given notebooks another

leg up. IDC says that by year's end, more than half of the roughly 6 million U.S. households that have networks will have added some type of wireless LAN. It's highly likely these users are making their next PC a notebook, says analyst Jonathan Gaw. "What's the point of having a wireless network if you're going to be chained to a desktop?"

IBM, Dell, and other major vendors report that now more than half their customers (two to three times the numbers in 2002) choose the wireless op-

tion, even though obtaining the built-in antennas and an 802.11b, a/b, or b/g radio card costs about \$50 to \$75 extra.

Intel's ad blitz for Centrino notebooks—which combine a Pentium M CPU, the PRO/Wireless 2100 802.11b Mini-PCI card, and the 855 chip set—may have helped cement the connection between wireless connectivity and notebooks in users' minds, giving portables a sexy wireless edge.

According to a 2002 Gartner Dataquest study, however, less than 10 percent of users who

take advantage of public wireless access do so regularly; most people do no more than try it out once or twice on a lark. One limitation is the small number of hot spots where people can use their notebooks' wireless capabilities—only 14,000 worldwide in 2002. But Gartner Dataquest predicts that the number will rise to 167,000 in 2008 and serve 35 million regular wireless users.

Until then, wireless's promised convenience seems to be enough to spur notebook ►

WIDE-ASPECT LCDs

DISPLAYS GET BIG, REALLY BIG

APPLE THREW DOWN the gauntlet with the Powerbook G4, the first notebook to feature a 17-inch screen. Now a handful of Wintel challengers are shipping their own laptops with the dazzling wide-aspect display. Do they measure up?

To find out, we test-drove Toshiba's Satellite P25-S507 and Hypersonic PC Systems' Sonic Aviator ZX7. (VoodooPC, the only other vendor shipping such a notebook at press time, could not provide its Envy M:700 model by our deadline.)

There's no denying it: 17-inch screens are eye-popping. Resembling mini LCD TVs, they display brilliant graphics and are easy to read, even at their native resolution of 1440 by 900 pixels.

Though none of these systems are ideal for war warriors, these first Windows notebooks are much heavier and thicker than Apple's trendsetter. While just as attractive as the 1-inch-tall, 6.8-pound Powerbook, the P25 and ZX7 measure 1.8 and 1.7 inches tall and weigh 9.8 and 9.1 pounds, respectively.

However, the Powerbook starts at a heart-stopping \$3299. For \$2099, you can get a P25-S507 with a 2.8-GHz Pentium 4 chip, 512MB of RAM, 32MB NVIDIA GeForce FX Go5200 graphics, a DVD-R/RW drive, wireless 802.11a/b connectivity, a 60GB hard drive, an SD memory card slot, and Windows XP Home. Buying the \$2699 P25-S607 model gets you 64MB of graphics RAM, a DVD Multi drive (which also burns DVD-RAM discs), and XP Media Center Edition.

The P25's modest set of audio buttons and separate volume



HYPERSONIC PC Aviator ZX7 (left) and Toshiba Satellite P25-S507.

wheel do a good job of controlling the fairly loud stereo sound, but we missed the bass-thumping subwoofer found on other Satellites.

Whereas the P25 aims to be your all-in-one multimedia center, the Sonic Aviator ZX7 offers standard functions along with a leading-edge LCD and unrelated extras. Among its advantages are a superior keyboard—which feels steadier than the P25's and includes a

separate numeric keypad—and richer sound, thanks to a subwoofer.

However, the ZX7 has no audio controls or XP MCE upgrade option. A fixed floppy drive eliminates the two-optical-drive option, making the unit a bit clunky for burning discs. The closed design extends to the RAM and hard drive, which are tricky to remove.

The ZX7 also features a small Web camera built in to the lid (the camera wasn't working on our unit). That, along with Bluetooth connectivity, an open memory slot, and a slightly faster CPU and graphics card than the P25's, brings the ZX7's price to \$2890.

For all their stunning size, 17-inch LCDs, like those of most notebooks, are not perfect multimedia displays. To make games fill the screen, we had to lower the resolution to 1024 by 768, and we could not get rid of the familiar black border in DVD movies at all. Good news, though: System prices are already dropping.

By the time you read this, HP should be shipping the Pavilion ZD7000, a 9.3-pound unit with 128MB of RAM, an 80GB hard drive, a 2.4-GHz P4, and a 17-inch LCD for only \$1799.

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purchases. Even companies without wireless LANs are buying wireless-ready laptops, likely to prepare for a future changeover, says IDC's Kay.

STORAGE LAGS

ONE AREA where notebooks have not narrowed the gap with desktops is storage. During the 1990s, notebook hard drives doubled in size roughly every 12 months, providing most users with ample room for files. But the increase in notebook hard drives from 40GB to 80GB has taken two years. Power desktops, meanwhile, have surged from an average of about 40GB two years ago to an average of about 200GB today, making them a better value for people who fill up space quickly with multimedia and other large files.

Manufacturers are simply hitting a wall squeezing more

data onto small platters, according to Ashok Kumar, senior research analyst with U.S. Bancorp Piper Jeffrey.

We might see 100GB or 120GB notebook drives in late 2004, predicts Kumar, but they're unlikely to double to 160GB for several years.

For now, hard drives boasting closer-to-desktop speed—if not space—are showing up in new notebooks, such as HP's Pavilion ZD7000. If you can't afford a new portable sporting a 5400-rpm or 7200-rpm hard drive, consider getting an easy-to-use kit like Apricorn's to upgrade your old portable's 4200-rpm clunker (see sidebar below).

DESKTOPS FOREVER?

NO MATTER how worn the marketing phrase "desktop replacement" becomes—or how well future laptops fulfill

the promise—don't expect full-size PCs and plug-in monitors to vanish any time soon.

If you're on a budget, desktop PCs, with their cheaper-to-make components, are a better buy than laptops. They're easier to upgrade and tend to be a bit faster, too. Intel will release a new version of the Pentium M, code-named Dothan, this year, but the company's next-generation desktop chip, code-named Prescott, will be out at around the same time and may very well leave notebook users in the dust once more, says IDC's Kay. Also expected early this fall, the Athlon 64, AMD's latest desktop chip, should further increase desktops' power.

Even so, notebooks will keep their core advantage: mobility. And users will simply wait for the performance gap to close inevitably once again. ■

IN BRIEF

Product Pipeline



SEE-THROUGH SCANNER:

The HP Scanjet 4670 scanner saves plenty of space with its unique, vertical, ultrathin design. The \$199 device includes a transparent, scratch-resistant window that allows you to see objects as they're being scanned. It also features 2400-dpi resolution and 48-bit color, and it includes ArcSoft Panorama Maker software to assemble scans of large items done in sections. find.pcworld.com/37544

HARDWARE

NEW UPGRADE OPTIONS ABOUND

UPGRADING notebooks used to mean adding RAM, or perhaps swapping in a larger hard drive. Now, one company also lets you upgrade graphics, and new drives are bringing near-desktop drive speeds to laptops.

Alienware will sell the first user-installable NVIDIA GeForce FX 5600 and ATI Mobility Radeon 9600 cards for its heavy-duty Area-51M gaming notebooks. Each includes 128MB of video RAM and will cost around \$300.

We tried out this groundbreaking upgrade. It's not entirely elegant, requiring you to uninstall video drivers before taking a screwdriver to a large panel on the bottom of the system. But the large cards are easy to pop in and to get running. Alienware will offer additional cards as the vendors introduce new graphics chips. In informal tests, we didn't see performance differences on standard productivity apps, but we expect more impact on demanding games.

The latest crop of notebook hard drives delivers both extra storage and a speed boost. We tried two such drives, Seagate's 40GB

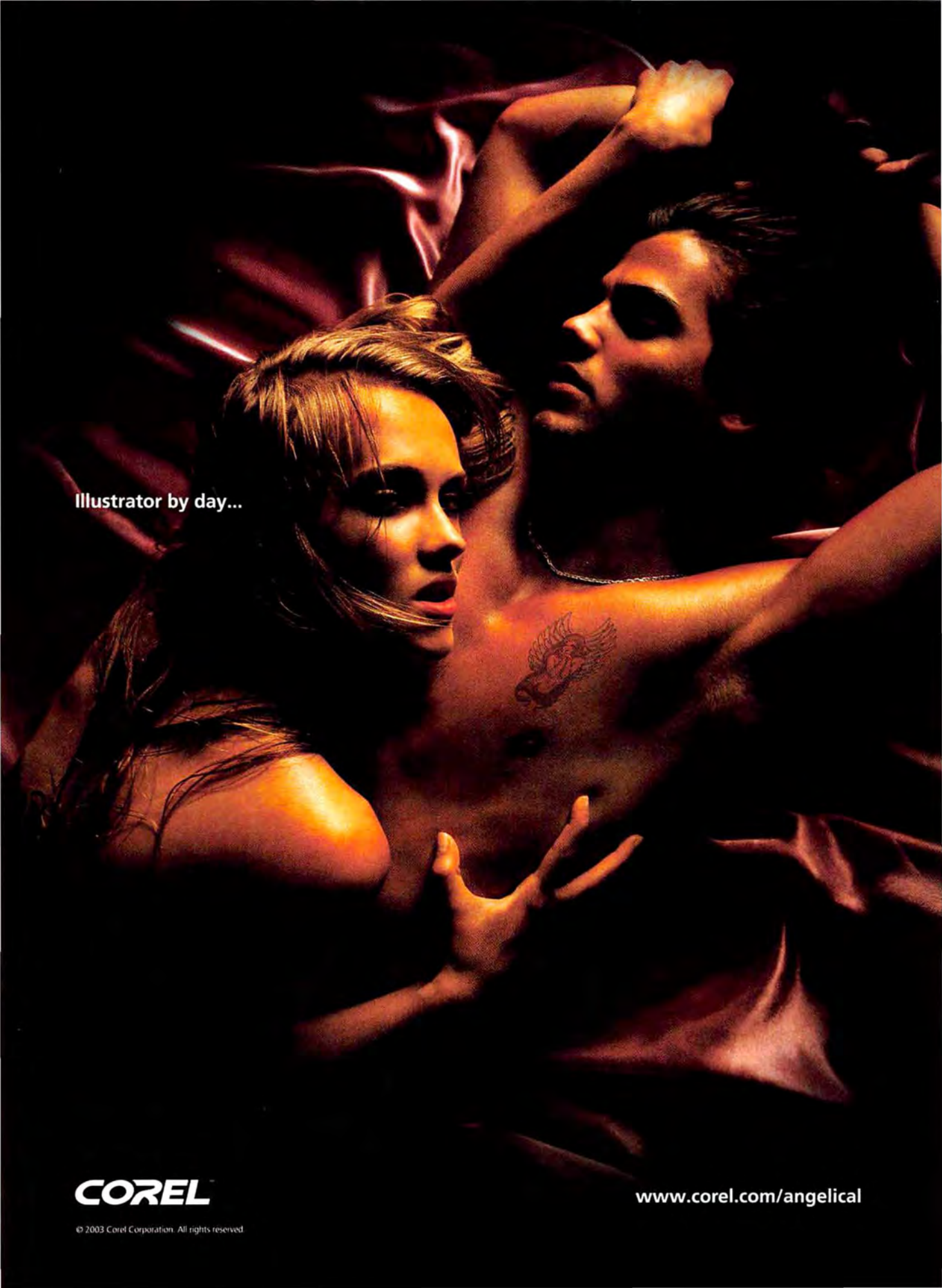


ALIENWARE'S Area-51M system with ATI Mobility Radeon 9600 upgrade card.

5400-rpm Momentus (\$145) and Hitachi's 60GB 7200-rpm Travelstar 7K60 (\$305), replacing the 4200-rpm 5GB IBM Travelstar drive in our two-year-old Dell Inspiron 2500. (Though these rpm figures are like those of desktop drives, overall laptop drive speed is a bit slower due to physical drive size.)

To bypass the chore of backing up data and reinstalling apps, we used Apricorn's \$89 (list) EZ Upgrade kit with each new drive. We simply slid the new drive into Apricorn's external enclosure, plugged it into our notebook's USB 1.1 port, and used the bundled software to copy our data—and OS—to the new drive. Ninety minutes later the job was done, and we put the new drive in our laptop.

In our informal tests, the 7200-rpm Hitachi drive did not perform everyday PC chores any faster than Seagate's 5400-rpm Momentus. But both were twice as fast as our old 4200-rpm drive at launching an Excel file, and they performed a search about 25 percent more quickly. Not bad for under 2 hours' work.



Illustrator by day...

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MOST OF THE people who have broadband Internet access love it, but not everyone who wants it can get it. DSL, cable, fiber optics, and other wired high-speed alternatives simply aren't available to every office and home. But what if you could get a wireless broadband data connection as easily as, say, a cell phone signal?

Satellite and so-called fixed wireless services have delivered broadband wireless Internet access for several years, but they've typically required dishes and/or line-of-sight access to transmission towers, making them expensive and a hassle to deploy. A new generation of wireless technologies, however, eliminates these problems. We tried such services from Navini Networks and IPWireless and were impressed by the speed and ease of use that both provided.

WIRELESS, NOT WI-FI

WE TESTED Navini's technology in Houston, where Sprint is trying it out. Navini's wireless modem measures 6.5 inches tall with its 2-inch antenna raised, 6.5 inches deep, and 2 inches wide. After attaching the unit to a laptop with an ethernet cable, we were immediately able to configure our connection by launching a browser and entering an assigned IP number—no soft-



INTERNET UNTETHERED: Roofing contractor James Stepp uses Clearwire's IPWireless service to e-mail his office from job sites.

ware installation required. Top speeds within the trial coverage area were 1.5 megabits per second for downloads and 987 kilobits per second for uploads, with typical speeds about 10 percent less. Navini says carriers should be able to offer its service at costs competitive with those of DSL and cable, whose speeds typically run from 256 kbps to 1.5 mbps.

We tested IPWireless's technology on the Hawaiian island of Maui, where basic residential service is offered commercially by a local ISP, Maui Sky Fiber, for \$30 a month. After installing a driver and hooking up IPWireless's external USB modem (a device slightly larger than a typical PDA), we were automatically taken to a sign-up Web site and were soon experiencing download speeds between 300 kbps and 400 kbps (the ISP sets the limits; IPWireless says that its

technology can support speeds of up to 3 mbps for downloads and 1 mbps for uploads). The IPWireless service kept us connected as we drove around in the more populated areas, something that Navini's technology doesn't yet do.

BETTER THAN DSL

IN JACKSONVILLE, Florida, where an ISP called Clearwire has deployed IPWireless, roofing contractor James Stepp says that a single Clearwire account with multiple IP addresses serves his laptop in the field as well as desktop PCs in the company's office and a colleague's home office. "I can e-mail the office and get a bid right away," he says. For Stepp, Clearwire was a welcome replacement for another ISP's unreliable DSL service.

Both IPWireless and Navini use base stations that can be deployed on existing cell phone

sites, a potential that would allow a company like Sprint to compete against wired broadband service providers. In fact, IPWireless is based on the UMTS (Universal Mobile Telecommunications System) standard for next-generation cellular phone networks. Navini's service isn't based on a standard, but the company is participating in the IEEE's working group for a new wireless broadband standard, 802.20, designed specifically for mobile users.

Intel, meanwhile, backs yet another IEEE standard, called 802.16a or WiMax, which originally focused on fixed wireless infrastructure for cell phone sites and the like but is developing end-user-friendly variants. And while today's Wi-Fi (802.11b) hot spots typically have a range of no more than 100 to 200 feet, companies like Vivato have developed technologies to extend Wi-Fi's reach to over a mile. Other companies that have developed wireless broadband technologies include ArrayComm and Flarion.

IDC analyst Shiv Bakhshi says these technologies could benefit several types of users, ranging from businesspeople like Stepp, who travel within a city, to users in homes and offices that can't get wired broadband, or to those who can get it but prefer a wireless service. The services we tested seem to work well, but which ones will win, who will deliver them, and how quickly they will arrive remain unclear.

—Yardena Arar ■

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CONSUMER ALERT

SNEAKY APPS ATTACK

MORE-AGGRESSIVE APPLICATIONS ARE CREEPING ONTO YOUR HARD DRIVE, SERVING YOU ENDLESS ADS OR RESETTING YOUR BROWSER.

IF YOU'RE BESET by icons that appear in the system tray without warning, or by pop-up ads that run even when your browser isn't open, or by a mysteriously reconfigured browser, you aren't alone. The culprits—among them MemoryMeter and Rapidblaster—represent a new and more aggressive breed of application that's often called stealthware.

Some stealthware apps track you as you surf a given site. Most of them are adware programs that serve up streams of ads no matter what you're doing on your PC. (We repeatedly contacted these stealthware companies for comment; they did not reply.)

What these apps have in common is their often covert entry: Stealthware apps are not illegal, but like worms and viruses, they can exploit vulnerabilities or low security settings in Internet Explorer to install themselves without so much as a dialog box of warning. Worse, some stealthware is designed to bypass firewalls and other such safeguards.

Stealthware is found mostly on ads served at free Web-hosting sites, at porn sites, or at so-called typo sites (those that take advantage of users' misspelling site URLs). But pinpointing the origin of some programs can be difficult; even an expert like Anthony Porter, founder of Spy-



BOB TERRY, founder of BBX Technologies, which makes a program that catches stealthware as it installs.

wareguide.com, admits that he can have trouble doing so.

The problem has become so prevalent, antivirus software maker Symantec last year began including some of these apps in its virus definition updates. "In the last six months, [stealthware] really has become an issue," says Kevin Hogan, a senior manager with Symantec Security Response.

Congress is also getting involved. Representative Mary Bono (R-California) introduced a bill that would require companies making or hosting some types of stealthware to disclose the software's presence—and get users' permission before installation.

Stealthware often

takes advantage of IE's Browser Help Object subsystem, which lets plug-ins run within IE. Normally, you get a dialog-box warning if you load a new BHO. But by default IE lets scripts—such as ones that trigger a BHO installer download—run automatically. Just visiting a site can be enough to start such a script. You end up with a new app, and your system thinks you authorized it. And because BHO applets run within IE, software firewalls don't readily catch them.

Why not just turn off scripting and BHOs? They serve legitimate functions on many sites; the Google Toolbar, for example, is a BHO. You can tell IE to get your permission each time a site wants to run a script (click *Tools>Internet Options*, select the *Security* tab, then click the *Custom Level* button; scroll to the *Scripting* area, choose the radio button by *Prompt* for all three items,

click *OK*, *Yes*, then *OK* again). But many sites run dozens of scripts per page—you'll see that dialog box a lot. Currently, Microsoft offers no way to selectively disable BHOs.

DELETE THEM

ADWARE AND spyware removers like Spybot Search & Destroy (find.pcworld.com/37325) or Ad-aware 6 (find.pcworld.com/37322) can detect and, in most cases, eliminate stealthware—provided you have the latest definitions.

Spybot also includes a BHO scanning tool that compares a list of your PC's BHOs with Spybot's database of "good" and "bad" plug-ins so you can disable unwanted ones. Symantec's Norton AntiVirus identifies some stealthware apps, such as Flyswat and SaveNow, and targets them; the firm plans more protection. Similarly, CA's ETrust anti-virus package recently added CWS to its list of targets. Spywareguide.com offers a Block List File download, which changes a few Windows Registry settings to disable many aggressive self-installers.

BBX's ImmuneEngine (revised in July) attacks the problem another way: It detects, and can delete, new executable

files as they appear. "It's like a protective layer on top of Windows," says Bob Terry, BBX founder.

You can also try an IE alternative, such as Mozilla or Opera, but the best defense is to watch where you surf, and to keep your protective apps up-to-date.

—Andrew Brandt ■



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DVD

MIA: TOP-SPEED DVD MEDIA

FASTER DRIVES, BUT WHERE ARE THE DISCS?

WHETHER YOU just got a new PC with a DVD burner or you bought a drive to add to your system, chances are you've run into the same roadblock that buyers everywhere have: Either there's no DVD media in stores, or if it is available, it doesn't match the speed rating on your new drive.

This isn't new—faster CD drives typically lacked match-

ing media for a couple of months—but the situation has worsened with DVD, admits Brad Yeager, senior product marketing manager for optical media at Memorex.

For example, Memorex first shipped 4X DVD-R media in August—more than nine months after 4X DVD-R drives came out. Other companies have also introduced 4X me-

dia, but a national shortage of 4X DVD media of all types still lingers months after the drives for them shipped.

BOTTLENECK?

MEDIA LAGS FOR two main reasons, say industry experts. One is that drives with faster write speeds can come out even before the corresponding media specification is ratified.

Drive makers have little incentive to hold back their drives since they can get a premium for faster models, says Wolfgang Schlichting, IDC research director. And even after the spec is ratified, media makers must submit their discs for approval—a process lasting up to two months to ensure quality high enough for wide compatibility with existing DVD drives.

The second reason for delay is the time needed to ramp up qualified media production. That can take another two months, says Rich D'Ambrise, director of technology at media maker Maxell.

To support faster write speeds, "you have to either make the media dye composition more sensitive or you have to increase the laser power [on the drive]," explains IDC's Schlichting.

In the past, media vendors have been the ones to act, making the dye more sensitive. Now, Plextor has tackled the media scarcity problem from the hardware side with its new \$299 PX-708A dual-format drive, the first to offer 8X DVD+R. The modified drive allows burns at 8X even with 4X DVD+R media, says Howard Wing, head of Plextor's marketing. (The model we received was not fully functional and could not be tested.)

Faster media will be available, too—eventually.



INK JET

\$40 PRINTER, \$40 INK

LOW-COST HP INK JET IS NO BARGAIN FOR USERS WHO PRINT OFTEN.

HEWLETT-PACKARD'S Deskjet 3520 is the first ink jet printer to be introduced at \$40. Surprisingly, we found its overall print quality to be fairly good—but you'll pay as much for one set of replacement black and tricolor cartridges as you did for the printer itself.

At 4.5 pages per minute for text and 1 ppm for graphics, the 3520's tested speeds roughly match those of our Best Buy from the July issue's *Top 10 Printers*, the \$50 Canon i320 Color Bubble Jet (find.pcworld.com/37511). Text print quality was good, but not quite as sharp as the i320's. Photo quality was very good on high-end photo paper, less so on standard paper.



HP DESKJET 3520: The ink will cost you.

Rebates over the past two years have pushed \$50 or \$60 ink jets down into the \$40 range, and new printer prices may drop further, albeit not as quickly as in recent years, says IDC analyst Jennifer Thorwart. But ink is another

story: Thorwart says that the costs of consumables subsidize the low prices of hardware.

HP says entry-level printers like the 3520 are best for those users who print infrequently and are more price-sensitive about hardware than about ink and pa-

per. We agree, to a point. If you plan to print mostly photos—which use up the most ink—you may be happier with a more expensive ink jet that uses less-expensive ink. For the 3520, ink costs \$2.74 per milliliter for color and \$1.80 per ml for black—about 75 cents more per ml for black and 68 cents more per ml for color than the inks many of HP's pricier printers use.

—Anush Yeghazarian ■

Deskjet 3520

Hewlett-Packard

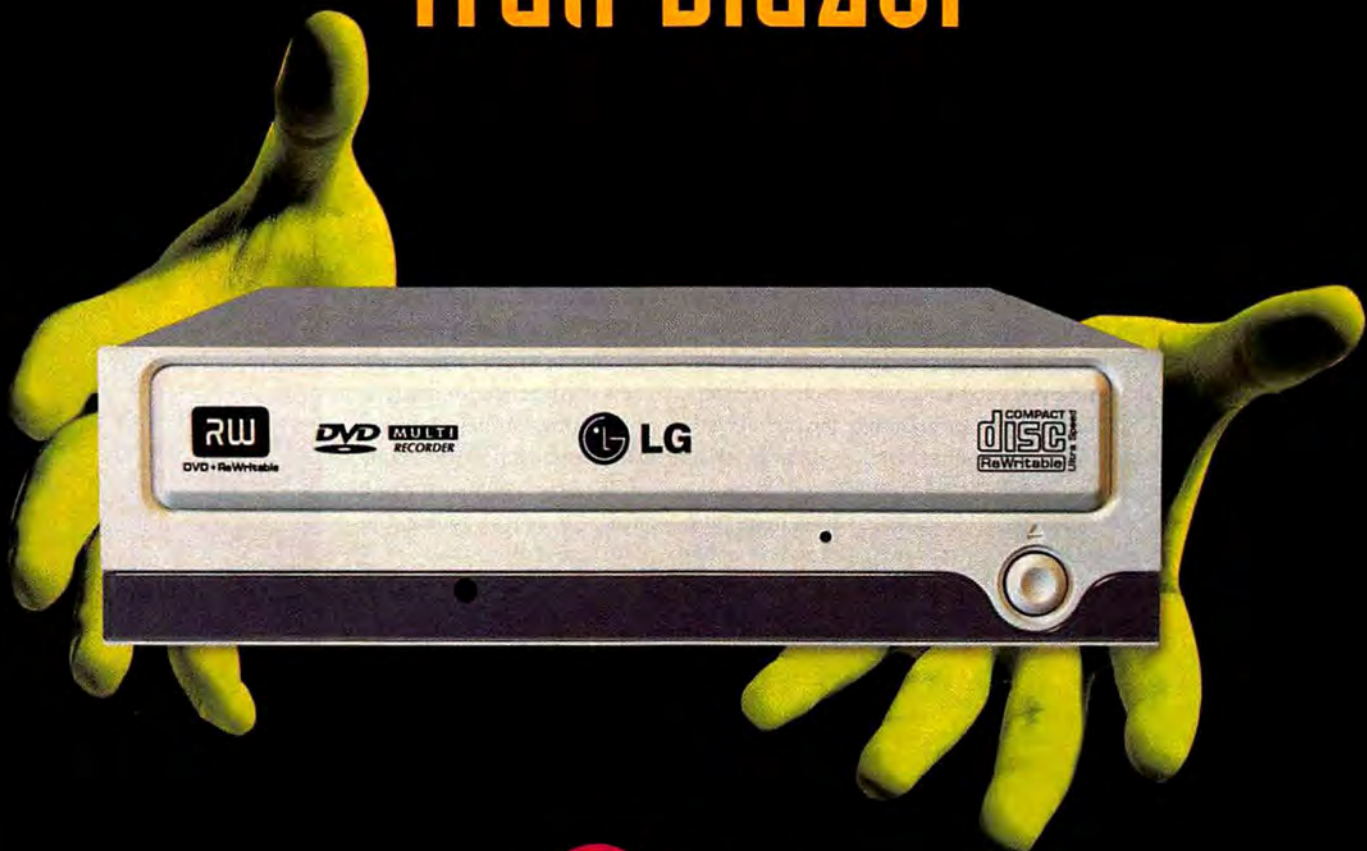
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—Melissa J. Perenson ■

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PROJECTORS

BIG IMAGES FOR SMALL SPACES

NEC'S WT600 CAN GENERATE A LARGE IMAGE ONLY INCHES AWAY FROM A SCREEN.

TIRED OF RUNNING your presentation from the back of the room, where a projector typically sits alongside your notebook? NEC's WT600 DLP projector replaces the traditional optical lens with a series of aspheric (curved) reflecting mirrors, which allows it to be positioned just inches from—

and slightly below—the screen (see diagram). This “short-throw” setup allows presenters to work in close quarters, or in front of the screen, without worrying about blocking the large projected image.

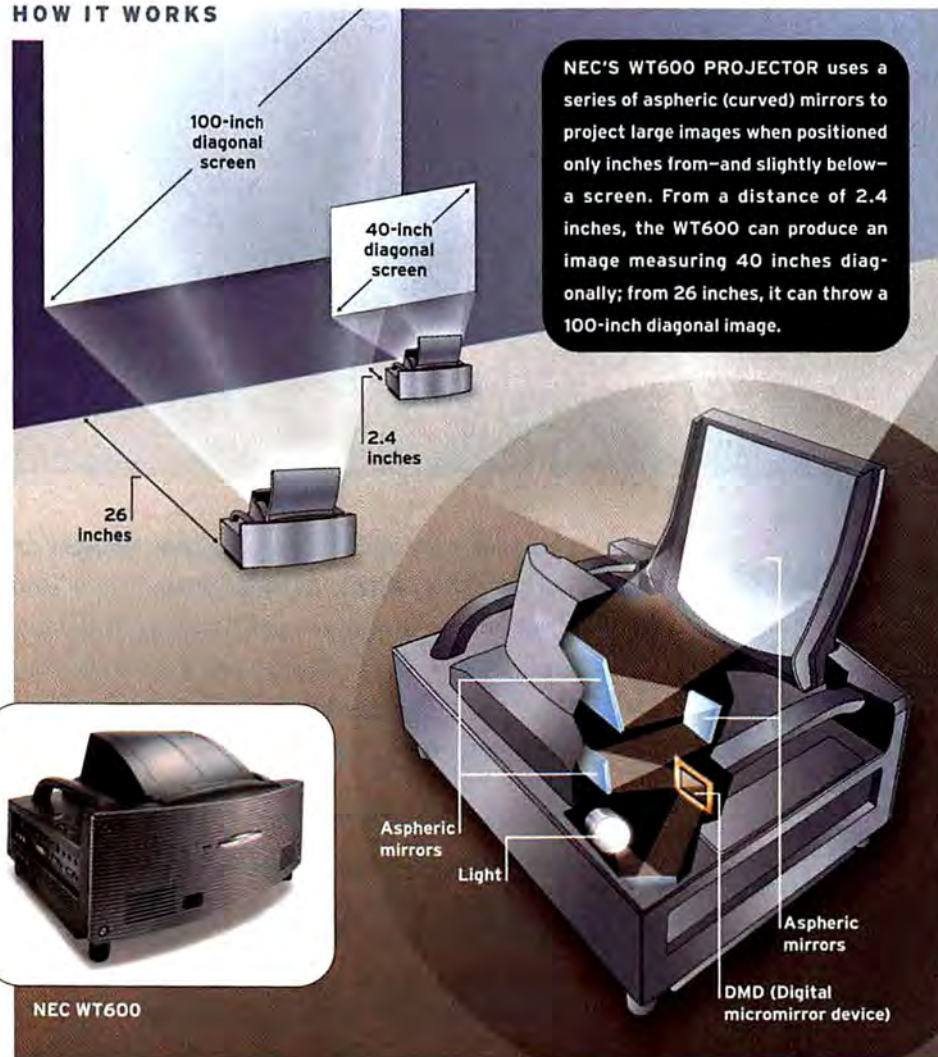
Working with a preproduction model a mere 6 inches from the screen, I was amazed

at its ability to project a clear and colorful 46.5-inch diagonal image. The only drawback: a slight pincushioning effect at the top, which NEC says will be diminished in the shipping product.

At 13 pounds, with XGA (1024 by 768) resolution, 1500 ANSI lumens of brightness, and network capabilities, the \$6995 WT600 is an excellent choice for small to medium-size conference rooms. The projector also has standard video/audio inputs (plus built-in speakers), which make it suitable for showing TV, DVDs, and videos.

—Richard Jantz ■

HOW IT WORKS



IN BRIEF

Product Pipeline



DISPOSABLE DIGICAM:

Ritz Camera Centers has unveiled a single-use digital camera that costs only \$11. The Dakota Digital Single-Use Camera features 12MB of internal memory to capture up to 25 snapshots, plus an automatic flash, but you must return it to Ritz to obtain prints and a photo CD of your photos. find.pcworld.com/37493



UNTANGLE YOURSELF:

Keyspan's Zip-Linq retractable cables are available for cell phones, PDAs, USB devices, and other products. The small Zip-Linqs fit in your palm and unwind to reveal at least 30 inches of cable. Prices range from \$14 up to \$29. find.pcworld.com/36734

Tidbyte

DON'T BE AFRAID: Linux isn't just for geeks anymore. Doing office tasks such as composing e-mail, creating files, and copying CDs was only slightly more difficult for a group of novices using Linux-based systems than for one using Windows XP-based PCs, according to a recent study by Relevantive, a German research firm.



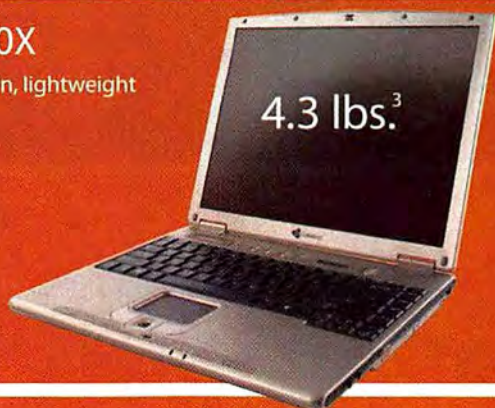
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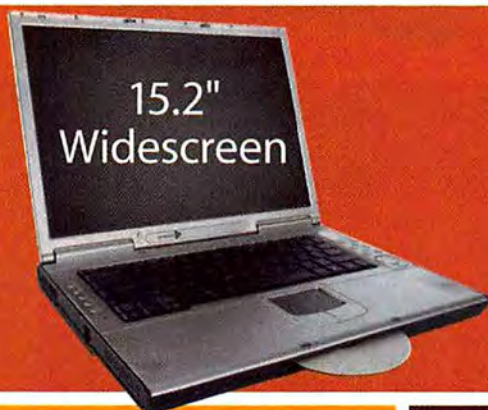
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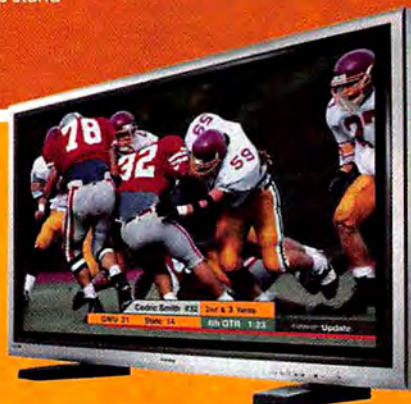


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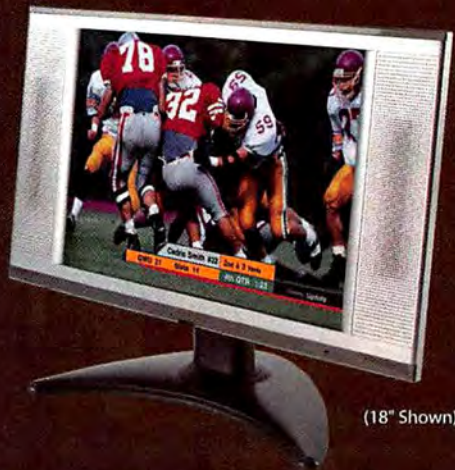
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(18" Shown)

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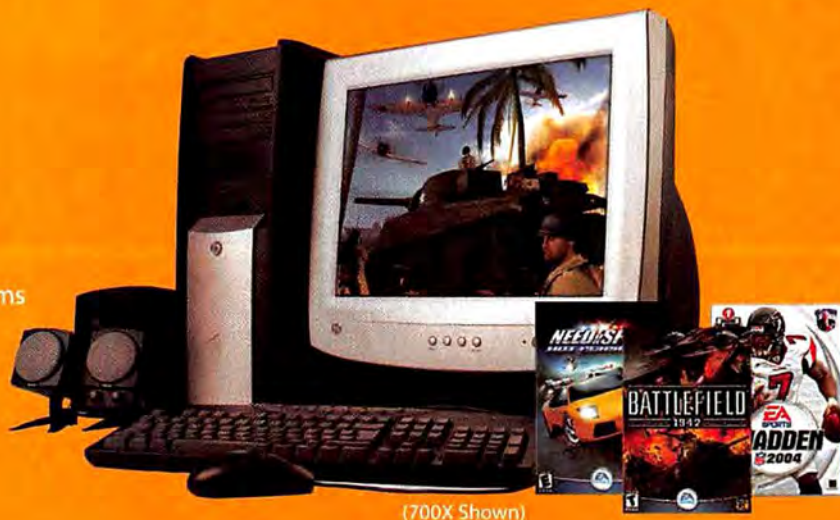


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(700X Shown)

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LETTERS

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**MUSIC INDUSTRY
SPLIT ON COPYING**

**JUNK FAXES STILL
A PLAGUE**

**BATTERY FIX FOR
A BLACK SCREEN**



BIG STINK OVER BOGUS INK

REGARDING "Bogus Ink Stink" by Tom Spring [*News and Trends*, August]: I agree counterfeit printing supplies are a problem and must be dealt with. But the very existence and proliferation of counterfeits indicate that the original product is far too expensive. This isn't like rip-offs of Rolex watches, because I can always buy a Timex. When it comes to supplies for my printer, I don't have any other choice. What we are seeing here is a market and supply monopoly, and a natural (albeit illegal) response to unfair trade practices.

If a small manufacturing firm in the Far East can reproduce, package, and ship original-looking products, sell them for half the price, and still make lucrative profits, what does that say about the profits that the printer companies make

selling their millions of cartridges?

Responsible trade practices, along with legal alternatives such as compatible cartridges and refilling, will go a long way to help curb the black market.

James Mansell

*Business Development Director
Island Ink-Jet Systems*

WHAT I FIND puzzling is that the behavior of printer manufacturers may violate the Sherman Antitrust Act. The manufacturers are leveraging one market with another (selling you a printer and then telling you that you can use only their ink in it or you void your warranty—nice guys). Do these companies publish an ISO specification for their inks and cartridges? If so, third-party companies should be able to meet that specification, and the printer companies should honor their warranties without question.

William Collins, Brown University

YOUR ARTICLE on counterfeit ink cartridges was informative and timely. I just purchased ink cartridges online for my HP multifunction printer at a significant discount. The cartridges arrived in

what looked like authentic HP packages. Two, however, appeared to be intended for sale in Latin America. Before receiving this month's *PC World*, I called HP to ask if the cartridges were safe to use in my machine. To my surprise, HP's tech support and customer service departments refused to answer my question, as my multifunction printer was a year out of warranty. Fortunately, *PC World* is concerned about such matters. I am returning the cartridges.

Larry Brown, via the Internet

CUSTOMERS ARE desperate for reasonably priced cartridges! I bet that you get more reader mail on this article than on any other you have ever published.

Harold Tuchel, Waterloo, Iowa

Editor's note: Reader Tuchel is probably correct about the mail. Many correspondents, however, failed to distinguish between counterfeit and third-party ink products. For a report on the latter, see last month's "Cheap Ink Probed" (find.pcworld.com/37490).

—Yardena Arar

ARIA FOR OPERA

ANNE KANDRA HIT all the right notes in her praise of the Opera browser ["You May Be Using the Wrong Browser," *Consumer Watch*, August]. I've been with Opera through several versions, and it is far more attuned to users' needs than Internet Explorer.

In addition, Opera 7 handles more sites than any previous version, so I almost never have to resort to IE. Window tabbing, keyboard shortcuts, superior bookmark handling, and nicknames—allowing quick keyboard access to sites I visit regularly—are four examples of how Opera lets me work my way instead of Microsoft's way.

John Bergez, Pacifica, California ►

LETTER OF THE MONTH

How One Reader Switched to Linux

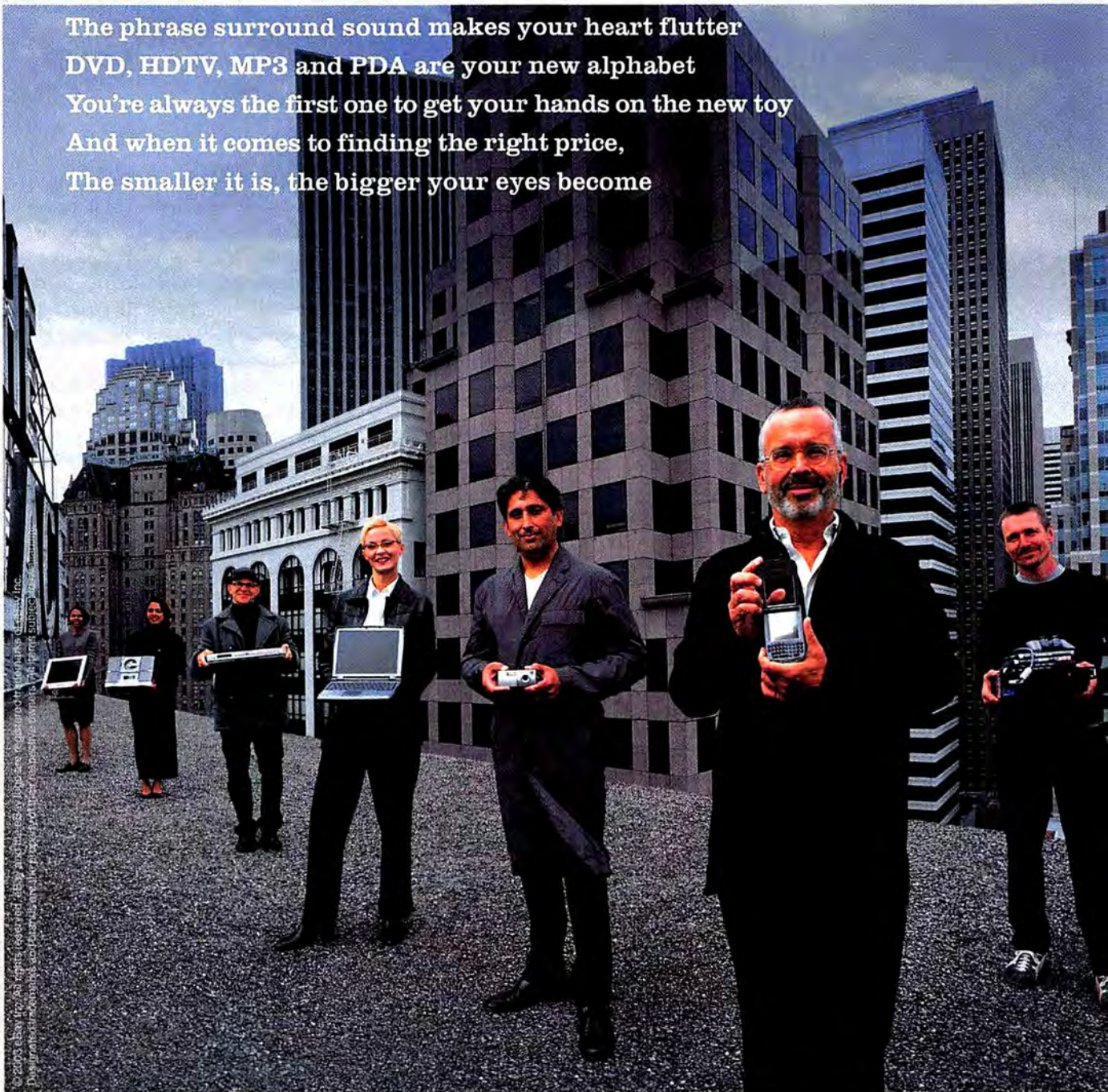
TWO-PLUS YEARS AGO, *PC World* introduced me to Linux. Countless articles on Windows security issues, viruses, and onerous user agreements, and my own experiences with instability and software conflicts made me decide to switch. But even though I bought a copy of Mandrake, I was too timid to use it because of my minimal computer skills—until I was forced to do so late one night when Windows ir-

revocably crashed in the middle of a project I had to finish before bed. In a panic I installed Linux along with a broad suite of apps on an old hard drive I had, recovered my files from the Windows drive, and was working within 45 minutes. I never looked back—I have a fast, stable, secure, virus-free operating system with more and better apps than I could afford with Windows.

Eric Skalwold, Ithaca, New York

The word plasma excites you

The phrase surround sound makes your heart flutter
DVD, HDTV, MP3 and PDA are your new alphabet
You're always the first one to get your hands on the new toy
And when it comes to finding the right price,
The smaller it is, the bigger your eyes become



Do it
ebay
Electronics

THE COPYING CRACKDOWN

YOUR ARTICLE "Copy Controls Crackdown" [News and Trends, August] describes the Recording Industry Association of America's lawsuits against individuals using peer-to-peer software to share music files over the Internet.

As one of the largest dance music companies in the world, we are *not* opposed to peer-to-peer music trading. We feel that the industry's dinosaurs need to catch up with technology and consumer demands.

Despite claims to the contrary, a peer-to-peer shared song is not as high quality as a piece of vinyl or a commercially manufactured CD. We believe that most song sharers are teenagers who will purchase music as adults.

The RIAA actually represents only a handful of large record companies. As a record label group, we are opposed to the actions of the RIAA in suing individuals. The lawsuits will backfire on the industry.

Chuck Paugh

Chief Financial Officer/Promotions Director
Dust Traxx

JUNK FAXES STILL AROUND

DANIEL TYNAN's article "Uncle Sam vs. Spam" [August] states that the Junk Fax Law has eliminated a flood of junk faxes, partly because, unlike with spam, "the sender can't fake the source of the faxes—the sending number."

As the owner of a small home-based business, I get numerous junk faxes weekly. Most have no fax number at the

CORRECTIONS

IN AUGUST'S *Top 15 Notebook PCs*, the CPU for the Compaq Presario 2100Z should have been listed as a 1.52-GHz Mobile Athlon XP-M 1800+.

Contrary to a statement in the August *Full Disclosure*, disabling the dialog boxes in Windows XP's Msconfig utility does not restore disabled start-up programs.

August's *Plugged In* should have dated Shakespeare's use of the word "geek" to around 1610.

PC World regrets the errors.

top. When I call the opt-out number, about three-fourths of the time I get a recorded message for Blocklist.com, which claims my fax number will be filtered out of future junk faxes sent by its clients—but I still get faxes from them.

Luella E. Nelson, via the Internet

MORE ON OLD HARD DRIVES

AN ADDENDUM to Tom Spring's article on user data left on discarded hard drives ("Hard Drives Exposed," *News and Trends*, May): Our research project at UCSD has been addressing the need for secure erasure of user data on hard drives for seven years. This project has resulted in a secure erase command that can be sent to a disk drive to completely erase all possible user storage areas. The command is present and operational in all ATA drives larger than about 10GB that we have tested, but it is optional and not operational in SCSI drives we've tested.

Gordon Hughes, Associate Director
Center for Magnetic Recording Research
University of California, San Diego

A HARDWARE TIP

YOUR AUGUST *Hardware Tips* ("Take a Crash Course in Emergency PC Recovery") missed one important item for the troubleshooting checklist: Check your clock (motherboard) battery.

One day my computer was reduced to nothing more than a black screen. I had noticed that it hadn't been keeping correct time, but I did not realize the importance of the clock. Fortunately, my neighbor told me to try changing its battery—and \$2.99 later, the PC was up and running.

Carol Kantor, via the Internet


ONE WINDOWS TOO MANY?


STEPHEN MANES's column "Windows Longhorn: Prime Grade or Bull?" (*Full Disclosure*, August) made me think of *Peanuts*, with Microsoft as Lucy, software as the football, and users as a collective Charlie Brown.


Robert J. Nedreski, Erie, Pennsylvania


PC World welcomes letters to the editor. We reserve the right to edit for length and clarity. Send e-mail to letters@pcworld.com. ■


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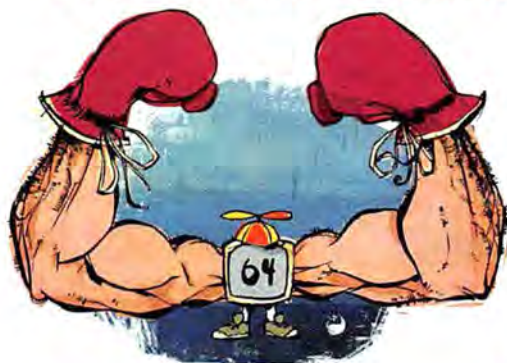


PLUGGED IN

STEVE FOX

Desktops Get a 64-Bit Speed Boost

Plus: The further adventures of Friendster, Napster, and the ITCAM-ster.



1 Athlon Steps Up to 64 Bits

The Buzz: Yes, Apple may have gotten there first with the G5, but the super-fast 64-bit systems on most PC World readers' radar will be powered by AMD's upcoming Athlon 64 chip. Set for a September 23 release, the new CPU will run all the standard 32-bit operating systems. Microsoft is cooking up a 64-bit version of Windows for a later release, as well. Better still, Athlon 64 PCs speed up today's 32-bit apps, even as they whip through tomorrow's 64-bit programs. That's a trick Intel hasn't bothered to pull off with its server-centric 64-bit Itanium chip, which runs 32-bit software slowly.

Bottom Line: The first wave of 64-bit programs will include games, video editing apps, games, other multimedia apps...and games. Of course, the initial paucity of 64-bit software could leave buyers feeling like hyperactive kids at a meditation center.

2 Friendster Around the Bendster

The Buzz: Sure, it's a glorified dating service, but Friendster (friendster.com), an "online social networking community," has become the Web's latest unstoppable force. Using a "six degrees of separation" model, members sign up (for free) and invite other friends to join. Ultimately, you meet friends of friends—when

you can get through to the site. Friendster is so swamped by traffic that it can be hard to log on.

Bottom Line: With more than a million members as of August and a reported growth rate of 20 percent a week, Friendster membership should exceed the population of the world by early July 2004. Alienster, anyone?

3 Music Sites Change Their Tune

The Buzz: Drawing their cue from Apple's iTunes Music Store (for Macs only until later this year, sad to say), a slew of subscription-free Web-based services are suddenly selling downloadable songs, à la carte. Buy-Music.com led the PC hit parade in late July when it started selling tunes for about a buck a pop. Then Napster announced it would reopen by year's end, with a hybrid fee-per-song or subscription service model. And AOL, Musicmatch, and RealNetworks plan to open digital download stores this year.



4 Digital (Video) Gadget

The Buzz: This is it...or rather IT: Samsung's ITCAM-7, due out by early next year, is poised to become the latest gotta-have-it toy for the techno-gadget set. Barely bigger than a deck of playing cards, the digital camcorder/still camera/MP3 player/voice recorder will hold up to 90 minutes of MPEG-4 video, 30 hours of MP3s, or thousands of photos on its 1.5GB internal hard disk. USB 2.0 and a Memory Stick slot will provide needed PC connectivity.

Bottom Line: That's a lot of device for \$699. But c'mon, Samsung, where's the built-in bread maker and nail clipper? ■

Contributing Editor Steve Fox covers buzz-worthy products, ideas, and trends. Contact him at steve_fox@pcworld.com. Visit find.pcworld.com/31643 for more Plugged In.

NAGGING QUESTION

Who Coined the Term 'Bug'?

ENGINEERS HAVE been referring to bugs—flaws in a piece of machinery—since the 1800s. But the computer bug is of more recent vintage. Back in 1947, Grace Murray Hopper was toiling away at Harvard's Mark II computer and found a moth lodged in the components. She extricated the ill-fated beastie and pasted it into the computer's



logbook, with the notation "First actual case of bug being found." The terms *bug* and *debugging* entered the vernacular almost immediately thereafter. The famous moth now resides in the Smithsonian, where it fascinates computer historians and annoys entomologists, who know that technically a moth is not a true bug.

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The Fujifilm FinePix F700 Digital Camera



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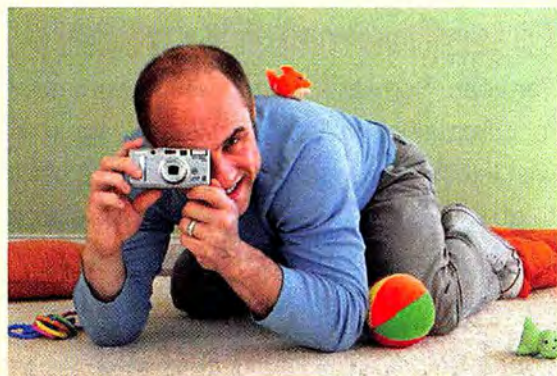
Mr. Green's view

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**FINDING CAR-BUYING
ADVICE ON THE INTERNET**

**PRIVACY WATCH: LAW
PROTECTS NET SHOPPERS**

**ON YOUR SIDE: CAMERA
MISSES THE SHOT**

Use the Web When You Need Wheels

Kick the tires, but let online research help you drive a hard bargain.



IF YOU'D RATHER show up at your high school reunion in a '76 Gremlin than lock horns with a pushy car salesperson over floor mats and finance plans, you're not alone. A few years ago, the prophets of the new economy told us that no one would ever have to wrestle with a pinkie-ringed car shark anymore. Instead, customers would just log on and buy a new vehicle completely online.

Well, the Internet didn't eliminate car buyers' desire to take a test-drive and count the cup holders. But online car information has developed into a great way to bypass the haggling and hit the

road faster than a Hummer can slurp a gallon of premium unleaded. And you might even save a few bucks on the deal.

A plethora of car-related sites dot the Web, but many of the best are simply online versions of well-established automobile and consumer references. If you're still mulling over makes and models, for instance, a good place to start your research is the JD Power Consumer Center site (find.pcworld.com/36866). This lean, uncluttered site bases its findings solely on consumer feedback and helps you efficiently narrow your list of choices by price range, as well as by how you

weigh the importance of safety, style, fuel economy, and other features.

You won't find detailed specs and pricing information about specific car models at JD Power, however. So once you've winnowed your list of prospects down a bit, take a spin over to Edmunds.com (www.edmunds.com), where you'll find a wealth of data on both new and used cars. Along with extensive reviews, prices (including the dealer invoice, sticker, and average price paid by buyers in your area), and truckloads of advice on buying and selling, the site carries links to information on local availability, price quotes, updates on recalls, and maintenance tips. You can also set up a side-by-side chart of similar models to compare prices, features, warranty details, overall pros and cons, and comments from current owners.

THE LOWDOWN ON LINGO

ONE OF EDMUNDS.COM's most helpful features is its expertly moderated message board, which includes lots of unusually articulate (compared with many discussion boards) insights on hundreds of topics, ranging from how to determine a fair price to which cars' built-in music players can handle MP3-encoded CDs. Another must-read is "Confessions of a Car Salesman," a firsthand account of the seamy world of car sales, written by an Edmunds editor working undercover at a high-pressure dealership. Don't even consider visiting a car lot until you've read this rundown of sales lingo, tactics, and common ploys.

Edmunds.com alone holds enough useful data for you to make a reasonably well-informed buying decision, but com- ►

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paring results with those of at least a few other sites is a good idea. Another one worth visiting is Kelley Blue Book (www.kbb.com), which, along with the used car trade-in valuations it's known for, offers its own buying advice, reviews, feature comparisons, and pricing tools.

KBB.com is very helpful if you're buying a used car or want to make sure that you're getting top dollar for your trade-in, but it lacks the breadth of Edmunds.com. Also, the site's less-than-elegant design means that getting the facts takes longer, especially on a dial-up connection.

Need a break from all of the facts and figures? Cruise over to the Car Talk section of Cars.com (cartalk.cars.com). National Public Radio's hilarious car gurus Tom and Ray Magliozzi mix plenty of useful dirt about cars—such as customizable reports that list safety bulletins, owner complaints, and recalls for virtually any model—with fun stuff like automotive haiku (“Went for oil change—got

transmission, clutch, muffler. Bye-bye Oahu.”), advice on how to resolve karma conflicts between you and your car, and downloadable road-trip bingo games.

THINK SAFETY

IF YOU'RE ON the fence about several different models of cars, compare their safety records. You'll find basic safety ratings at the sites listed above and at most other consumer sites, but for details, visit the National Highway Traffic Safety Administration (www.nhtsa.dot.gov). The NHTSA site lists safety standards, crash test results, safety testing reports, defect investigations, recalls, and more, for just about every make and model on the road. Alternatively, the Insurance Institute for Highway Safety (www.hwysafety.org) posts similar information in a format that's more digestible and easier to read.

Once you've chosen your dream car, it's time to talk turkey. Most car buying sites, such as Autobyte.com and CarsDirect.

com, simply forward your request for a price quote to a participating local dealer, which then contacts you with a figure or (occasionally) an invitation to visit the lot in person. (Of course, if you wanted to visit car dealerships, you wouldn't be shopping online.) Many dealers have “Internet-only” sales departments that focus exclusively on customers who contact them online. You can ask for price quotes at almost any car site, so be sure to cast a wide net. Send at least four or five requests, and compare the results.

Though you shouldn't assume that using the Web will guarantee you the lowest possible price for your car, if you do your homework and find a dealer that's comfortable doing business online, you'll probably score a pretty good deal without the dickering. According to Phil Reed, consumer advice editor at Edmunds.com, the price you get online is typically within \$100 of the price you would pay if you negotiated in person. “Generally the price

PRIVACY WATCH

California Law Protects Us All From Security Breaches

NO MATTER WHERE YOU LIVE in the United States, your protection against identity theft is about to get better. And you can thank the California legislature for that.

As of July 1, a new California statute requires any business with customers in California to alert those customers if anyone steals sensitive private information that could lead to identity theft (like your name combined with your Social Security number, driver's license number, or financial account information). The notifications must go out even if the company merely suspects a cyberburglary.

The law requires disclosure only if the information at risk is unencrypted. Any company that fails to inform California customers that their information was stolen could face costly lawsuits.

The effect of the new law will reach well beyond the borders of the Golden State, says Chris Hoofnagle, deputy counsel for the Electronic Privacy Information Center, a privacy advocacy group. “A lot of businesses that operate nationwide will treat all their customers as though they're Californians,” Hoofnagle says.

After all, many large Internet companies have difficulty distinguishing exactly where a customer lives; on file they may have only an e-mail address, for instance. And customers in Oregon or Maine

won't be happy to learn that they weren't notified of a security breach just because of where they live.

Previously, companies that fell victim to malicious hackers or other kinds of computer data theft have been able to keep the details of the crime under wraps, out of sight of their customers and stockholders. When a hacker stole credit card information from online music store CDUniverse and demanded \$100,000 to keep quiet about the crime, the company contacted the FBI. But it didn't let customers know about the security breach until the 18-year-old Russian cyberthief posted the credit card information online.

“It's common sense that individuals should be notified when their personal information is stolen from companies,” Hoofnagle says, “but there was no law that required this until now.”

Most important, Hoofnagle says, the law will make companies wary about asking for and storing sensitive information that the firms don't need, and this change will help both the companies and their customers. You run less risk of identity theft overall if your information is in fewer places, and if the places with the data protect it more securely. “Businesses will be less likely to collect [Social Security numbers] in the future,” Hoofnagle says, “and that will be good for privacy.”

—Andrew Brandt



quote you'll get from a dealer online is closer to the TMV [true market value—the average price paid by customers in your area for the same vehicle],” Reed explains, “as opposed to the traditional starting point, which is the sticker price.”

How do you know if the price that the dealer quotes is a good deal? A common strategy is to check at Autobytel.com, ConsumerReports.org, Edmunds.com, or Vehix.com for the dealer invoice price (the price the dealer paid) for the car you want, and use this figure as a point of reference. Compare the invoice price to the manufacturer's suggested retail price (the radically inflated price the dealer wants you to pay), and look for a comfortable place somewhere between the two; obviously, the closer to invoice, the better.

Keep in mind that the more popular or hard-to-find the car is, the higher your price quote is likely to be. If you're not sure how to determine a reasonable price for the car you want, start by gathering as many price quotes as you can. Make sure you know the invoice price, and investigate sites such as Kelley Blue Book and Edmunds.com for dealer incentives and other offers that affect the final profit. Visit Edmunds.com to ascertain what other buyers in your area are paying for the same vehicle. Many buyers find that a good strategy is to take the lowest price quote they get from any dealer online and offer it in person as a nonnegotiable deal to the local dealer they like best.

Before you seal the deal, make sure you have all of the price details. Don't forget about hidden costs such as sales tax and license fees. Because unexpected extra charges have a nasty habit of showing up on final sales agreements, Reed suggests getting a copy of the factory invoice and asking for an “out-the-door” figure.

Some sites, such as CarsDirect.com, take an Amazon-style approach to car selling, letting you complete the entire transaction from the comfort of your home office. They'll communicate and process all the paperwork electronically, and some dealers will even deliver the car to your doorstep a few days later. If you have a compelling reason to go this route, fine; otherwise, set aside time to kick some ▶

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ON YOUR SIDE

Digital Camera Misses the Picture

U MY KODAK EasyShare DX3600 Zoom digital camera doesn't capture the image I frame in the shot. When I take close-ups of my grandchildren outdoors using the camera's viewfinder and zoom lens, I get an image of the ground or half of what I framed in the shot. I sent the camera for repair (to a Kodak-authorized repair center in Illinois), but the problem persists. Now the camera is out of warranty. Can you help?

Barry Rosen, Saint Ann, Missouri

On Your Side responds: Kodak spokesperson Joseph Paglia says company technicians found no malfunctions in Rosen's camera.

The problem may be due to shutter lag time, which plagues nearly all digital cameras. With Rosen's camera, there is a delay of 1.8 seconds between your pressing the shutter button and the camera's capturing the image. The solution: Press the shutter button halfway, allowing the camera to focus on the subject. Hold the camera steady and press the shutter button all the way. Then review the picture on your camera's LCD (if it has one). As a goodwill gesture, Kodak has offered Rosen a trade-in, allowing him to upgrade to a newer Kodak camera for a discount.

—Grace Aquino

tires and go for a test-drive before you sign on the dotted line. What looks terrific on screen might not have the same appeal when you're behind the wheel.

Even if you've already done the legwork and decided on the car you want, you may pay more by going the completely online route. If the convenience of home delivery appeals to you, approach a local dealer about whether it will provide this service for free; many will when asked.

Many of the same sites that offer new-car advice, including Autobyte.com, CarsDirect.com, and Edmunds.com, give you the scoop on used cars too. And many will help you locate the used car of your dreams. Enter the make and model you're interested in, how much you're willing to spend, and how far you'll travel to pick it up, and the sites will return a list of available cars and prices. Most are from dealers, but some are offered by individuals.

And if you like the idea of bidding for a vintage Karmann Ghia or a one-year-old Honda Odyssey, try EBay Motors (follow the link to it on EBay's home page). You might get a great deal—but first you had better figure out how to pick up the car if it's a few states away.

Matthew Moncreaff, owner and head teacher of a martial arts school in Acton, Massachusetts, has been a fan of online car shopping since he purchased his new Buick Rendezvous last spring. "The drive-

way to my new house used to be a ski hill, so I definitely needed a four-wheel drive," he explains. "Otherwise, all I knew was that I wanted a reasonably fuel-efficient, midsize SUV."

Moncreaff's busy schedule didn't allow much time for him to peruse car dealerships, so he turned to his laptop, visiting sites like Autobyte.com, Vehix.com, and Yahoo Cars to narrow the list. He also spent time at local dealers' and manufacturers' sites, tinkering with specs and gathering price quotes.

In the end, he bought from the dealer with the best site. Coincidence? Nope. "The site made it clear that this dealer was comfortable doing business online. It let me link to the manufacturer, set up specs, get prices, and even check local inventory. The salesperson e-mailed me with a fair price quote the day after I requested it, and I even got a decent trade-in for my old car. I never had to haggle over price. All in all, it was much easier than the traditional way of buying a car."

Anne Kandra is a contributing editor and Grace Aquino and Andrew Brandt are senior associate editors for PC World. E-mail them at consumerwatch@pcworld.com. To read more Consumer Watch, Privacy Watch, or On Your Side columns, go to find.pcworld.com/31703, find.pcworld.com/31706, or find.pcworld.com/31709, respectively.

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Microsoft

Don't Get Burned Buying Memory Upgrades!

Three Questions Other Memory Providers Hope You'll Never Ask...

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"As the official factory outlet for Micron Technology's RAM-manufacturing facilities, (Crucial) offers near-wholesale pricing for a broad array of top-quality memory modules...you have to wonder why anyone would buy memory anywhere else."

— Computer Shopper magazine

Do you actually make the memory you sell?

WARNING! Listen carefully to the answer when you ask this question. Other memory companies claim to manufacture memory, too. What they actually do is assemble the memory chips made by someone else into memory modules. Ask them this: Do you make the chips that go on your memory modules? The chips are the important part, after all.

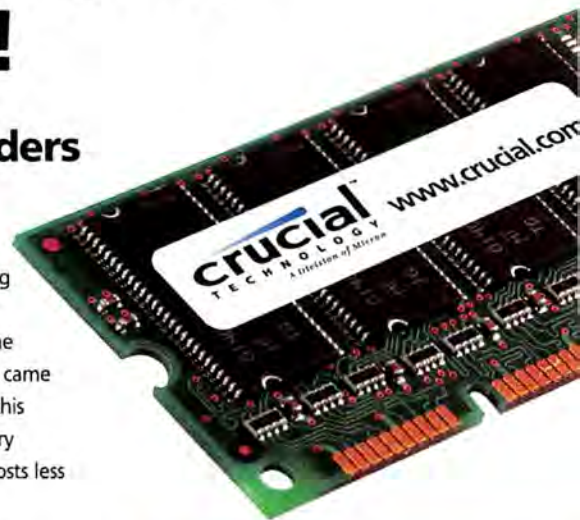
Crucial is the only memory upgrade supplier that's part of a major DRAM manufacturer, Micron. We actually make the chips that go on the modules.

In fact, because the world's leading computer manufacturers use our memory, chances are good that the memory in your system right now came from Micron. Crucial brings this same high-quality memory directly to you. It only costs less because you don't pay middleman mark-up fees.

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*See Web site for details.

Prices may vary according to specific system requirements. The price listed was valid on 8/4/03 when we sent this ad to the publisher; however, prices may have dramatically increased or decreased since then. Visit the FAQ section of Crucial.com to learn more about why memory prices go up and down.

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It Pays to Listen to Your Customers

These two survey Web sites let you learn more about their needs.

WHEN YOU TALK, I listen. I recently surveyed readers of my *Home Office* online newsletter and altered a few things about it based on their feedback. The two surveying and polling tools I use are powerful, free, and perfect for getting direct insight into what clients, club members—and heck, even relatives—are thinking.

My favorite polling program is PollMonkey. In less than 10 minutes, I can create a professional-looking poll with one question and up to 50 choices for answering. Respondents are tracked with a harmless cookie (so they can vote only once); and when they're done with the survey, I can either show them a message before they exit or let them see the poll results. A free PollMonkey account has no ads, pop-ups, or other nuisances, but it is limited to 100 responses per month. For \$20 a month you get up to 10,000 responses. Why not give the service a try with a poll I created (find.pcworld.com/36644), or create your own poll at www.pollmonkey.com?

Most of us have customers of one kind or another (you're one of mine, by the way). It makes good business sense to get as much of your customers' feedback as possible. I've used SurveyMonkey (www.surveymonkey.com) for about ten surveys, and I couldn't be happier with it. For instance, I've learned exactly what attracts people to the user group I run. I've also heard the members' opinions of the group newsletter, and the type of demos they like the best. Responses to the surveys I conducted of *Home Office* online newsletter subscribers were brutal but enlightening. Readers told me loud and clear how much of the newsletter they read, what topics they find valuable, and what topics they'd like to hear more about.

Go to find.pcworld.com/36647 for the results of my online newsletter survey.

Keep your survey short and simple so respondents don't jump ship in midreply. SurveyMonkey has 16 question styles, including multiple choice, matrix, and the



style I liked best: open-ended essays. Visit find.pcworld.com/36848 to see a sample.

The easiest way to distribute your surveys is by sending respondents an e-mail message containing the survey URL. SurveyMonkey can also import a mailing list to generate your e-mail invitations automatically. That's more work, but it's ideal if you want to track customer responses.

SURVEYMONKEY SHINES

THE FREE VERSION of SurveyMonkey limits your survey to no more than 10 questions and 100 respondents—more than enough room to handle quick, spur-of-the-moment surveys. SurveyMonkey is civil with its free version: There are no ads, banners, spyware, or pop-ups. And don't worry about privacy. SurveyMonkey lets me collect responses, but the site notes only a respondent's IP address and

sets a benign cookie so they can go back a page in their browser without losing data. Browse to find.pcworld.com/36650 to read SurveyMonkey's privacy statement.

For more-extensive survey demands, SurveyMonkey charges \$20 to field 1000 responses per month. The fee service includes features that individuals and small businesses are likely to find unnecessary. For example, the paid service lets you add a logo to your survey. It also supports skip-logic questions, in which different answers to one question lead to specific follow-up questions. And you can require that all of a survey's questions be answered before it's accepted. The paid version conveniently lets you show respondents the survey results on the SurveyMonkey Web site and lets you export the survey results.

I do have a couple of complaints about SurveyMonkey, however. First, it has no spelling checker, so I have to write the survey questions in Word (to use its spelling checker) and then cut and paste them into the online survey form. Second, the service's help is weak. This shortcoming is particularly troublesome for people who have never created a survey. But don't fret—I'll have a survey tutorial in an upcoming online newsletter. Visit find.pcworld.com/25821 to sign up.

Now it's your turn to give me some feedback. Visit find.pcworld.com/36653 to take a short survey about this column. And no, I don't want to hear what you think of my top-of-the-page portrait. ■

Contributing Editor Steve Bass runs the Pasadena IBM Users Group. Contact him at homeoffice@pcworld.com. Visit find.pcworld.com/31610 for more Home Office columns.

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BUGS & FIXES

STUART J. JOHNSTON

New Windows Holes: Dangerous Music

Prevent hackers from using music files to take charge of your machine.



EVER VISITED a Web site that suddenly started playing music through your computer speakers? It may be annoying, but you can always turn down the volume. And it's harmless, right? Maybe not.

Researchers at EEye Digital Security recently discovered two big holes in Windows' music playback technology. The flaws, which Microsoft rates as "critical," could allow a hacker's code to run amok

on your PC by exploiting a contaminated music file. The hacker could then take over your PC and do something nasty, like delete your files.

The problems lie in the way that Windows plays back a common type of music file called a MIDI (Musical Instrument Digital Interface) file. Unlike an audio file, a MIDI file contains a string of code that tells a synthesizer (such as the ones in most PCs) how to play a piece of music.

Microsoft's DirectX technology, which handles playback for audio and video in Internet Explorer and in Windows Media Player, also plays MIDI files. Microsoft realized that it had left two unchecked buffers in versions of DirectX from Windows XP all the way back to Windows 98. This weakness could let a miscreant send a malformed MIDI file containing too much data to one of the buffers. And for that to happen, you just have

to visit a booby-trapped Web site or open (or preview) an HTML e-mail message with an embedded link. This triggers the infected MIDI file to download to your PC. When the buffer overflows, DirectX malfunctions and the hacker's code starts to execute.

Take care of the hole by grabbing the latest version of DirectX, 9.0b. Head to find.pcworld.com/37217 for more details and a link to the patch, and go to find.pcworld.com/37244 for EEye's bulletin.

BLASTER TROUBLE

BY NOW YOU'VE probably heard a lot about the Blaster worm. Also known as the Lovsan or DCOM worm, this self-propagating infiltrator exploited a flaw involving a part of Windows called the Distributed Component Object Model, and how it listens for Internet traffic. Infected Windows 2000 and XP systems could allow a bad guy to unleash random code or to launch denial-of-service attacks.

Microsoft had already plugged the hole before Blaster started spreading, but many users didn't get the chance to update at the time (grab a link to the fix for your Windows version at find.pcworld.com/37568). Even if you took care of the problem by downloading the latest virus definitions or using a removal tool (go to

find.pcworld.com/37565 for Symantec's tool), you'll still need Microsoft's patch. ■

Stuart J. Johnston is a contributing editor for PC World. Visit find.pcworld.com/31580 to see more Bugs and Fixes columns.

IN BRIEF

PowerQuest and Symantec Clash

SOME POWERQUEST products do not get along with Symantec's GoBack. Drive Image, PartitionMagic, and DriveCopy refuse to operate while GoBack is active. This conflict is not a bug, but to work around the snag, you have to disable GoBack. See find.pcworld.com/37223 for PowerQuest's instructions and find.pcworld.com/37226 for Symantec's advice.

VAIO Modem Repair

SONY IS FIXING modems in some PCG-FRV25 and PCG-FRV27 VAIO laptops because of grounding problems. Call Sony at 800/880-9743 or visit find.pcworld.com/37229 to learn whether your unit needs repair.

BUGGED?

FOUND A hardware or software bug? Tell us about it via e-mail at bugs@pcworld.com.

DELL PULLS PATCH FOR HANDHELDS

SHORTLY AFTER DELL released a performance fix for its Axim X5 handheld units, the company took the patch down from its Web site. The fix was intended for Pocket PC handhelds running Windows Mobile 2003 that were sold between June 23 and July 16, 2003. Dell received reports, however, that some users who didn't have the required license had found a way to grab the patch and use it to upgrade older Pocket PC operating systems (head to find.pcworld.com/37232 for a related PCWorld.com news story).

At press time, Dell said that it had begun mailing out CDs with the fix to all customers affected by the performance issue.

Richard Downs, www.downs-art.com



Light in DVD steps to the forefront Shining Armor

In old-time movies, mustachioed villains were forever dragging fair-haired heroines to the railroad tracks while courageous heroes galloped to the rescue. Never once did the villain succeed, which allowed the hero and heroine to live happily ever after. Yes, life was simpler back then—and totally unrealistic.

Fast forward into the digital age and you can craft your own cinematic realities. Today, you're in charge of the plot and the outcome. When you achieve the exact mix you want of fantasy and reality, you

can burn it onto a DVD, secure in the knowledge that your DVD disc will be readable by 99.9 percent of the world's players. Standardization of players is just one reason that DVD has replaced videotape as the distribution medium for Hollywood and hometown movies. What's more, DVD's optical technology will ensure that your data remains stable for decades.

DVD's honking 4.7-GB storage capacity, nearly eight times as much as a CD-ROM can hold, will comfortably store an entire video, months of data, hundreds of MP3

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files, and an equal number of still images from your digital camera. With equal ease, you can preserve the World Series (to agonize or gloat over years later), your daughter's first prom date, or that harrowing double black diamond ski mogul.

DVD on the Move

Americans have always been a people on the move, never perhaps so much as they are today. And when on the move, they like to take full-featured, high-quality technology with them, whether for business or pleasure.

Fortunately Best Buy (www.BestBuy.com), the largest-volume specialty retailer of consumer electronics, personal computers, entertainment software, and appliances, is adding new meaning to the adage "you can take it with you." Two products in particular emphasize Best Buy's commitment to anytime, anywhere technology.

For starters, there's the Audiovox 12.1-inch Portable Flat Panel LCD TV/DVD Player with Mobile Mounting Harness, a truly innovative offering that is as functional on the road—even in the car—as it is in the home or office. Its TFT screen offers crystal-clear

Continued on page 3



Thousands of Possibilities

GET YOURS



Continued from page 1

images, a fitting complement to the wireless headphones that ensure private, distraction-free listening. The car-mounting harness sets up quickly so any backseat crew members can readily enjoy DVD video, CD audio, or video gaming made possible by the player's gaming hookup.

Road warriors will also appreciate the performance, quality, and value of the Hewlett-Packard Pavilion ze5470US notebook computer, powered by an Intel Pentium 4 processor running at 2.6 GHz. This Best Buy offering is as robust as any desktop computer, with 512 MB of RAM and a muscular 80-GB hard drive for storing all of your home movies.

The Pavilion delivers full multimedia performance with its built-in DVD+RW, allowing you to burn or watch DVDs. The full-size 15-inch TFT display is easy on the eyes, and a great place to showcase graphics driven by the Pavilion's ATI Mobility Radeon (M6) 4X AGP graphics architecture. The Pavilion's 16-bit Sound Blaster Pro-compatible audio and internal Altec Lansing speakers make the multimedia experience complete.

■ *For these and many other superb technology products that maximize your time on the road or at home, visit www.BestBuy.com.*

Making It with Home Movies

Adam Brandi, one of a group of five students in Somers, N.Y. uses camcorders to make self-directed and self-funded comedy skits. After writing the jokes, performing in the skits, and editing the content, the aspiring producers burn the 15- to 30-minute segments to DVD. They enter their homegrown minivideos into contests and show them on the local cable's public access channel. Admittedly, the group has yet to win a prize. Still, they derive satisfaction from the creativity and empowerment that digital imaging and DVD technology give them. "We write and shoot these skits in our spare time and we pay all of our expenses," says Brandi. "Distributing our videos on DVD is one way we keep expenses down and playback quality high."

In time, Brandi and his partners may offer their DVDs on eBay and Amazon. Using a media and distribution format that's universally readable, says Brandi, is vital to the future success of their venture.

User-Friendly Technology

In order for any technology product to truly succeed, it must be "approachable," or in other words, it must be user friendly.

A company whose name is synonymous with quality and ease of use has once again broken new ground. The new Dual Format DVD Recorder from Memorex (www.memorex.com) features support for both DVD+ and DVD- recording formats. Users no longer have to play a guessing game as to which media will work with their drive, and DVDs that are created play back in virtually any DVD or DVD-ROM player while offering full CD recording, rewriting, and reading functions.



Best Buy is offering the Audiovox 12.1-inch Portable Flat Panel LCD TV/DVD Player with Mobile Mounting Harness.

The Memorex Dual-X DVD Recorder is super-advanced technology made easy to use by everyone.

Included with the Memorex Dual-X DVD Recorder is a complete version of Roxio's digital media software suite that lets users create just about anything they want to with DVD or CD technology—from burning discs to archiving large files to producing DVD movies to recording music files. The list goes on. Even the critics are raving! The Dual-X DVD Recorder was #2 on the *PC World* Top 10 list for September and it also won a September *PC World* Best Buy award.



The new Dual Format DVD Recorder from Memorex features support for both DVD+ and DVD- recording formats.

There's more. Leveraging more than three decades of developing the world's leading storage media, Memorex's DVD 120 media take the mystery out of how much footage recordable DVD media will hold, with packaging that identifies recordable length and capacities in a clear and unambiguous way. DVD 120 media are available in all formats for up to six hours of home recording and playback.

■ *For more information, please visit www.memorex.com.*

Continued on page 5

All great road trips end up in the same place.

The Memorex Dual Format DVD Recorder has everything you need to put your vacations on DVD.

When it comes to preserving vacation videos, nothing compares to our award-winning Dual Format DVD Recorder. Why? For starters, it records both DVD+R/RW and DVD-R/RW formats, so choosing the right disc is never a problem. And, it also comes with everything you need—including the easy-to-use Roxio® software suite, cables and blank DVDs. What's more, it writes at industry-leading speeds and your discs will play on virtually any DVD player. So if you'd like to learn more about making your favorite moments last a lifetime, we suggest you visit www.memorex.com/dualx.

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SEPTEMBER 2003

PCWORLD
Best
BUY

PCWORLD
TOP10
DVD DRIVES



Continued from page 3

Acting Smart, Looking Good

You can probably count on one hand—without affecting your typing speed—the number of technology products that in addition to working well also look really great. High-tech gear is supposed to be plain vanilla and just sort of blah, right?

LaCie (www.lacie.com), a leading global producer of storage products, has rewritten the rules of technology design. By teaming up with renowned Porsche Design GmbH, LaCie has introduced a high-performance, high-value family of DVD, CD, and hard drives with a sleek, contemporary, and elegant style. This is technology that complements a well-designed office or home setting rather than intrudes upon it.

Included in this stylish lineup is the LaCie DVD+/-RW Drive. This user-friendly drive is wholly compatible with DVD+R/RW and DVD-R/RW media, allowing

users to choose the DVD format they prefer when creating DVD videos, sharing photos, archiving MP3 libraries, and backing up mountains of data.

Using the high-speed FireWire or USB 2.0 connection, users can quickly download video from a DV camcorder while storing up to two hours of

theater-quality digital video on one single 4.7-GB disk. This LaCie drive offers the fastest DVD recording speed on the market, burning at 4X speeds in DVD-R and DVD+R formats.

The LaCie DVD+/-RW Drive Slim is an all-in-one drive combining four DVD formats in a single device. This offers today's mobile professionals maximum flexibility to work while traveling. The drive can

write to most CD and DVD formats, which are compatible with just about all DVD video players.

■ For more information on these functional and stylish drives, click on www.lacie.com.



The LaCie DVD+/-RW Drive offers the fastest DVD recording speed on the market.

Continued on page 7

GET EXPOSED

Be the master of your domain

Perhaps the best advice for entrepreneurs and new or developing organizations in today's economy can be summed up in two words: "Think Smart." More than anything else, this simple phrase means getting the very most bang for the buck. And this is where a quality Web site with your own registered, unique domain name can work wonders.

A publicly held company with more than a \$100 million in yearly sales, Register.com (www.register.com) has helped thousands of businesses and organizations achieve online presence and respectability, and to do so very quickly and easily.

First, Register.com helps you secure your own unique domain name while the support staff guides you in setting up email accounts complete with email forwarding. Then, using a combination of high-quality, time-tested templates and the Register.com toll-free support staff, you can easily and quickly build a professional and appealing Web site that reflects favorably on your business, regardless of its size.

The benefits of dealing with Register.com don't stop there because you can then leverage and utilize other services to promote your site, ensuring that the major search engines become aware of your online presence.

Certainly among the greatest benefits that Register.com's customers have discovered are the significant value and affordability of doing so much for your business or organization for so little money—from domain registration to site hosting to site services.

■ So "think smart" by clicking now on www.register.com for more information.

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Continued from page 5

Rise of the Digital Pack Rat

Evan Kane, a recent college graduate, is a self-described digital pack rat. "I save everything, from old DOS games to the latest trailers of action flicks," he admits. His current passion is downloading multimegabyte demos of first-person shooters and RPGs. "When I first started burning DVDs, I used write-once discs. That got to be too expensive," he says. "I started buying rewritable discs. Even though they cost more initially, it's less expensive in the long run."

"Nature abhors a vacuum," say scientists. That law of nature applies equally



It takes just one 4.7-GB DVD disc to store:

4,700 full-color digital photos with 640 x 480 resolution

Source: Verbatim Corporation

as well to hard drive space. No matter how big a drive you have, you will eventually fill it with applications, files, audio tracks, and images. When the drive reaches saturation you must make a difficult choice. Then you will need to upgrade the drive (expensive), delete lesser-used files (distressing), or offload the files onto a DVD (wise). Doing the math, when you do fill up your 50-GB hard drive and you want to clean house or back up the drive, you will need about 10 DVD discs. If you were to use CD-ROMs you would need about 80 discs—and eventually a stepladder to reach the top of the pile.

Continued on page 9

Bridging the DVD Divide

Just about the only thing that's not simple about DVD technology is understanding the often confusing recording formats. While many newer multifORMAT drives support DVD-R, +R, -RW, and +RW discs, as well as CD and CD+/-RW media, you can save some money by buying a single-format burner if it will meet your needs. Here's a guide to the most popular formats that's based on intended use:

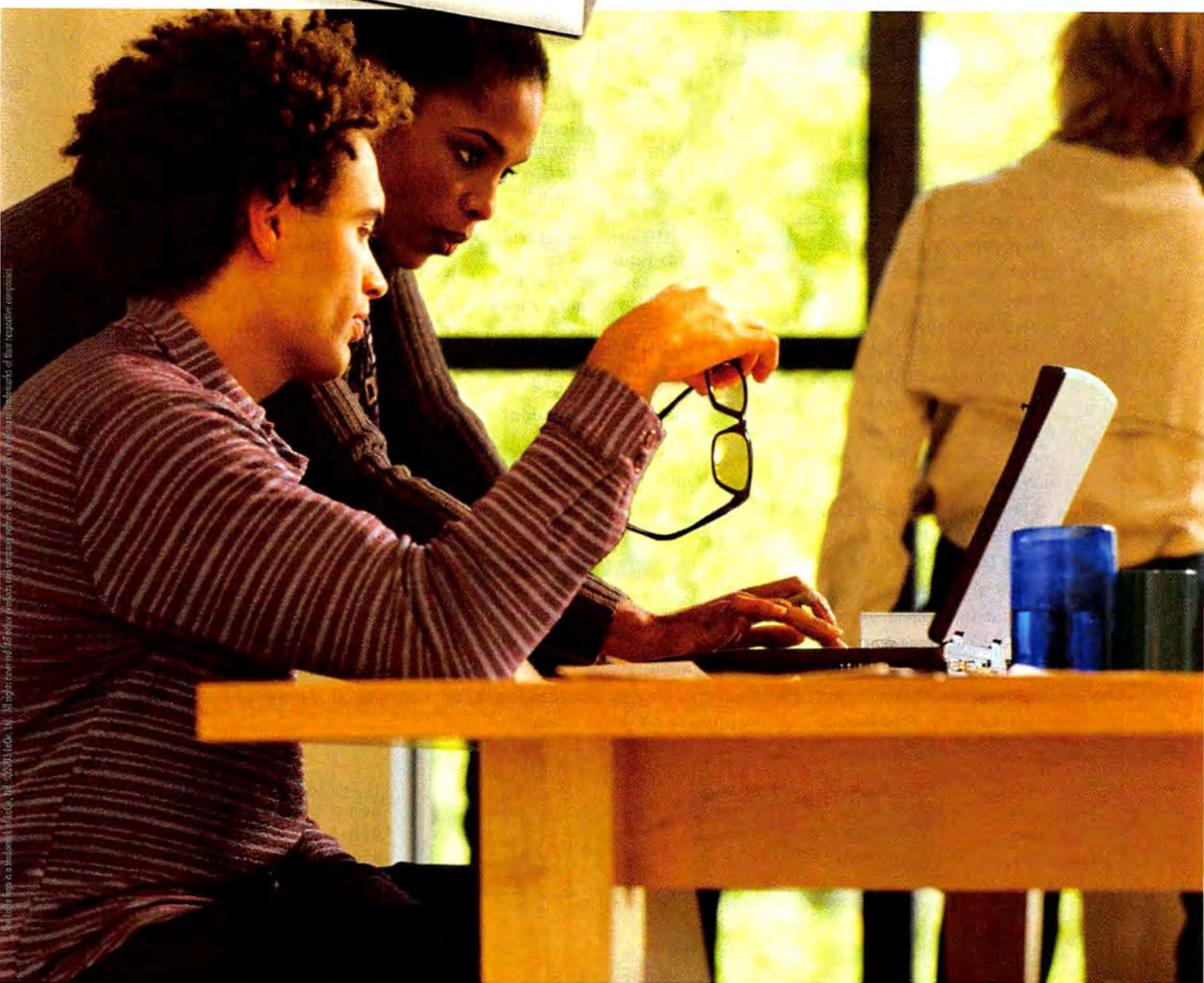
Format	Recommended Uses	Compatibility	Read/Write
DVD-RAM	Personal and business data storage; backups that you're not likely to share with anyone else. This format uses random, not sequential, access, making it better suited for data storage and providing excellent error correction.	Very low, only reads from and writes to other DVD RAM discs.	Rewritable many times.
DVD-R DVD+R	Secure business and consumer data plus mixed-media audio-visual applications, data archiving, and limited distribution.	Discs are compatible with most players.	Write once.
DVD+RW DVD-RW	Suitable for all-around usage, including storing still images and streaming video.	Discs are compatible with most newer players.	Rewritable many times.
DVD-ROM	A distribution format most used in many set-top and PC players.	Discs are highly compatible.	Read only, not writable.

The New LaCie DVD±RW, Design by F.A. Porsche

Create.



a movie masterpiece.



DESIGN BY F.A. PORSCHE

see the complete new line at www.lacie.com

Continued from page 7

The rising popularity of DVD burners as a mass storage device goes hand in hand with the soaring popularity of digital imaging. Computer enthusiasts, always alert for new products and new ways of adapting existing technology, have recognized the value of combining high-capacity storage DVDs, digital cameras, and digital camcorders.

It's All about the Media

Whether you are storing or recording business-critical files of customer data, a vintage music collection, a generation of family photos, or whatever is precious and valuable to you, the integrity and quality of the DVD media are vital components—some would say the most vital—of the entire operation. For that reason, users around the world look to the products of Verbatim Corporation (www.verbatim.com), whose 34 years of experience in the optical storage area have been marked by the highest-quality control standards.

Moreover, Verbatim develops and sells a full line of DVD media so users can leverage the benefits of Verbatim experience and quality regardless of the media format or specific application requirements.

With media capacities ranging from 3.95 GB to 9.4 GB, the Verbatim line includes DVD-R, DVD-RAM, DVD-W, DVD+R, and DVD+RW media. Moreover, Verbatim users can feel secure in the confidence of the company's lifetime warranty on all DVD media. That's the kind of confidence earned by more than three decades of developing optical media.

At the heart of the Verbatim quality promise is the



Did you know that on one single 4.7-GB DVD disc you can store:

▶ **More than 400,000 text documents, which is the equivalent of eight 4-drawer filing cabinets stuffed with paper information**

▶ **210 minutes—a full 3.5 hours—of compressed MPEG-2 DSS satellite-quality video**

▶ **120 minutes (2 hours) of compressed MPEG-2 theater-quality video**

▶ **14+ hours of MP3 compressed audio**

Source: Verbatim Corporation

extensive testing the company undertakes to ensure the Verbatim media attain the highest levels of reliability and stability. This tireless pursuit of media excellence results in DVD discs that are uniform in thickness and free of surface distortions, as well as perfectly balanced. As a result, the performance of the DVD player is optimized and the media will not deteriorate or degrade even with repeated recording and playback.

■ For more information, click on www.verbatim.com.

DVD for You and Me

Consumers like Adam Brandi and Evan Kane confirm the findings of the Boston-based Yankee Group analysts who predict a significant growth in home recording as "...consumers (increasingly) embrace PC DVD recording of personal video footage and Internet content. DVD rewritable drives and media will drive the growth of digital cameras, camcorders, photo printers, scanners, and the entire digital-imaging market."

In addition to DVD's increased reliability, falling prices, and multifunction burners as motivators for acquiring this proven technology, psychologists note that living in our fast-paced world motivates people to preserve fleeting moments that are worth remembering.

That makes good sense in today's digital age when we're deluged with stimulus. And while you're saving memories, don't forget to look for mustachioed villains hanging around railroad tracks. You just might find a digital drama worth keeping.



The Verbatim line includes DVD-R, DVD-RAM, DVD-W, DVD+R, and DVD+RW media, with capacities ranging from 3.95 GB to 9.4 GB.

GET REEL



Talk about box office hits. Verbatim's new DigitalMovie™ DVD is so hot you can almost smell the popcorn. Available as DVD-R or DVD+R, these 4.7GB discs look – even feel – like a Hollywood movie reel. But don't think you need a director's chair to use them. These mini-reels are perfect for home movies, business presentations, transferring files – anytime you want to add a little fun to the show. And of course, DigitalMovie DVD has the same unsurpassed performance and reliability you've come to expect from Verbatim. So make your next show a

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NEW PRODUCTS

EDITED BY TOM MAINELLI AND DENNY ARAR

Visio and FrontPage Get Major Overhauls

Updates to two free-agent Office apps give new and current users plenty to smile about.

PRODUCTIVITY

GO FIGURE. The two applications in Microsoft's new Office 2003 system that received the most extensive upgrade—**Office FrontPage 2003**, a Web design program; and **Office Visio 2003 Standard**, a business graphics tool—aren't part of any Office 2003 suite (Microsoft sells them separately).

Both programs benefit substantially from the overhaul, though FrontPage clearly had more room for improvement (see page 129 for our complete review of Office 2003).

HELP FOR NONPROS

AS THE GAP between beginning and professional Web development widens, it's good to know that noncoders can still create a first-rate site. Microsoft's \$199 Office FrontPage 2003 Web-design software adds some great tools to help new users post an inviting Web site quickly and simply. Chief among its improve-

ments is better HTML code.

Previous versions of FrontPage generated notoriously bad HTML code. Unnecessary tags, illegible text, and mystery formatting made the HTML source look like an overcaffeinated Babylonian scribe's cuneiform. FrontPage 2003's new split-code view (long a popular feature in Macromedia's professional-oriented

Dreamweaver) shows efficient, well-formatted HTML that serves as both a code-teaching tool for interested newbies and a means of taking direct control over the appearance and content for more-experienced users.

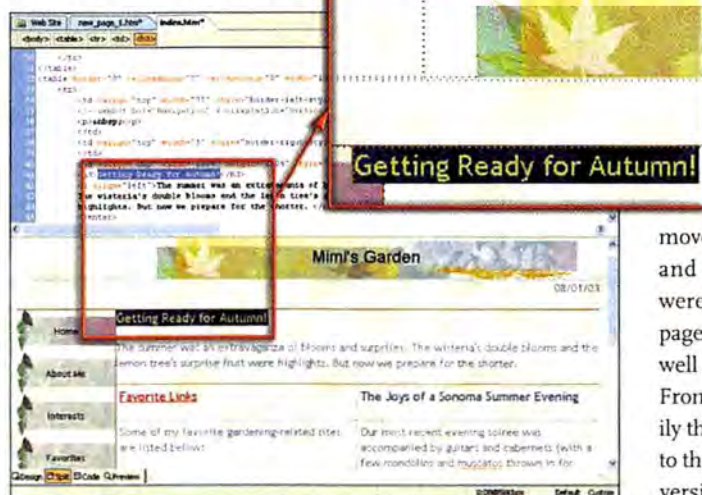
FrontPage 2003 also catch-

es up with the more expensive (\$399) Dreamweaver in several other useful ways. You can now specify which versions of Internet Explorer or Netscape you want to tailor your site to, and the new page rulers and background layout grid let you place elements on the pages with much more precision than was possible in previous versions. Schools, government agencies, and anyone else who would like to build a site that complies with federal accessibility guidelines will appreciate the program's new accessibility checkers, which prompt

users to add helpful text descriptions to their images.

Aside from a single crash it suffered when importing clip art from the Visio 2003 beta version, our beta FrontPage worked without a hitch—and seemed notably sprier on the same PC than previous versions as we

moved from screen to screen and from page to page. We were able to import and edit pages from an existing site, as well as post pages to a site via FrontPage's built-in FTP. Easily the most important update to the program since the 2000 version, FrontPage 2003 continues to trail Dreamweaver in some areas, but its lower



FRONTPAGE 2003'S split-screen capabilities let you edit comments embedded within your code without switching to another view.

72 PRODUCTIVITY APPLICATIONS

Microsoft Office FrontPage 2003,
Microsoft Office Visio 2003 Standard

74 DESKTOP PCs

Hush Mini-ITX, Tranquil PC, PC Power &
Cooling SleekLine 3000MX
SPAM-BLOCKING SERVICE
Mailblocks

76 PRESENTATIONS

InFocus LP120
DIGITAL CAMERA
Sony Cyber-shot DSC-U60

78 DIGITAL IMAGING

Canon CanoScan 9900F
FINANCIAL SOFTWARE
Intuit Quicken 2004

80 VIDEO EDITING SOFTWARE

Adobe Premiere Pro
VIDEO CONVERSION
HP DVD Movie Writer Dc3000
SECURITY
SecurSoftware SecurLock 1.3

82 AUTHORIZING SOFTWARE

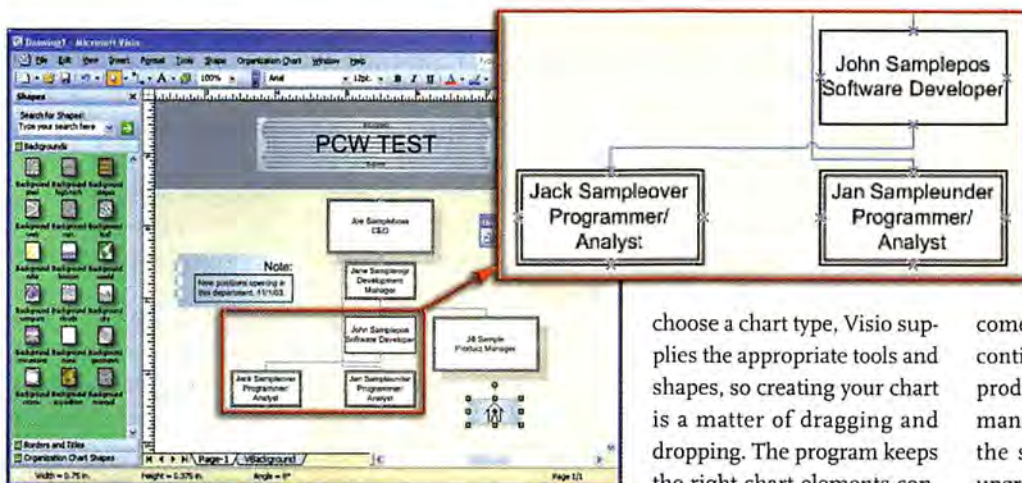
Ahead Software Nero 6
Ultra Edition

84 PERSONAL DIGITAL ASSISTANT

Sony Clie
PEG-UX50



80



VISIO 2003'S drag-and-drop interface makes flowcharting easy, and the updated application offers an improved selection of shapes.

price makes it a good bargain for first-time and intermediate-level Web site builders.

CHARTS DONE RIGHT

VISIO HAS LONG been the application of choice for business and technical professionals who produce flowcharts, organization charts, time lines, network diagrams, and the like. As Visio has evolved, people have started using it for even more complex jobs, such

as uncovering places where employees in large companies may be duplicating work. In our tests of a beta version of Office Visio 2003, we found that it continued to excel at these jobs, and more.

If you're new to Visio, the Getting Started tutorial should have you constructing various charts—for example, block diagrams, workflow charts, and project schedules—in no time. As always, once you

choose a chart type, Visio supplies the appropriate tools and shapes, so creating your chart is a matter of dragging and dropping. The program keeps the right chart elements connected as you make changes, and a context-sensitive help box remains on screen in the upper-right corner.

If you're unsure which chart fits your needs, you can check the Diagram Gallery for finished examples. Catering to the growing interest in such business revamp efforts as Six Sigma (an industry-standard methodology that companies now use to spot problems and improve operational efficiency), Microsoft has introduced program-specific templates.

In a handy improvement for workgroups, a review option helps you track who added which comments and chart elements. Also, if you want to use Visio to create a calendar detailing a project schedule, a wizard will quickly import your Outlook calendar.

And finally, like Microsoft's other revamped Office applications, Visio 2003 uses XML.

This enhancement enables you to integrate live data from company databases into your Visio diagrams, for example.

Whereas the new FrontPage remains a low-cost up-and-

comer for Web design, Visio continues to be the high-end product in its category, commanding a price of \$199 for the standard version (\$100 upgrade) and \$499 for the Pro version, which adds tools for engineers and IT managers (\$249 upgrade). If all you need is a basic flowchart generator, SmartDraw.com's \$69 SmartDraw Standard makes a fine alternative; but if you can use its more-powerful features, Visio 2003 remains a sound business investment.

—Dennis O'Reilly and
Laurianne McLaughlin ■

WHAT'S NEW**Notable Updates to FrontPage and Visio****Office FrontPage 2003**

Much-improved HTML code generation; split view that shows code and page; new accessibility checkers for meeting federal guidelines.

Office Visio 2003

Review option to help workgroups track changes; templates for quality-control standards; more flowchart creation options.

Office FrontPage 2003

Microsoft

Beta software, not rated

Better features, performance
make this a no-brainer upgrade.

List: \$199, upgrade \$109

find.pcworld.com/37307

Office Visio 2003 Standard

Microsoft

Beta software, not rated

Improvements make it a worthy
investment for power users.

List: \$199, upgrade \$100

find.pcworld.com/37304

Fanless CPUs: The Sound of PC Silence

DESKTOPS

EVER THOUGHT computers should be seen and not heard? Two tiny systems from overseas vendors aim to make that a reality. I tested a nicely designed, compact system from Hush Technologies in Germany and another from Tranquil PC in the UK. And while neither has enough computing power to displace a workhorse desktop, these largely silent PCs are adequate for basic office tasks and even for some home-theater use.

At the core of both units is VIA's EP800-M motherboard.

heat sink. My Hush PC (cleverly equipped with heat-dissipating metal fins along the edges) did grow noticeably warm to the touch during PC WorldBench 4 testing.

LOW NOISE, POWER

THE PREPRODUCTION black aluminum **Hush Mini-ITX** PC that I looked at came with 256MB of RAM, an 80GB hard drive, a combination DVD-ROM and CD-RW drive, and an inflated price tag of about \$1066 (that's sans keyboard, mouse, and monitor, and before taxes and shipping).

case was less refined and its optical drive made considerable noise, diminishing its silent-PC credibility.

VIA doesn't promote the 1-GHz C3 as a performance processor, and our test results show why. The Hush turned in a score of 73 on the PC WorldBench 4 test suite of general business apps; the Tranquil PC logged a 67. In comparison, even the eight value laptops on this month's *PC World's Top 15 Notebook PCs* chart managed an average WorldBench score of 101.

Despite their low benchmark scores, both machines proved quite capable of handling Web surfing, e-mail, and office tasks in informal testing. In the living room, each played DVD movies competently, and (working with my own add-in PCI TV tuner card) each successfully captured TV content at VHS quality. On the other hand, when I ripped a CD on them, both silent PCs took about twice as long as my PC (likely due to the limitations of their slim-line optical drives).

Of the two, the well-built Hush PC is the better value despite its higher price. Either makes a good choice if you don't need a lot of computing power and don't mind spending extra for an ultraquiet PC.

—Eric Dahl

QUICK TAKES

A Powerhouse Living-Room PC



THE PC POWER & Cooling **SleekLine 3000MX** targets power users seeking a compact system that's capable of handling home-theater PC duties. My shipping unit—loaded with a 3.2-GHz Pentium 4, 1024MB of DDR-400 SDRAM, and two hard drives configured in a 240GB RAID arrangement—ran quieter than most desktops, though louder than the fanless Hush and Tranquil PCs (at left). In performance, the \$2999 system trounced both, however, garnering an impressive PC WorldBench 4 score of 136. find.pcworld.com/37301

—Tom Mainelli

Mailblocks Improved

THE WEB-BASED e-mail service **Mailblocks** can effectively block junk messages by using challenge/response technology that forces senders to prove that they're real. In the past, however, people whose addresses had been verified by one Mailblocks user would be challenged anew each time another friend or colleague began using Mailblocks. The updated service keeps track of all verified users, eliminating repeat challenges. Other improvements include customizable challenges and a very much needed spelling checker. The yearly fee remains \$10. find.pcworld.com/37280

—Tom Mainelli



BOTH THE TRANQUIL PC (top) and the Hush Mini-ITX use fanless cooling technologies that let them run almost silently.

Measuring a modest 6.7 by 6.7 inches, it offers an integrated 1-GHz CPU called the C3, a single PCI slot, one DDR-266 memory slot, and integrated graphics with a TV-out jack.

This VIA chip does not require a cooling fan, so companies like Hush and Tranquil can design nearly silent systems around it—a welcome change from today's noisy, multifan desktop machines. Both PCs use technology that draws heat from the processor into the PC's case, effectively turning the chassis into a big

The preproduction **Tranquil PC**, tagged at a relatively modest price of \$822 for the box alone, came with more RAM (512MB) and a bigger hard drive (120GB) in addition to its combination DVD-ROM and CD-RW drive. Although the Tranquil was attractive, its

Hush Mini-ITX

Hush Technologies
Preproduction unit, not rated
Beautifully designed, but a little underpowered and overpriced.
Street price: \$1066
find.pcworld.com/37253

Tranquil PC

Tranquil PC
Preproduction unit, not rated
Less expensive than the Hush, but its optical drive was too loud.
Street: \$822
find.pcworld.com/37256

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A Mighty Mini-Projector

PRESENTATIONS

MOBILE USERS who want a projector for their road shows will love InFocus's new **LP120**. Weighing just 1.98 pounds and standing 2.05 inches tall, the svelte, eye-catching LP120 is a solid performer capable of projecting bright, colorful images. The unit's biggest drawback is its not-so-diminutive \$2799 price tag.

Whereas most portable projectors tend to be about equal

in length and width, the LP120 is oblong, measuring 4 inches long by 9.75 inches wide. But the LP120's small size belies its excellent projection power: It boasts the same native XGA (1024 by 768) resolution and 1100 ANSI lumens of brightness as DLP (Data Light Processing) projectors often twice its size or larger.

My tests of a preproduction LP120 yielded impressive—and amazingly quiet—results. PowerPoint images, digital photos, and various other test images appeared sharp and bright when projected a distance of about 8 feet from machine to screen, making it a good fit for the average small conference room accommo-

LP120

InFocus

Preproduction unit, not rated
Featherlight projector is a pricey
marvel of form and function.

List: \$2799

find.pcworld.com/37313



THE TINY InFocus LP120 weighs less than 2 pounds.

dating a dozen or so people.

Besides accepting computer input, the LP120 supports video and audio input, though its built-in 1-watt speaker is incapable of delivering robust sound for a multimedia presentation (or a DVD movie). The bundled remote control offers relatively few functions and lacks access to most of the projector controls. (InFocus provides three different full-featured remotes, but each of these costs extra.)

My test unit came with a protective sleeve for the projector and a pouch for the cables, but no traditional carrying case. (You can, however, upgrade the package to include a custom Coach briefcase for \$500 more.) Even without the elegant case, the LP120 isn't cheap; but for people who value good performance and excellent portability, it has the makings of a worthy investment.

—Richard Jantz

Sony's Underwater Wonder

DIGITAL CAMERA

HERE'S A CAMERA suitable for an active lifestyle: Sony's \$250 **Cyber-shot DSC-U60** lets you snap photos in rugged, outdoor settings while skiing, hiking, or even snorkeling. Yep, the U60 is waterproof—in fact, it's capable of surviving

a swim in up to 5 feet of water.

I dunked my shipping version of the 2-megapixel U60 in a swimming pool for my own tests; I also asked divers at San Francisco's Steinhart Aquarium to give it a test run in the Fish Roundabout tank. The resulting photos weren't always perfect, but they certainly were unique.

The 6.7-ounce U60 is small and easy to use. You can hold its vertically oriented body with one hand while operating such controls as the shooting mode and the settings menu. The solidly built camera comes with a large rubber wrist strap, a plastic housing, and a lock-equipped bottom cover that closes tightly to protect the USB port, batteries,

and media card. My biggest complaint: The right-tilted LCD forces you to tilt the camera in order to frame a straight shot. Otherwise the orientation of your image will also be slanted.

The U60 carries a 33mm (35mm film equivalent) fixed lens and a built-in flash, but no zoom capability or optical viewfinder. It runs on two included AAA nickel metal hydride rechargeable batteries, comes with a charger, and packs a meager 8MB Memory Stick that can hold up to 15 maximum-resolution images.

Sony didn't design the U60 for serious underwater photography (the company suggests that you limit the U60's swim time to about 30 minutes at a time). But if you en-



DIVERS TEST the Cyber-shot DSC-U60 in a huge fish tank at Steinhart Aquarium.

joy water sports or just want a camera that you can knock around a little, the affordable U60 makes a fine choice.

—Grace Aquino ■

Cyber-shot DSC-U60

Sony

★★★★☆

Good camera for water-friendly adventure seekers, but the quirky, tilted LCD is bothersome. Street price: \$250

find.pcworld.com/37310



SONY'S DSC-U60 features an awkwardly tilted LCD.



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Canon's Cleanup Scanner

DIGITAL IMAGING

CANON'S NEW \$400 **CanoScan 9900F** is a powerhouse flatbed scanner that captures crisp, colorful images from film or prints—and can automatically clean up old, damaged photos.

In addition to solid 48-bit color depth and high 3200-dpi resolution, the 9900F has an improved version of Canon's built-in photo restoration feature, dubbed Film Automatic

Retouching and Enhancement (FARE). This impressive technology—part hardware and part software—includes options for correcting fading and graininess, as well as for removing dust and scratches.

Although using the FARE tools does slightly increase the length of time the 9900F takes to complete a job, the scanner still operates at a relatively brisk pace through its USB 2.0 interface (the unit also has a FireWire port). For example,

with FARE, my shipping unit took approximately 3 minutes to produce a 10MB, 1600-dpi scan of a 35mm negative—still far less time than

it would take me to make such corrections manually using the bundled image editor.

The 9900F handles text documents and performs optical character recognition, too; but it targets users who demand high image quality. If you're primarily interested in basic document scanning, consider lower-priced options.

The new Canon measures up to similarly priced scanners from Epson and Microtek, and its powerful, versatile photo-restoration capabilities make it a fine choice for anyone serious about scanning.

—Richard Jantz

Canon

CanoScan 9900F

★★★★★

Street: \$400

Top-notch unit for serious users.

find.pcworld.com/37163



CANON
CanoScan
9900F.

Solid Quicken Update Fails to Dazzle

FINANCES

INTUIT'S QUICKEN delivers some noteworthy changes in its 20th anniversary edition, including an improved summary page and a redesigned Investing Center. But even so, **Quicken 2004** isn't a vital upgrade, and new users should consider other options.

Express Setup makes getting started easy, and the new Financial Overview section, with its multitude of charts,

simplifies the task of tracking your net worth. The Investing Center serves up your portfolio in more ways than ever.

In my examination of a beta copy of Quicken 2004 Premier Home and Business, I found the interface quite similar to last year's, with some appealing tweaks (I liked the way the new version grayed out past transactions, for example). In addition, Intuit has soft-pedaled the marketing of its financial services—a relief after Quicken 2003's visual hard sell (and Microsoft Money's; see find.pcworld.com/37478). However, Money is more generous with its trial offers.

Like Money, Quicken comes in a range of editions: Basic (\$30), Deluxe (\$60, with more

planning tools), Premier (\$80, with more tools for investors), and Premier Home and Business (\$90, with tools for tracking business expenses). All four packages are full-featured

and well-designed, but if you own a recent edition of Quicken, there's no compelling reason to upgrade. And Money's mail-in rebates significantly lower the cost of its editions—making them real spoilers to Quicken's birthday party.

—Yardena Arar

Quicken 2004

Intuit

Beta software, not rated

Street: From \$30 (Basic) to \$90

(Premier Home and Business)

First-rate personal finance app, but Money is a better deal.

find.pcworld.com/37235



QUICKEN 2004's Financial Overview section tracks assets and liabilities and presents the data in easy-to-read charts.

QUICK TAKES

Convenient Wi-Fi Spotter



WHEN YOU USE Wi-Fi on the road, you have to boot up your notebook to see if you are within range of a signal. Enter Kensington's \$29 **Wi-Fi Finder**, a credit card-size device that checks for a usable 802.11b or 802.11g wireless signal in your location. A red light means no signal; a single green light, a weak one; and three green lights, a strong one. In my tests, however, recognition was erratic.

—Michael Lasky

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Premiere Pro Offers Plenty of Controls

VIDEO EDITING

IF YOU TAKE video editing seriously and you need software loaded with professional-level features, you'll find that there's a lot to like in the new Adobe **Premiere Pro**.

The \$699 package—which runs only under Windows XP (Pro or Home)—uses a minimalist interface in which all the tools occupy windows that you can open, move, or close.

This time, Adobe revamped the Premiere Pro Timeline, which represents the flow of the video over time. The update makes the tool easier to use.

Premiere Pro supplies an ex-

Premiere Pro

Adobe

Beta software, not rated

The most powerful program for video editing on the PC.

List: \$699

find.pcworld.com/37205



THE PREMIERE PRO Timeline illustrates your entire production, making it easy to add, remove, and reposition chunks of video.

tensive set of filters for doing color correction and for cleaning up video. Owners of Adobe's After Effects visual effects program can readily employ the two programs in tandem to add cool visual effects.

Adobe also comes with tools for fixing poor sound and for mixing audio tracks together.

Premiere's biggest limita-

tion is its lack of DVD authoring tools. Though it can burn video to DVD, it lacks the ability to create menus and other extras (to do those tasks, you need Adobe's Encore DVD).

Overall, authoring quibbles aside, Premiere Pro remains the best video editing program available for the PC.

—Richard Baguley

QUICK TAKES

Affordable PC Security

IF YOU'RE after corporate-level data security but don't want to buy 500 licenses, consider SecurSoftware's \$130 **SecurLock 1.3**. The latest version adds data shredding to the software component's long list of capabilities. Other features include USB token- and PIN-based Secure Login; an array of unique user name/password combinations that you can drag and drop where needed; and encryption to protect your attachments, folders, and files.

find.pcworld.com/37166

—Rex Farrance



HP's Video Conversion Tool

DVD BURNER

WHEN YOU'RE ready to convert your stacks of cherished (but now only rarely watched) videotapes to DVD, consider Hewlett-Packard's clever new **DVD Movie Writer Dc3000**.

There are many ways to do the conversion job (see "Goodbye, VHS; Hello, DVD," page 117), but only the \$399 Dc3000 currently combines analog video inputs with a DVD+R/RW burner in a single, external device. Connect the sleek silver unit to your PC's USB 2.0 port, run a cable from your VCR or other video source to the Dc3000's composite video

or S-Video input, install the software, and you're ready to start. An MPEG-2 encoding card



HP DVD Movie Writer Dc3000.

collects the incoming analog video signal and encodes it digitally in real time.

The hardware is nice, but what really distinguishes the Dc3000 is HP's Video Transfer Wizard software, which walks you through the process of converting your video and then burning it to DVD. The wizard's scalable timer can encode and record up to two hours of video unattended.

While using a preproduction unit to encode two test videos from my home VCR, I ran into a few rough spots—I had to reset the hardware repeatedly so the software could recognize my video source—but overall, the unit's capabilities impressed me. (HP says

that it is working to correct the glitch I encountered.)

Best of all, you get the entire package, including a generous software bundle that contains additional video and sound editing apps, for only about \$50 more than you'd pay for a comparable, high-quality external DVD burner. That's a premium I wouldn't hesitate to pay for the ease of preserving treasured memories.

—Melissa J. Perenson ■

DVD Movie Writer Dc3000

Hewlett-Packard

Preproduction unit, not rated
Intelligently designed package makes updating to DVD easy.

List: \$399

find.pcworld.com/37526

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Nero 6 Ultra Edition

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adds a capable DVD/movie file player, a much-improved Nero Vision Express 2 movie-authoring and editing application, and the brand-new BackItUp program. Augmenting the bundle are audio editors, a host of utilities, a jewel-case cover designer, and MPEG-4 encoding à la DivX.

Taking a hint from Roxio's user-friendly Easy CD Creator, Nero 6 Ultra ties the suite together with an elegantly designed launch panel, called StartSmart, that is completely configurable and shows only the applications you use.

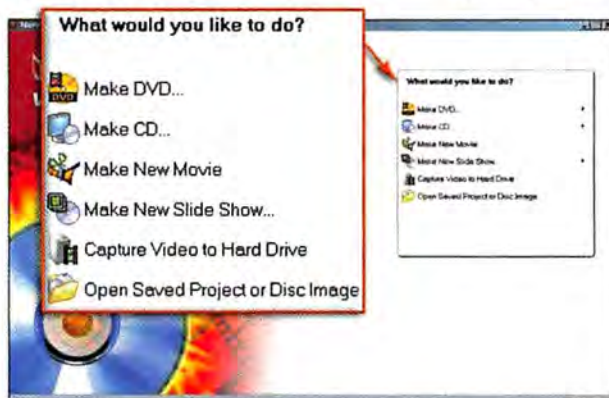
In my tests with shipping software, I noticed small interface glitches throughout the

suite (Ahead has been quick to post fixes), and I found the new DVD player promising but not yet full-feature. I also didn't care for the strict step-by-step approaches used by

Nero Vision Express 2 and BackItUp, which grow tiresome to walk through when you've acclimated yourself to the way they work.

But in spite of these drawbacks, the suite's impressive capabilities won me over.

—Jon L. Jacobi ■



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Sleek Sony PDA Impresses

P D A S

NONE OF SONY'S PDAs look boring, but the company has outdone itself with the new **Clié PEG-UX50**—a cleverly designed keyboard-based unit

that has more traits in common with a laptop than a conventional handheld. Unfortunately, one of those traits is a high price tag—\$699.

The 6-ounce, Palm-based PDA may look like a miniature notebook, but at 4 by 3.5 by 0.75 inches, it's a lot easier to carry. The wide 2.75 by 1.75-inch display offers 480-by-320 resolution, and my shipping unit's screen—which also can be flipped around and over to resemble a diminutive tablet PC—was clear and sharp with excellent colors.

The keyboard improves

greatly on the undersize ones other Palm-based units carry. The keys are bigger, and their tactile response during thumb typing makes this Clié perfect for taking notes or writing short e-mail messages.

Powered by Sony's new Handheld Engine processor and packed with 104MB of memory, the PEG-UX50 ran all the included apps well and easily handled several extra ones I added (though it lacks the conventional Palm buttons that some software additions use, so some games are difficult to play on it).

The PEG-UX50 offers built-in Bluetooth and 802.11b wireless connections. Its NetFront Web browser rendered pages well, but some smaller fonts proved a bit hard to read.

Among its other amenities: a built-in, 640-by-480-capable camera that can also record video, and a MemoryStick Pro slot. The unit's rechargeable lithium ion polymer battery sustained about two days of casual use between charges; employing the 802.11b connection significantly reduced battery life, however.

PDA aficionados will find the PEG-UX50 a cool and extremely functional device—if they can afford it.

—Richard Baguley ■



SONY
Clié PEG-UX50.

Clié PEG-UX50

Sony Electronics

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PHOTOGRAPH: MARC SIMON

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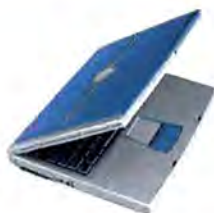
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50 Fixes for the Biggest PC Annoyances

Windows gone wacky? **Hardware gone haywire?** Software gone screwy? **Take a deep breath—help is here.** BY STEVE BASS

DID I EVER STRIKE A CHORD: Reader response to last October's article on the biggest PC annoyances (find.pcworld.com/36893) was overwhelming. But that story barely scratched the surface of what bugs me about hardware and software. Countless other nettlesome irritations and exasperating glitches await fixing. So I'm back—the king of kvetch—with 50 more cures for aggravating PC foibles, from software that won't stop nagging to CD drives that won't stay shut. I'll introduce you to five de-annoyifiers, utilities that take the sting out of computing, and I'll tackle the programs that clutter your system tray, desktop, and Start menu. My fixes will put your PC back on the straight and narrow. ►

ILLUSTRATIONS BY EDWIN FOTHERINGHAM



Mr. Jotheringham

Broken Windows

Give S-l-o-w Menus a Goose

The Annoyance: I was primed for a fast PC experience, but there I sat, tapping my fingers as menus slowly came into view.

The Fix: In Windows 98, Me, and 2000, right-click the desktop and choose *Properties•Effects*. Uncheck *Animate windows, menus and lists* (Windows 98) or *Use transition effects for menus and tooltips* (Me and 2000). In XP, right-click the desktop, choose *Properties•Appearance•Effects*, and uncheck *Use the following transition effect for menus and tooltips* (see **FIGURE 1**). Now my fingers can tap on the keyboard.

Show All Recent Docs

The Annoyance: The Start menu's Documents folder (My Recent Documents in Windows XP) lets me reopen files I've been working on in a trice, but Windows lists only 15 documents there, and older links disappear from the list too soon.

The Fix: To get access to more recently used files, place a shortcut to Documents (or My Recent Documents) on your desktop. Navigate in Windows Explorer to the Recent folder (its location varies depending on the version of Windows; mine is at C:\Documents and Settings\username\Recent). Right-click and drag the folder's icon to the desktop. Release the right button and choose *Create Shortcut(s) Here* (XP loses the parentheses). When you open the folder with this shortcut, you'll see links to all the files you've worked on since the last time you purged the list.

Explorer's Vanishing Task Pane

The Annoyance: The task pane on the left side of Windows XP's folder windows is filled with terrific links and wizards. I used to click the Close button (the "X") in the upper-right corner of the Search or Folders pane to reveal the task pane; but when I did this in the My Network Places folder, the task pane was a no-show.

The Fix: My bad on this one. Seems I had accidentally changed my Folders view back to that of Windows 98 (or "classic").

It's an easy mistake to make, but it's also easy to correct: Select *Tools•Folder Options*, and choose *Show common tasks in folders* on the General tab. Click *OK*, and the left pane of the folder window will once again display those luscious (and valuable) links to common folder tasks and other desirable spots on your PC.

The Fast Track to File Paths

The Annoyance: Copying a folder's path and name to paste into an e-mail message or a file-save dialog box is unduly difficult.

The Fix: A fast alternative is to open Windows Explorer, navigate to and select the folder in question, click the Address bar to highlight it, and press **<Ctrl>+C**. Voilà! The path is in your Clipboard. You say that your Address bar isn't showing? Select *View•Toolbars•Address Bar*.

Missing Quick Launch Toolbars

The Annoyance: During a lengthy session with Windows Explorer, I somehow deleted the Quick Launch toolbar and at first couldn't figure out how to get it back.

The Fix: I still haven't determined why

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THE DE-ANNOYIFIERS: FIVE FREE TOOLS TO THE RESCUE

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Zip between IE windows: When you're in hyperbrowse mode, with three different apps and five or more sessions of Internet Explorer open, clicking **<Alt>+<Tab>** moves you through all of 'em. Brett Bartholomew's free IEScroll is like having **<Alt>+<Tab>** just for IE. Install IEScroll and then press the **<Scroll Lock>** key to jump to the next open Internet Explorer window.

Edit read-only image files: When you copy a bunch of photos to a CD, the file attribute changes to Read-Only—a big annoyance when you copy the files back to your hard drive for editing. David Crowell's free CROA tool lets you right-click the folder and choose *Clear Read-Only Attributes*.

IE proxy stand-in: When you take your notebook on the road, having to fiddle with Internet Explorer's proxy settings

before connecting to a client's LAN or to a hotel's Internet connection is annoying. The solution is ProxyPal, a free IE add-on that lets you toggle your browser's proxy on and off.

For the proxy change to take effect, you have to close and reopen Internet Explorer.

Hard copy of your MP3 playlists: Suppose that you want to e-mail a list of your MP3s to a friend as a text message. Instead of copying and pasting each file name separately into a text editor, use PrintFolder, a free utility whose sole purpose is to save or print a list of files from any folder.

Play that Flash: If you've ever enjoyed playing a Macromedia Flash movie on a Web site, you know how difficult playing it again or sharing it with friends can be. Grab a copy of the free Flash Movie Extract Pilot program; it automatically finds the Flash files in your Internet cache, plays them, and saves them in the folder of your choice. And see page 94 for a great tip on saving your streaming video files for replay.



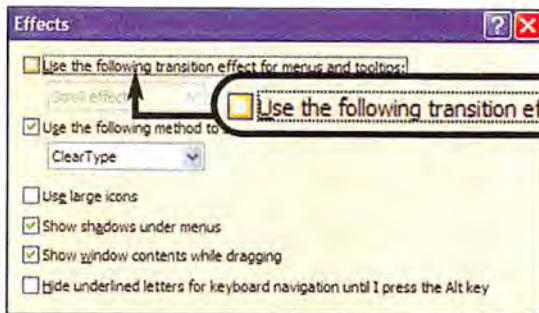


FIGURE 1: BRING LIGHTNING-FAST MENUS back to Windows by unchecking Display Properties' transition-effects option.

Quick Launch pulls the occasional disappearing act, but retrieving it is a snap: Right-click a free space of the taskbar (you may have to drag it up to make room) and choose **Toolbars•Quick Launch**.

Bonus tip: To stop yellow file info pop-ups, open Windows Explorer, select **Tools•Folder Options•View**, and uncheck **Show pop-up description for folder and desktop items**.

E-Nervating E-Mail

E-Mail With a Cast of Thousands

The Annoyance: I hate e-mail messages that waste bandwidth (and screen space) with a To: field longer than the text.

The Fix: If you send an e-mail message to more than one or two people, hide the recipient list by using the Blind Copy (Bcc) field. Address the message to yourself, or leave the To: field blank. (Note that some spam filters block e-mail with a blank To: field.) To display the Bcc field, select **View•All Headers** in Outlook Express, **View•Bcc Field** in Outlook, and **To:•Bcc** in Netscape. In Eudora, Bcc is on by default.

A Shorter Path to Your Out-Box

The Annoyance: I often send e-mail to the same buddy. But the e-mail programs I use don't have shortcut keys to simplify sending a message to the same recipient.

The Fix: Right-click your desktop and select **New•Shortcut**. Then type **mailto:your-buddy@hisISP.com** in the Command line (Windows 98 and Me) or location field

(Windows 2000 and XP, see FIGURE 2). Enter your pal's e-mail address after "mailto:". Click **Next**, give the shortcut a name, and place it in your Quick Launch toolbar. When you click it, your e-mail pro-

gram will open a new message with your friend's address in the To: field.

IE E-Mail Headache

The Annoyance: Internet Explorer 6 added 'Your files are attached and ready to send with this message' to the body of every message I sent when I clicked **File•Send•Link by E-mail**. Just as annoying, IE made the subject 'Emailing:', followed by a portion of the link text, instead of letting me decide the subject.

The Fix: A Registry file will add an 'Email Page' option when you right-click in IE. The message is the name and URL of the Web site, and the subject is the name of the site. Go to find.pcworld.com/37394 and scroll to line 60, Email Page—IE, to download the file.

E-Mail Memory Loss

The Annoyance: I keep a copy of all the important e-mail messages I send, but my memory isn't any better than my bookkeeping, so every now and then I would forget to retain a needed copy.

The Fix: I set my e-mail program to store a copy of all my outgoing mail. In Outlook Express, choose **Tools•Options•Send** and

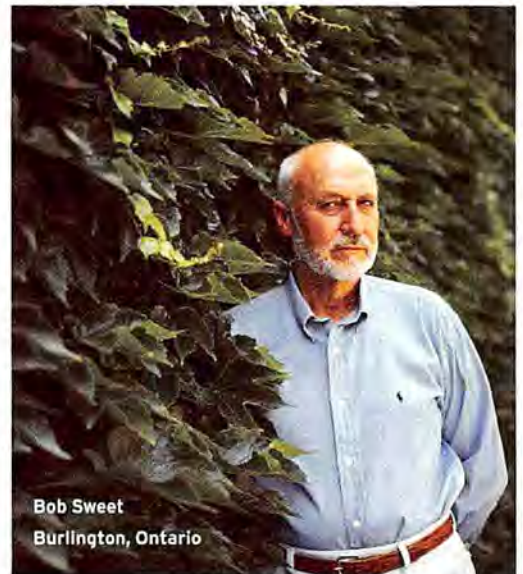
check **Save copy of sent messages in the 'Sent Items' folder**. In Outlook, click **Tools•Options•Preferences•E-mail Options** and check **Save copies of messages in Sent Items folder**. In Eudora, select **Tools•Options•Composing Mail** and check **Keep copies**.

'FYI' Means 'Don't Reply'

The Annoyance: Some people feel obligated to reply to my e-mail, even when I just sent an interesting link or some other nugget with "FYI" in the subject. I needed a polite way to say "Don't RSVP."

The Fix: End your e-mail with "This is just FYI, so don't feel obligated to reply." It invites people not to respond with something lame like "Thanks" or "I agree." ▶

UP AND DOWNGRADE



Bob Sweet
Burlington, Ontario

READER ANNOYANCE: When I upgraded Netscape, I lost features I loved. The upgrade for PrintMaster didn't work with Netscape; and when I replaced my mechanical mouse with an optical trackball, some great features disappeared.

THE FIX: Feeling a bit gun-shy, I removed the "upgrades" from my system and reinstalled the older versions. Getting back the features I liked made going backward seem like a step up. I sent an e-mail message to Netscape, which replied, "Thank you, we will use your suggestions to improve future products." Wait a minute, your old product was better than the new one!

Hardware Headaches

Plodding Cell Phone Data Entry

The Annoyance: Despite all the technology packed into my cell phone, I still had to enter phone numbers one at a time.

The Fix: DataPilot's \$60 Cell Phone Data Transfer Suite connects my phone to my PC via either a serial or a USB cable (both are included). I used the software to transfer contact data from Outlook to an an-



FIGURE 2: CREATE AN E-MAIL shortcut to open a new message with the recipient's address filled in automatically.

cient Nokia 5160 digital phone. The program supports Pocket PCs and Palms, too, and it works with Outlook Express and Act. If you don't use one of these contact managers, you can stick with DataPilot's own phone book manager. Go to www.datapilot.com for more details.

Fumbled USB-Flash Connections

The Annoyance: I bought one of those cute little removable flash media devices. It stores only 16MB, but it was dirt cheap, and it offers me a handy alternative to using a floppy disk. Still, I hated crawling under my desk to stick it into a USB port on the back of my PC.

The Fix: Many larger-capacity flash drives come with their own USB cable, but some cheapo models don't. I bought a 6-foot male-to-female extension cable for \$5 from www.greatcable.com, and now I'm back to working on my desk, not under it.

A Cable Calamity

The Annoyance: My monitor would occasionally flicker on and off. I would reboot the system, and it would work fine again, only to start flickering after a few hours.

The Fix: Then I checked the cables. Don't think loose cables ever cause problems? I once spent half a day diagnosing my faulty dial-up connection only to discover the telephone line was plugged into the wrong socket on the modem. The same problem can arise with your modem, your scanner, your printer, or any other device that's connected to your PC with a

cable. Most cables have two connection-tightening screws, make sure both of them are twisted tightly in place.

Reject Your CD's Auto Eject

The Annoyance: Windows XP mindlessly insisted on popping open the CD-RW drive every time I finished writing data to a CD—whether I wanted to eject the disc or not.

The Fix: I scotched this habit and saved my drive from extra wear and tear in just a few clicks. Open *My Computer*, right-click your CD-RW drive, click *Properties*•*Recording*, and uncheck *Automatically eject the CD after writing*.

One Too Many Battery Chargers

The Annoyance: When I travel, I hate schlepping my cell phone charger. Half the time the charger would slip my mind, and I'd end up with a dead battery.

The Fix: Since I take my notebook, too, I double up. American Power Conversion's Cellular Phone USB Charger lets me charge my phone right from my notebook's USB port. The device costs from \$8 to \$14, depending on the cell phone you use. Go to find.pcworld.com/37400 to find the right model for your phone.

Peremptory Power Blackouts

The Annoyance: Whether it's due to a rolling blackout or a lightning storm, a sudden power outage is no joke.

The Fix: I got an uninterruptible power supply—a big battery to keep a PC running long enough to let you shut it down properly. A small UPS (\$40 or so) keeps your system going for about 5 minutes; that's long enough to close your open files and apps before turning your system off normally. American Power Conversion's \$100 Back-UPS ES 725 keeps my PC juiced for 10 minutes when the lights go out. Go to find.pcworld.com/37403 to figure out which size UPS your PC needs.

Maladjusted Monitors

The Annoyance: The colors on my new LCD monitor weren't quite right, and the display didn't look as sharp as I thought

OF NOTEBOOK BONDAGE

The Annoyance: I don't use my notebook just when I travel; when I get home, I use it as a desktop PC. Connecting all my peripherals and then unhooking the cables when I headed back onto the road again was a tedious affair, however.

The Fix: Belkin's \$120 Hi-Speed USB 2.0 DockStation makes packing and unpacking my laptop a breeze. The gadget has one parallel, one serial, and two USB 2.0 ports, as well as VGA and ethernet connectors. I attach my monitor, keyboard, printer, and other peripherals to the DockStation, and I run two cables from the DockStation to my notebook. When I'm leaving town, I simply disconnect the two cables from the notebook, and I'm out the door. Visit find.pcworld.com/37397 for information about the product.



PHOTOGRAPH: RICK RIZNER

YOUR SYSTEM TRAY RUNNETH OVER

UNINVITED ICONS FROM AOL, Netscape, Real, Yahoo and other vendors take up screen space and gobble up resources when dumped in your system tray. Follow these steps to keep programs from scattering their icons on your desktop, Start menu, and system tray, and to remove them after they appear.

Watch the installation: Stay alert when installing software. Always go for the custom installation instead of giving the installer free rein, so you can choose where the program plants its icons. Note that the program will still be on the All Programs sub-menu of your Start menu regardless of your decision.

Protect your system tray: WinPatrol is a freebie that alerts you whenever a program attempts to add itself to your PC's Startup group or Registry. The utility guards every place where bad guys might want to stick a Trojan horse or automatic-dialing

program, among other nasties. When WinPatrol detects a forced entry, you can allow the program into your Startup group if it's legit. If you say no, WinPatrol blocks subsequent attempts by that program to invade your Startup group.

Make a clean sweep: Hover your mouse over the icon to see which app it loads. Click *Start>Programs (All Programs in Windows XP)>Startup* to check your Startup group for programs that don't need to start automatically when Windows loads. Use the free Startup Control Panel to remove programs that start at boot-up. Visit find.pcworld.com/37472 for the download.

Load up with extra ammunition: Greatis Software's Startup Application Database at find.pcworld.com/37475 provides an extensive list of program-name abbreviations that helps you identify and explain many Startup programs.



it should. I used the device's built-in adjustments, but I still found myself doing a lot of squinting and eye-rubbing.

The Fix: Monitor manufacturers offer little help in fine-tuning a display's settings. I've used DisplayMate, a free utility from DisplayMate Technologies, since 1991. It's great for adjusting sharpness, color, contrast, and dozens of other settings on CRT and LCD monitors. Go to find.pcworld.com/37406 for a copy.

Right-click a music file in Windows Explorer, select *Convert To*, and click either *Mp3* or *Wave*. The Music Converter lets you change the output folder or rename the converted file. Visit find.pcworld.com/37409 to download your copy.

Sticky Car-Stereo MP3 Adapters

The Annoyance: Whenever I tried to plug my Creative MP3 player into my car stereo's tape slot via a cassette adapter, the gizmo would jam in the tape chute. This became so frustrating that I stopped taking the player with me on trips.

The Fix: Aerielle's \$35 AudioBug transmits data from my MP3 player to my FM radio. The gadget works with any device that has a standard 3.5mm audio-out connector (as most home stereo systems do). I choose one of four FM frequencies: 88.1, 88.3, 88.5, or 88.7 MHz. Visit www.aerielle.com for more information.

Volume That's on the Level

The Annoyance: I've ripped lots of MP3s onto my hard drive from my CD music collection. The problem was, Copeland's

"Fanfare for the Common Man" sounded so loud that it blasts me out of my chair, while the next song, Dave Brubeck's "Take Five," was way too soft.

The Fix: The trick is to adjust (or normalize) the sound level as you rip the MP3 to disk, a feature found in many audio programs. Once you've taken the audio track from your CD, however, the sound problem is in the player. Microsoft's Windows Media Player normalizes the volume of MP3s as you play them. Click *View>Enhancements>Crossfading and Auto Volume Leveling*. For a permanent fix, use MP3Gain, a free and very cool utility that analyzes and normalizes the sound levels of each of your MP3 files. Browse to find.pcworld.com/37412 for your copy.

Recalcitrant Videos

The Annoyance: My struggles with Windows Media Player had me steamed.

The Fix: Formats for digital video abound, and each one requires a different playback codec (the program that compresses and decompresses the videos). Open Windows Media Player, click *Tools>Op-* ▶

Annoying Audio/Video

Audio-File Conversion Overkill

The Annoyance: Roxio's Easy CD Creator is a great program, but it's overkill for converting a single audio file.

The Fix: It's crazy to spend more time loading a program than you spend using it to convert a file. Illustrate's free DBpowerAMP Music Converter does .wav-to-MP3 conversions (and vice versa) in a blink.

tions•Player, and check *Download codecs automatically*. Then try to play the video.

Still no luck? You may be missing the one codec you need. Make sure you have Windows Media Player 9 for Windows XP, or version 7.1 for Windows 98, Me, and 2000. Go to find.pcworld.com/37415 to download the version for your system.

Bonus tip: If you try to play a video only to be rudely informed that you lack the proper codec, go to find.pcworld.com/37424 to download Gspot, a free utility that analyzes the video and determines exactly which codec it requires. Once you have that information, head to MovieCodec.com (www.moviecodec.com) and browse the terrific collection of codecs.

OVERACTIVE WI-FI



Amy Keung, Cambridge
Massachusetts

READER ANNOYANCE: Every time I connected to the Internet using my notebook's Wi-Fi card, I got an annoying pop-up message: "One or more wireless networks available"—but I just wanted to connect to my router.

THE FIX: To restrict your Wi-Fi card to finding your primary connection, right-click *My Computer* and select *Properties*•*Device Manager*. From the list that appears, open *Network adapters* and right-click your wireless LAN card. Select *Properties*•*Resources* and uncheck the *Use automatic settings* box. Select *Basic configuration 0000* in the 'Settings based on' line, and click *OK*. From now on, the card will look only for your primary network.

Dry Video Streams

The Annoyance: I was going nuts trying to save streaming video to play offline. Windows Media Player seemed to lack that option, as did every other media player I tried.

The Fix: Most videos automatically save on your hard drive while playing in your media player. Once you've learned how to find, rename, and relocate the files for re-playing, you can run them any time you like. While the video is playing, the file name usually appears in the player's title bar. Or find the file by searching your hard drive for all files that have a video extension. Select *Start*•*Find*•*Files or Folders* (in Windows 98), *Start*•*Search*•*For Files or Folders* (in Me and 2000), or *Start*•*Search* (in XP). Then in the 'Named' field (in Windows 98), the 'Search for files or folders named' field (in Me and 2000), or the 'All or part of the file name' field (in XP), enter the following video file name extensions (with no final period, of course): *.avi, *.mpg, *.mpeg, *.asf, *.mov, *.rm, *.wmv.

The trick is to find the video files right after you've played them (they disappear when you empty your temporary Internet folders), so search by date, looking exclusively for current files. In Windows 98, set your date criteria on the Date tab; in Me and 2000, click the *Search Options* link to set date criteria. In XP, click the *When was it modified* chevron and choose *Specify dates*; the default will be today's date. When you find the file (it's likely to have a temporary name in your Internet cache folder), rename it and move it to a new location. Once you've moved the

file, you can open it by double-clicking it. See "The De-Annoyifiers" on page 90 for information on saving Flash movies.

Videos Minus the Browser

The Annoyance: Some video files I played in Window Media Player opened a site in my browser that I didn't want to visit.

The Fix: The source of this aggressive browser behavior is a dreaded HTML script embedded in numerous Windows Media files. Brett Bartholomew's free WMPopKill utility turns WMP's scripting on and off like a switch. The program automatically downloads any patches it requires for some versions of WMP. Browse to find.pcworld.com/37430 to download your copy.

SuperCookies Threaten Privacy

The Annoyance: I was upset when I found out Windows Media Player uses unique ID numbers to exchange information about me with Web sites.

The Fix: To turn off the SuperCookie tracking in WMP 7 and later, choose *Tools*•*Options*•*Privacy*. Unselect *Allow Internet sites to uniquely identify your Player* or *Send unique Player ID to content providers*, depending on your version, and click *OK* (see **FIGURE 3**). To learn more about SuperCookies, go to find.pcworld.com/37433 to see Richard M. Smith's privacy site. And visit find.pcworld.com/37436 to watch a SuperCookie in action.

Media Player Turn-Offs

The Annoyance: Every time my Windows Media Player tried to access the Internet, my firewall (Zone Labs' ZoneAlarm) alerted me with an annoying dialog box. Even though I gave my permission, it asked me again the next time I used the player. Is it dumb or something?

The Fix: Dumb? No. Smart? Yes. ZoneAlarm was simply doing the job I asked it to do—watching for anything coming into my PC from the Internet as well as all things outbound. You can let Windows Media Player head for the Internet and never bother you again by checking *Remember this answer the next time I use* ►

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FIGURE 3: KEEP WINDOWS MEDIA PLAYER from broadcasting your personal information by unchecking this privacy setting.

this program on ZoneAlarm's Alert before you click Yes (see FIGURE 4). But I recommend against doing so. Windows Media Player is a particularly meddlesome program, eager to help you download album covers when you play MP3s, or to use a unique ID number to report about you to Microsoft's Web site (see "Supercookies Threaten Privacy," on page 94, for more on this). For your privacy's sake, decide case-by-case whether to let the program access the Internet. If WMP wants to retrieve a video you requested, fine. But if the warning pops up when you're playing a file stored on your system, have ZoneAlarm block it.

Write Files to CD a Few at a Time

The Annoyance: When I first used Windows XP instead of a third-party program to burn my CDs, I would open Windows Explorer and select a bunch of files in the right pane. Then I would drop them on to my CD-RW drive icon in the left pane, click the little pop-up that says *You have files waiting to be written to the CD*, and choose *Write these files to CD* on the CD Writing

Tasks pane. But if I didn't wish to burn the CD immediately—say, because I wanted to add more files later and then burn them all at once—I was out of luck.

The Fix: As you drag the first few audio files to the CD icon, ignore that pop-up message (it will go away) and drag in more at your convenience. When you're ready to burn your CD, simply open My Computer, Windows Explorer, or any folder window; right-click your CD-RW drive icon; and choose *Write these files to CD*. (Alternatively, you can write your files via the CD Writing Tasks pane: Right-click the CD drive icon, select *Open*, and click *Write these files to CD*.) If you change your mind before burning the files to disc, open the CD Writing Tasks pane and choose *Delete temporary files*.

Internet Irritations

DSL Modem Blues

The Annoyance: I spent countless hours trying to figure out why my DSL connection couldn't access the Internet. I tested my connection with utility programs, reconfigured my pop-up and ad blocker, fiddled with Windows' TCP/IP settings, and finally gave up and called tech support—all to no avail.

The Fix: When you lose your Internet link, start your troubleshooting with a simple 2-minute reboot of your DSL modem (it works for cable modems, too). The mystery is why there isn't a diagnostic

tool to tell you when to reset your Internet access device. But eliminating that annoyance will have to wait until next year.

Lost-Password Predicament

The Annoyance: Internet Explorer automatically inserted my password into the right field when I revisited a Web site. I wanted to write down the password, but I couldn't remember it.

The Fix: Lostpassword.com's free Asterisk Key utility shows the password hidden behind practically any row of asterisks. Go to find.pcworld.com/37451 to download your copy—and please use it wisely.

Disappearing Status Bar Mystery

The Annoyance: Internet Explorer 6 would periodically lose the status bar at the bottom of its window. (When I hover my mouse over a link, the status bar shows me where the link leads to.) I had to click *View>Status Bar* to bring it back.

The Fix: To correct this bug, open a single window in IE 5 or higher and click *View>Status Bar* (if it's not already selected). Right-click a blank spot on IE's toolbar and make sure that *Lock the Toolbars* is checked. Hold down **<Ctrl>** and click the "X" in the upper-right corner of the window to close it. Open Windows Explorer and make sure *View>Status Bar* is selected. Right-click a blank spot on Windows Explorer's toolbar and make sure *Lock the Toolbars* is checked. Select *Tools>Folder Options>View>Apply to all folders*. Click *Yes* to confirm and *OK* to close the dialog box. Hold down **<Ctrl>** and click the "X" in the upper-right corner to close the window.

Nix the New Spam Threat

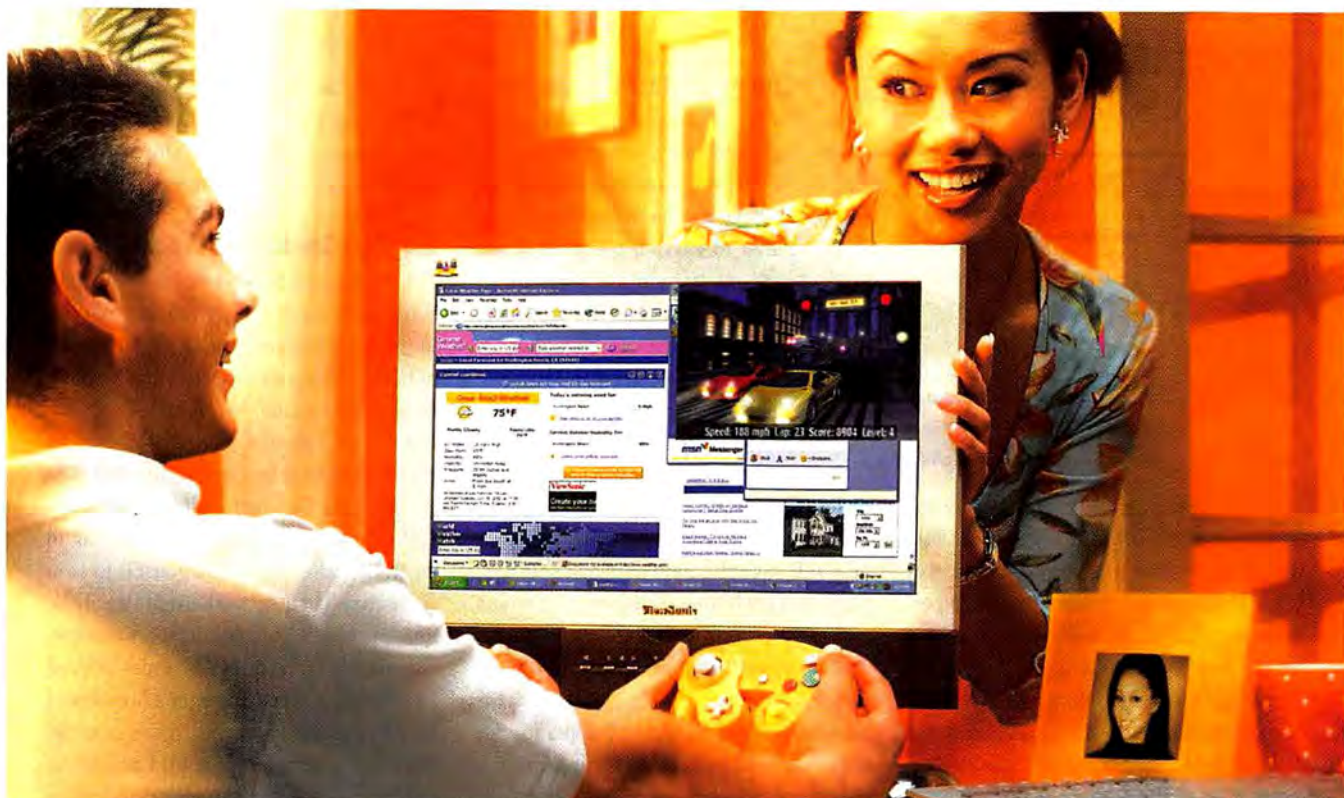
The Annoyance: I began getting pop-up ads even when I wasn't surfing the Net.

The Fix: Messenger Service ads (also called directads) are pop-up messages that blindly shower a range of IP addresses. If you have Windows 98 or Me, don't worry about them. But if you run Windows 2000 or XP without a software firewall, or if you're not attached to a router with a hardware firewall, you may see these ads pop up. The way to stop them until ►



FIGURE 4: LET WMP go on the Internet on a case-by-case basis.

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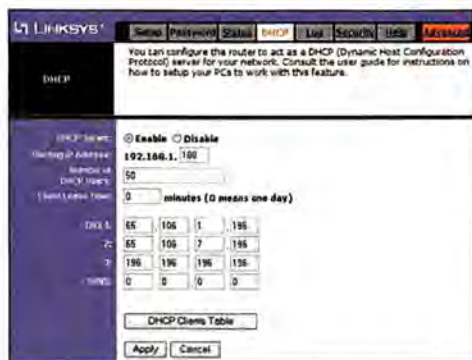


FIGURE 5: CHECK WITH YOUR ISP to make sure your IP and DNS addresses are as current as possible.

your next reboot is via Windows' Services console. Select **Start**•**Run**, type **services.msc**, and press **<Enter>**. In the right pane, right-click **Messenger** and choose **Stop**. For a permanent solution, go to find.pcworld.com/37454 and download Gibson Research's **Shoot the Messenger**—a program that is actually designed to eliminate spam from Windows Messenger but that just so happens to block these ads as well.

AOL's Hard-Drive Flogging

The Annoyance: I got tired of hearing my hard disk thrashing whenever I used AOL.

The Fix: The hard-drive whine occurred whenever AOL accessed my hard drive, causing unnecessary disk-buffer flushing. I don't know why the program feels the need to do this, and Steve Case won't return my calls (they're all routed to India, for some reason). But the good news is that you can get a free patch that forces AOL to use its own cache more efficiently. This stops the program from trouncing your hard drive and boosts the app's performance. Go to find.pcworld.com/37457 to download the fix.

IE's Max-Window Memory Lapse

The Annoyance: For some reason, Internet Explorer doesn't always remember to launch as a maximized window.

The Fix: IE New Window Maximizer is a free utility that automatically maximizes every new IE window. The program also lets you hide or close all Internet Explorer windows with the keystroke combination of your choice. Go to find.pcworld.com/37460 to download your copy.

Changing Network Setups

The Annoyance: I had to change my notebook's network configuration every time I connected to a hotel LAN or to a client's network. I had to carry a piece of paper with my network settings on it; and when I made the changes, Windows forced me to reboot.

The Fix: The cure for Multiple Network Disorder is J.W. Hance's **NetSwitcher**, a \$14 shareware program that lets you save several

different network configurations. Whenever you reach a new network location, add and save the new network settings. Once you get home, restore your previous network settings with a couple of clicks. And whereas Windows insists on rebooting no matter what, **NetSwitcher** asks for a restart only if you modify a parameter that can't take effect without a reboot. Visit find.pcworld.com/37463 to download a 30-day trial version of **NetSwitcher**.

Bonus tip: If you're having trouble connecting to a network, take advantage of the surprisingly thorough network diagnostic tool buried deep within Windows XP's Help and Support Center. Click **Start**•**Help and Support**, choose **Networking and the Web**, click **Fixing networking or Web problems** on the left, and then select **Diagnose network configuration and run automated networking tests** on the right.

Choose **Scan your system**. If you want the whole shooting match, click **Set scanning options** and check all the boxes before selecting **Scan your system**.

Clogged Broadband Pipes

The Annoyance: All of a sudden, the DSL access in my home office went from turbo to turtle. I tried every trick I could think of to speed it up—even rebooting my DSL modem and router—without success.

The Fix: My Internet service provider had set up my router to use specific DNS (Domain Name Service) addresses that my ISP supplied. Later, the ISP changed all its DNS addresses but neglected to consider that its customers might want the new numbers. The old numbers worked, sure, but the new DNS addresses worked a lot better. If you encounter a broadband slowdown that you can't figure out, call your ISP's tech support and ask if the company has changed its DNS addresses (see **FIGURE 5**). If it has, ask for help in updating the ones on your router. ■

Visit find.pcworld.com/37619 for more ways to fix PC annoyances. Contributing Editor Steve Bass runs the Pasadena IBM Users Group and is the author of *PC Annoyances: How to Fix the Most Annoying Things About Your Personal Computer* (O'Reilly, 2003), from which many of these tips were adapted. Contact him at homeoffice@pcworld.com.

THE BULKY AC ADAPTER RETURNS

The Annoyance: Last year I told you about a fix for bulky AC adapters (find.pcworld.com/36992), but I still spent too much time crawling around on my office floor, plugging those monsters into my surge suppressor.

The Fix: These days I save wear and tear on my knees with a couple of cleverly designed extension cords that I bought from Cables Unlimited (find.pcworld.com/36995). The \$8 **Power Strip Liberator** is a 1-foot extension cord, while the \$9 **Power Strip Liberator II** adds a Y-connector that lets me plug two bricks into a single outlet. The two cords have already paid for themselves simply by sparing the knees of my pants—and on top of that, there's all the money I save on chiropractor bills.



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pilot

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NEW! IBM ThinkPad T40

Distinctive IBM Innovations:

- Access Connections – easiest wired and wireless connectivity
- IBM Embedded Security Subsystem 2.0¹

System Features:

- Intel® Centrino™ mobile technology
- Intel® Pentium® M processor 1.3GHz supports Enhanced Intel SpeedStep™ technology¹
- Intel® PRO/Wireless Network Connection 802.11b¹
- Microsoft® Windows® XP Professional¹
- 14.1" XGA TFT Display (1024x768)
- 256MB DDR SDRAM std/2GB max
- 30GB hard drive¹
- Ultrabay™ Slim DVD-ROM
- 5.0-hr battery life • 4.5-lb travel weight¹
- 1-yr system/battery limited warranty¹

\$1,549*

■ NavCode 2378D2U-M175

ServicePac® Service Upgrade:²
3-yr Onsite Repair/9x5/Next Business
Day Response
#30L9195 *243

NEW! IBM ThinkPad R40

Distinctive IBM Innovations:

- Access Connections – easiest wired and wireless connectivity
- IBM Embedded Security Subsystem 2.0¹

System Features:

- Intel® Centrino™ mobile technology
- Intel® Pentium® M processor 1.3GHz supports Enhanced Intel SpeedStep™ technology¹
- Intel® PRO/Wireless Network Connection 802.11b¹
- Microsoft® Windows® XP Professional
- 14.1" XGA TFT Display (1024x768)
- 256MB DDR SDRAM std/2GB max
- 20GB hard drive
- Ultrabay Plus CD-RW/DVD-ROM combo drive
- 6.1-hr battery life • 5.6-lb travel weight¹
- 1-yr system/battery limited warranty¹

\$1,299*

■ NavCode 289723U-M175

ServicePac® Service Upgrade:²
2-yr Onsite Repair/9x5/Next Business
Day Response
#30L9189 *197

**Take off to parts unknown with an IBM ThinkPad® wireless notebook.
The world's easiest way to switch between wired and wireless.**

Wherever you want to work, the sky is the limit when you have IBM ThinkPad notebooks with Access Connections software and wireless Intel® Centrino™ mobile technology (on select models). Now it's easier than ever to switch between wired and wireless networks — whether you're at an airport, the office, an Internet café, even your kitchen! So consider the IBM ThinkPad wireless notebook, and experience a whole new level of wireless possibilities. **think freedom**

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Save on shipping. Order online.¹⁰

any problems remotely before sending a replacement part or technician. ¹These services are available for machines normally used for business, professional or trade purposes, rather than personal, family or household purposes. Not all machine types and models are covered. Service period begins with the equipment date of purchase. Service must be purchased during the original limited product warranty period. Service levels are response-time objectives and are not guarantees. A service technician is scheduled to arrive at your location within two or four business hours or the next business day (depending on service) after remote problem determination is completed. For the 9x5x4-hour service, calls dispatched after 1:00 p.m. local time, you can expect the service technician to arrive by the morning of the next business day. For noncritical service requests, a service technician will arrive by the end of the following business day. If the machine problem turns out to be a Customer Replaceable Unit (CRU), IBM will express ship the part to you for quick replacement. Onsite 24x7x2-hour service is not available in all locations. External peripherals, such as racks, tape drives and channel controllers, require their own, separate service coverage they are not covered under the attached Machine. Service activation is required immediately following purchase. For ThinkPad notebooks requiring LCD or other component replacement, IBM may choose to perform service at the depot repair center. For failing non-IBM components, customer must provide replacement part unless IBM has a Technical Support Agreement with the manufacturer. Service does not cover accessories, supply items and certain parts such as batteries, frames and covers. ²Standard shipping included when you order online. U.S. only. ³With Intel SpeedStep, processor speed may be reduced to conserve battery power. IBM reserves the right to alter product offerings and specifications at any time, without notice. IBM is not responsible for photographic or typographic errors. All IBM product names are registered trademarks or trademarks of International Business Machines Corporation in the U.S. and other countries. Lotus and SmartSuite are registered trademarks of Lotus Development Corporation, an IBM company. Intel, Intel Inside, the Intel Inside logo, Celeron, Intel Centrino, the Intel Centrino logo and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the U.S. and other countries. Microsoft and Windows are trademarks or registered trademarks of Microsoft Corporation. Other company, product and service names may be trademarks or service marks of others. © 2003 IBM Corp. All rights reserved.

Stay wired. Go wireless.
With this many choices, it's easy.



IBM ThinkPad® G40

Distinctive IBM Innovations:

- Access IBM – Simplifies access to online¹ and on-system information

System Features:

- Intel® Pentium® 4 processor 2.4GHz²
- Microsoft® Windows® XP Professional³
- 14.1" XGA TFT Display (1024x768)
- 128MB DDR SDRAM⁴
- 20GB⁵ hard drive • CD-ROM
- 1.7-hr Li-Ion battery⁶
- 1-yr system/battery limited warranty⁷

\$1,049*

NavCode 23882BU-M175

ServicePac® Service Upgrade:⁸
2-yr Onsite Repair/9x5/Next Business
Day Response

#30L9189 *197

IBM ThinkPad G40

Distinctive IBM Innovations:

- Access Connections software simplifies management of multiple connectivity environments

System Features:

- Intel® Pentium® 4 processor 2.4GHz²
- Microsoft® Windows® XP Professional³
- 15" XGA TFT Display (1024x768)
- 256MB DDR SDRAM
- 40GB hard drive
- CD-RW/DVD-ROM combo drive
- Integrated Wi-Fi wireless technology⁹
- 3.5-hr Li-Ion battery
- 1-yr system/battery limited warranty⁷

\$1,399

NavCode 238433U-M175

IBM ThinkPad R40

Distinctive IBM Innovations:

- IBM Rapid Restore¹⁰ PC software – Managed data backup and recovery solution

System Features:

- Mobile Intel® Pentium® 4 Processor 2.0GHz • M supports Enhanced Intel SpeedStep¹¹ technology¹²
- Microsoft® Windows® XP Professional
- 14.1" XGA TFT Display (1024x768)
- 16MB ATI® Mobility Radeon™ graphics
- 256MB DDR SDRAM
- 20GB hard drive
- Ultrabay™ Plus DVD-ROM
- 4.2-hr Li-Ion battery • 5.6-lb travel weight
- 1-yr system/battery limited warranty⁷

\$1,249

NavCode 2896FZU-M175

ServicePac® Service Upgrade:
3-yr Depot Repair

#30L9192 *132

IBM ThinkPad R40

Distinctive IBM Innovations:

- IBM Embedded Security Subsystem 2.0¹³

System Features:

- Mobile Intel® Pentium® 4 Processor 2.0GHz • M supports Enhanced Intel SpeedStep¹¹ technology¹²
- Microsoft® Windows® XP Professional
- 15" XGA TFT Display (1024x768)
- 32MB ATI® Mobility Radeon™ graphics
- 256MB DDR SDRAM • 20GB hard drive
- Ultrabay Plus DVD-ROM
- 3.6-hr Li-Ion battery • 6.3-lb travel weight
- 1-yr system/battery limited warranty⁷

\$1,299

NavCode 2896GZU-M175

ServicePac® Service Upgrade:
2-yr Onsite Repair/9x5/Next Business
Day Response

#30L9189 *197

IBM ThinkPad R40

Distinctive IBM Innovations:

- IBM Embedded Security Subsystem 2.0

System Features:

- Intel® Centrino™ mobile technology
- Intel® Pentium® M processor 1.3GHz supports Enhanced Intel SpeedStep¹¹ technology¹²
- Intel® PRO/Wireless Network Connection 802.11b¹⁴
- Microsoft® Windows® XP Professional
- 15" XGA TFT Display (1024x768)
- 256MB DDR SDRAM • 40GB hard drive
- Ultrabay Plus CD-RW/DVD-ROM combo drive
- 6.1-hr Li-Ion battery • 5.6-lb travel weight
- 1-yr system/battery limited warranty⁷

\$1,499

NavCode 289754U-M175

ServicePac® Service Upgrade:⁸
4-yr Depot Repair

#69P9195 *249

IBM ThinkPad R40

Distinctive IBM Innovations:

- IBM Rapid Restore PC software – Managed data backup and recovery solution

System Features:

- Intel® Pentium® M Processor 1.5GHz supports Enhanced Intel SpeedStep¹¹ technology¹²
- Microsoft® Windows® XP Professional
- Integrated dual band 11a/b Wi-Fi wireless technology¹⁵
- 15" SXGA+ TFT Display (1400x1050)
- 32MB ATI® Mobility Radeon™ graphics
- 256MB DDR SDRAM • 60GB hard drive
- Ultrabay Plus CD-RW/DVD-ROM combo drive
- 6.2-hr Li-Ion battery • 6.3-lb travel weight
- 1-yr system/battery limited warranty⁷

\$1,849

NavCode 2897GWU-M175

ServicePac® Service Upgrade:
3-yr Onsite Repair/9x5/Next Business
Day Response

#30L9195 *243

IBM ThinkPad X31

Distinctive IBM Innovations:

- Access Connections software simplifies management of multiple connectivity environments

System Features:

- Intel® Centrino™ mobile technology
- Intel® Pentium® M processor 1.3GHz supports Enhanced Intel SpeedStep¹¹ technology¹²
- Intel® PRO/Wireless Network Connection 802.11b¹⁴
- Microsoft® Windows® XP Professional
- 12.1" XGA TFT Display (1024x768)
- 16MB ATI® Mobility Radeon™ graphics
- 256MB DDR SDRAM • 20GB hard drive
- 5.5-hr Li-Ion battery • 3.6-lb travel weight
- 1-yr system/battery limited warranty⁷

\$1,499

NavCode 2884BRU-M175

ServicePac® Service Upgrade:
3-yr Onsite Repair/9x5/Next Business
Day Response

#30L9195 *243

IBM ThinkPad X31

Distinctive IBM Innovations:

- IBM Embedded Security Subsystem 2.0

System Features:

- Intel® Centrino™ mobile technology
- Intel® Pentium® M processor 1.4GHz supports Enhanced Intel SpeedStep¹¹ technology¹²
- Intel® PRO/Wireless Network Connection 802.11b¹⁴
- Microsoft® Windows® XP Professional
- 12.1" XGA TFT Display (1024x768)
- 16MB ATI® Mobility Radeon™ graphics
- 256MB DDR SDRAM
- 40GB hard drive
- 5.5-hr Li-Ion battery • 3.6-lb travel weight
- 1-yr system/battery limited warranty⁷

\$1,699

NavCode 2884CRU-M175

ServicePac® Service Upgrade:
4-yr Onsite Repair/9x5/Next Business
Day Response

#69P9194 *399



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IBM ThinkPad T40

Distinctive IBM Innovations:

- Access IBM – Simplifies access to online¹ and on-system information

System Features:

- Intel® Centrino™ mobile technology
 - Intel® Pentium® M processor 1.3GHz supports Enhanced Intel SpeedStep® technology¹¹
 - Intel® PRO/Wireless Network Connection 802.11b¹²
- Microsoft® Windows® XP Professional
- 14.1" XGA TFT Display (1024x768)
- 256MB DDR SDRAM • 30GB hard drive
- Ultrabay Slim DVD-ROM
- 5.5-hr Li-Ion battery • 4.5-lb travel weight
- 1-yr system/battery limited warranty⁴

\$1,549

NavCode 2378D2U-M175

ServicePac® Service Upgrade:

3-yr Depot Repair

#31L9192 *132

IBM ThinkPad T40

Distinctive IBM Innovations:

- IBM Rapid Restore PC software – One-button data-recovery and restore solution

System Features:

- Intel® Centrino™ mobile technology
 - Intel® Pentium® M processor 1.3GHz supports Enhanced Intel SpeedStep® technology¹¹
 - Intel® PRO/Wireless Network Connection 802.11b¹²
- Microsoft® Windows® XP Professional
- 14.1" XGA TFT Display (1024x768)
- 256MB DDR SDRAM • 30GB hard drive
- Ultrabay Slim CD-RW/DVD-ROM combo drive
- 5.0-hr battery life • 4.5-lb travel weight
- 3-yr system/1-yr battery limited warranty⁴

\$1,799

NavCode 2379D3U-M175

ServicePac® Service Upgrade:

4-yr Onsite Repair/9x5/Next Business

Day Response

#69P9198 *299

IBM ThinkPad T40

Distinctive IBM Innovations:

- IBM Rapid Restore PC software – One-button data-recovery and restore solution

System Features:

- Intel® Centrino™ mobile technology
 - Intel® Pentium® M processor 1.4GHz supports Enhanced Intel SpeedStep® technology¹¹
 - Intel® PRO/Wireless Network Connection 802.11b¹²
- Microsoft® Windows® XP Professional
- 14.1" SXGA+ TFT Display (1400x1050)
- 256MB DDR SDRAM • 40GB hard drive
- Ultrabay Slim CD-RW/DVD-ROM combo drive
- 5.0-hr battery life • 4.5-lb travel weight
- 3-yr system/1-yr battery limited warranty⁴

\$1,949

NavCode 2379D6U-M175

ServicePac® Service Upgrade:

5-yr Depot Repair

#69P9201 *220

IBM ThinkPad T40

Distinctive IBM Innovations:

- IBM Embedded Security Subsystem 2.0

System Features:

- Intel® Centrino™ mobile technology
 - Intel® Pentium® M processor 1.6GHz supports Enhanced Intel SpeedStep® technology¹¹
 - Intel® PRO/Wireless Network Connection 802.11b¹²
- Microsoft® Windows® XP Professional
- 14.1" XGA TFT Display (1024x768)
- 256MB DDR SDRAM • 40GB hard drive
- Ultrabay Slim CD-RW/DVD-ROM combo drive
- 5.0-hr battery life • 4.5-lb travel weight
- 3-yr system/1-yr battery limited warranty⁴

\$1,999

NavCode 2379D4U-M175

ServicePac® Service Upgrade:

5-yr Onsite Repair/9x5/Next Business

Day Response

#69P9200 *449

IBM ThinkPad T40

Distinctive IBM Innovations:

- Access Connections software simplifies management of multiple connectivity environments

System Features:

- Intel® Pentium® M processor 1.6GHz supports Enhanced Intel SpeedStep® technology¹¹
- Microsoft® Windows® XP Professional
- Integrated dual-band 11a/b¹³ Wi-Fi wireless technology
- 14.1" SXGA+ TFT Display (1400x1050)
- 512MB DDR SDRAM • 80GB hard drive
- Ultrabay Slim CD-RW/DVD-ROM combo drive
- 7.2-hr battery life • 4.5-lb travel weight
- 3-yr system/1-yr battery limited warranty⁴

\$2,799

NavCode 2379D5U-M175

ServicePac® Service Upgrade:

4-yr Onsite Repair/9x5/Next Business

Day Response

#69P9198 *299

IBM ThinkPad T40p

Distinctive IBM Innovations:

- Access IBM – Simplifies access to online¹ and on-system information

System Features:

- Intel® Centrino™ mobile technology
 - Intel® Pentium® M processor 1.6GHz supports Enhanced Intel SpeedStep® technology¹¹
 - Intel® PRO/Wireless Network Connection 802.11b¹²
- Microsoft® Windows® XP Professional
- 14.1" SXGA+ TFT Display (1400x1050)
- 512MB DDR SDRAM
- 60GB hard drive (7200 RPM)
- Ultrabay Slim CD-RW/DVD-ROM combo drive
- 7-hr battery life • 4.9-lb travel weight
- 3-yr system/1-yr battery limited warranty⁴

\$3,529

NavCode 2373G5U-M175

ServicePac® Service Upgrade:

5-yr Onsite Repair/9x5/Next Business

Day Response

#69P9200 *449

Introducing

IBM Think Express Program.

Select, budget and purchase the right IBM PC for even less with our new Express model offerings.

IBM Service Upgrades

Protect your notebook with IBM ThinkPad Protection service. It covers accidental damages like drops, spills or damage to your ThinkPad LCD display. (Not available in all states; ask your sales representative for details.)¹

1-yr Depot to 3-yr Onsite + 3-yr ThinkPad Protection	#58P8772	*389
3-yr Depot to 3-yr Onsite + 3-yr ThinkPad Protection	#58P8774	*299

IBM ThinkPad Accessories

Tripp Lite Traveler portable surge suppressor	#22P7141	*12
Tripp Lite Ultra-Mini 4-port USB Hub	#22P8200	*40
Gemplus GemPC400 Compact Smart Card Reader Writer from IBM	#31P8901	*75
ThinkPad Leather Carrying Case ¹⁴	#10K0209	*99
Lexmark X6150 All-in-One	#22P9146	*200
IBM iLM300 MicroPortable Data/Video Projector	#0037A03	*2,599

Upgrade your system with Microsoft® Office XP Small Business to Microsoft® Office XP Professional with Publisher.

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Save on shipping. Order online.¹⁴

guarantees. A service technician is scheduled to arrive at your location within two or four business hours or the next business day (depending on service) after remote problem determination is completed. For the 9x5x4-hour service, calls dispatched after 1:00 p.m. local time, you can expect the service technician to arrive by the morning of the next business day. For noncritical service requests, a service technician will arrive by the end of the following business day. If the machine problem turns out to be a Customer Replaceable Unit (CRU), IBM will express ship the part to you for quick replacement. Onsite 24x7-hour service is not available in all locations. External peripherals, such as modems, tape drives and channel controllers, require their own, separate service coverage; they are not covered under the attached Machine. Service activation is required immediately following purchase. For ThinkPad notebooks requiring LCD or other component replacement, IBM may choose to perform service at the depot repair center. For failing non-IBM components, customer must provide replacement part unless IBM has a Technical Support Agreement with the manufacturer. Service does not cover accessories, supply items and certain parts such as batteries, frames and covers. ¹Based on IEEE 802.11b. This wireless LAN product has been designed to permit legal operation worldwide in regions in which it is approved. Operation on channels 12-14 is not permitted in all regulatory regions of the world. Consequently, the wireless LAN feature is limited to operate on channels 1-11 and will not support channels 12, 13 and 14. This product has been tested and certified to be interoperable by the Wireless Ethernet Compatibility Alliance and is authorized to carry the Wi-Fi logo. ²With Intel SpeedStep, processor speed may be reduced to conserve battery power. ³Requires download of client software. ⁴Based on IEEE 802.11a and 802.11b. This wireless LAN product has been designed to permit legal operation worldwide in regions in which it is approved. This product has been tested and certified to be interoperable by the Wireless Ethernet Compatibility Alliance and is authorized to carry the Wi-Fi logo. ⁵Standard shipping included when you order online. U.S. only. ⁶ThinkPad Protection is not available in all states; contact your sales representative for details. ThinkPad Protection cannot be combined with other warranty service upgrades. ThinkPad Protection #01N1575 is for purchase with 3-year warranty systems; #01N1577 is for purchase with 1-year warranty systems. ⁷IBM does not manufacture, warrant or support this product; IBM logos and trademarks used under license. Contact IBM for details. IBM reserves the right to alter product offerings and specifications at any time, without notice. IBM is not responsible for photographic or typographic errors. All IBM product names are registered trademarks or trademarks of International Business Machines Corporation in the U.S. and other countries. Lotus and SmartSuite are registered trademarks of Lotus Development Corporation, an IBM company. Intel, Intel Inside, the Intel Inside logo, Celeron, Intel Centrino, the Intel Centrino logo and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the U.S. and other countries. Microsoft and Windows are trademarks or registered trademarks of Microsoft Corporation. Other company, product and service names may be trademarks or service marks of others. © 2003 IBM Corp. All rights reserved.

BY CHRISTOPHER NULL
ILLUSTRATIONS BY TOMER HANUKA

The Best SOFTWARE You're Not Using

42

ways to get out of the (Microsoft) Office and make the most of your PC, from underappreciated system enhancers and business tools to graphics and audio editors.



Around the Office

ELECTRONIC STICKIES

IS YOUR MONITOR covered with little sticky notes? Forget the paper: Use virtual Post-its instead. **Post-it Software Notes Lite** by 3M works just like the real thing—and it's free. Click the program's small window to create an off-the-cuff reminder, then stick it to your desktop. Change the font and color of notes, print or e-mail notes, and trash them when you're done. Undeleted notes reappear after you reboot your PC. Set a Post-it alarm to go off at a specific time, and when it does, a tiny window displaying an alarm clock pops up and makes a ringing sound. The \$20 Standard and \$25 Office editions offer more-advanced features, such as the abil-

ity to send Post-its over a network, but the freebie should be fine for most users. find.pcworld.com/37148, free; ★★★★★

STAY ORGANIZED

WHY GO THROUGH the hassle of installing Microsoft Outlook and keeping up with its peccadilloes when a simpler information manager will do? Golden Section Labs' **WinOrganizer** lets you store names and addresses along with anything else you want to keep handy, including wish lists, photos, to-do's, and even passwords (which you can protect with a master password). Navigating the intuitive tree structure is a snap. find.pcworld.com/37142, \$40 (free trial); ★★★★★

JUGGLE E-MAIL ACCOUNTS

STAYING ON TOP OF several e-mail addresses can be a drag. By the time you hop from Outlook to Yahoo to Hotmail and back again, chances are you've got new messages in at least one account. **EPrompter** by Tiburon Technology cuts through the hassle of managing multiple

in-boxes with a free client that can check up to 16 accounts simultaneously. E-mail messages are downloaded as plain text and assembled in one location, but you still maintain separate in-boxes and out-boxes for each account. The downside: EPrompter is bare-bones—you can't view embedded images or attachments. www.eprompter.com, free; ★★★★★

CERTIFIED E-MAIL

SOMETIMES YOU NEED to know whether a particular e-mail message was read at its destination. Most e-mail clients allow you to attach a delivery or read receipt to your e-mail. At the other end, your recipients can confirm the e-mail's arrival, often by clicking a pop-up message; some recipients, however, might get ticked off and just ignore your receipt request. **MSGTAG Status** by Fisher Young Group won't let your recipients disregard your requests. This application rides alongside your regular client and watches for SMTP traffic. (It doesn't work when you send e-mail from Web-based accounts.) MSGTAG ►

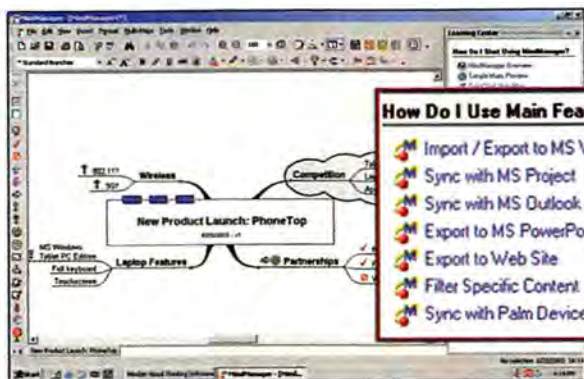
Status circumvents the normal receipt system in that it sends back receipts without the recipients' knowing it. Sure, the program is sneaky, so its modus operandi may not be everyone's cup of tea. You can also keep a running log of e-mail deliveries via the status dashboard. www.msntag.com, \$60; ★★★★★

STAMP OUT WORDINESS

WordDog, a Microsoft Word plug-in by Plain English Technologies, is designed to take out the linguistic detritus all too common in today's business and academic writing. For example, WordDog suggests *many* in lieu of *large number of*, and proposes chopping out all instances of *really*, *certainly*, and *quite*. You might still need to use Word's grammar and spelling checkers to catch all your mistakes, but WordDog helps by sniffing out the needless verbiage that would have made even James Joyce blush. www.worddog.com, \$25; ★★★★★

LESS TAXING E-FAXING

DO YOU SEND FAXES frequently? If you do, like most people you probably resort to printing out a hard copy and carrying it to the fax machine. Who can blame you? Microsoft's built-in fax utility is a shambles, and Symantec's \$100 WinFax tends to hog memory. Enter RKS Software's **MightyFax 3.0**, a low-cost alternative that



MINDMANAGER 2002 Business Edition gives you lots of export and syncing options after you've documented your meeting ideas.

breezes you through sending and receiving a variety of file types in fax format (you need a standard fax modem and a phone line). The app lacks integration with Outlook's address book, one of WinFax's best features, but MightyFax covers the basics just fine. find.pcworld.com/37088, \$20 (free trial); ★★★★★

BIG BRAINSTORM

IF YOU'RE THE TYPE of person who thinks best in front of a whiteboard—but your handwriting looks like chicken scratchings—Mindjet's **MindManager 2002 Business Edition** is the way to go. The \$189 program gives structure to your brainstorming sessions by building nice-looking, easily tweakable decision trees and idea webs. When you're done planning a new project or generating meeting

notes, you can export the document to most Microsoft Office

programs (Word, Outlook, PowerPoint, and Project) or as an HTML file. MindManager is also available in other flavors; the \$99 Standard Edition offers the HTML export option only. Handheld users

might want to take advantage of the \$49 Mobile Edition, which permits you to edit your creations on Palm OS and Pocket PC-based devices. www.mindjet.com, \$189 (free trial); ★★★★★

FIND ALL IN EXCEL

THIS ONE'S A NO-BRAINER. Say you need to find the word *depreciation* in your last three years' worth of monthly financial reports. Using Excel's *Find* function, you'd be skipping lunch while you click the *Find Next* button for the rest of the day. **Advanced Excel Find** by Afalina plugs into Excel and lets you run a find command once, returning a listing of every result and its location on all open workbooks. Click a result, and you're instantly taken to that cell. Advanced Excel Find does have one drawback, and it's a doozy: no Replace feature. So if you must change all those *depreciations* to *amortizations*, you'd better bring a snack. find.pcworld.com/37091, \$20 (free trial); ★★★★★

DROWNING BY NUMBERS

FINANCIAL NOVICES AND wizards alike might often feel stymied by the limitation of Excel's calculation engine and built-in formulas, which can sometimes feel too simplistic to tote up much more than your bar tab. **Business Functions Pro** by Business Functions is an Excel plug-in that adds 380 financial formulas and a new menu to the program, turning your spreadsheet into a far more advanced business tool. Whether you're projecting the outlay of irregular debt payments or simply figuring out a monthly rate's APR, Business Functions has a formula for you. At \$239, this plug-in is pricey, but

EDITOR'S PICK

Word Processing—Real Simple



Yeah, Write, how do I love thee? Let me count the ways. I love you because you are a word processor that's easy to use and full of great features. I love your colorful interface (no white spaces when you start a new document). I love your file-drawer organization that lets me customize each folder with a different printer configuration—say, for letters, labels, and documents. I love the fact that your \$29 price includes a spelling checker and thesaurus, and that I can import Word files when they are saved in RTF format. And I love how your maker, Word Place, still offers a free version that works well even without the extra frills. www.yeahwrite.com, \$29 (free version); ★★★★★

—Michael S. Lasky

you can also get a watered-down version for \$119 (and a light version for free). find.pcworld.com/37085, \$239; ★★☆☆☆

PRESENTATION PIZZAZZ

MICROSOFT'S FREE ADD-ON, **Producer for PowerPoint**, gives your presentations a multimedia makeover. Start with some static images and slides in PowerPoint, timed to run as long as you'd like, and Producer 2002 lets you enhance them with a narrative track of audio and/or video. The result is a unique side-by-side demonstration: a talking head or other video on one side and a standard presentation on the other. You can lay out this synchronization in dozens of ways, and you can capture audio or video on the fly, recording your own commentary without having to use another utility. Note that you must have PowerPoint 2002 or the forthcoming PowerPoint 2003. (At press time, Producer 2003 was in beta.) find.pcworld.com/37151, free; ★★☆☆☆

AN OFFICE ALTERNATIVE

ONCE YOU GET familiar with **OpenOffice.org's** slightly geeky interface, this free office suite can be a reasonable alternative to the old standbys of Word, Excel, and PowerPoint. The similarities are often uncanny, from spreadsheet currency formatting to autocorrecting typos; plus, you can build PowerPoint-like presentations just as you would with the real deal. You shouldn't run into compatibility problems with Microsoft Office apps: Opening Word and even complicated Excel files

works fine—tables and formulas come through intact. Overall, you'll face a fairly steep learning curve to master OpenOffice's eccentricities, but you can't beat the price. www.openoffice.org, free; ★★☆☆☆

CUT CHECKS, NOT PROFITS

IF YOUR BOOKKEEPING needs are simple, try **PayWindow 2003** by Zpay Payroll Systems. The program lets you easily zip

through payroll chores, and it provides just enough configurability for you to handle common cases such as overtime and 401(k) deductions. Federal, state, and even city tax withholding (in New York, for example) are taken care of via updatable tax tables. PayWindow is employee-friendly, too—its printed checks provide lots of historical detail. find.pcworld.com/37094, \$70 (free trial); ★★☆☆☆



DELETE DATA FOR GOOD

BEFORE YOU DONATE your old computer to charity or put it up on eBay, you should be absolutely sure that no personal or confidential data remains on the hard drive. Merely dragging your tax

spreadsheet over to the Recycle Bin won't do the trick. After you've deleted all your files, you've got to wipe the free space on the drive and then rewipe it to the point where nothing is recoverable. Jetic's **BCWipe 3** is one of the most effective data-mangling tools available. You can wipe your free space on demand

BANISH START-UP JUNK

TIRED OF ALL THOSE programs that pop up uninvited during start-up? Here's one way to deal with the slew of system tray items and other memory-resident applications you don't want: **Startup Organizer** by MetaProducts makes mincemeat out of such junk by letting you select the programs you want to load at start-up. Startup Organizer also scans your Registry for potential Trojan horses and other nasty stuff. (Turn to "50 Fixes for the Biggest PC Annoyances" on page 88 for tips on how to prevent programs from smothering your desktop.) find.pcworld.com/37178, \$25 (free trial); ★★★★★

INVISIBLE FILES

YOU CAN PASSWORD-PROTECT and even encrypt data, but once a hacker knows a certain desired document is there, he or she will often stop at nothing to bust it open. If you have a reason to be paranoid, **Invisible Secrets 4** by NeoByte Solutions is your gateway to the world of stega- ▶



YOU CALL THE SHOTS: Use Startup Organizer to specify which applications you want to launch automatically at start-up.

nography—technology that lets you hide and encrypt smaller files inside larger ones. The result: Except for you, no one knows your secret file exists—and it's protected by a password to boot. Invisible Secrets also includes other security features, such as a hard-drive shredder and a tool to let you password-protect any program on your PC. find.pcworld.com/37169, \$40 (free trial); ★★★★★

VIEW MULTIPLE WEB SITES

IT'S A ONE-TRICK PONY, but for heavy-duty surfers who open the same dozen pages multiple times daily, Grouppk's **1Tabview** can be a great time-saver. As a

Network Essentials

EVERY BUSINESS NEEDS a complement of utilities to help with network-related chores. And depending on your setup, the same goes for your home office. Here are our top picks.

- **DU Meter** Keep tabs on the speed of your broadband or dial-up connection. This Hagel Technologies app also lets you tweak your connection's settings. find.pcworld.com/37202, \$20; ★★★★★
- **JanaServer** On a tight budget? Share your office Internet connection and set up an ultracheap e-mail server with author Thomas Hauck's program. find.pcworld.com/37064, \$57; ★★★★★
- **NetInfo** Scan your network, diagnose problems, and start troubleshooting. Tsarfin Computing's app lets you test your network's security as well. find.pcworld.com/37199, \$25; ★★★★★
- **NetZoom for PowerPoint** If you need to document, say, your network equipment, turn to NetZoom's exhaustive library of incredibly accurate clip art. find.pcworld.com/37067, \$299; ★★★★★
- **VisualRoute** Having Internet connectivity problems? Find the bottlenecks and identify the geographical locations involved with Visualware's program. find.pcworld.com/37070, \$50; ★★★★★

EDITOR'S PICK

A Friendly and Flexible Database



Having my own databases is like being able to Google my own life. What projects are due to the copy desk next week? In our survey results, how many Sony camera owners said they had called technical support? All I need are two quick queries to my **FileMaker Pro 6** databases, and I've got the answers. FileMaker makes creating a database intuitive, and once I've entered my data, I can slice and dice the information—and decide how to present it—in lots of useful ways. www.filemaker.com, \$300; ★★★★★ —Edward N. Albro

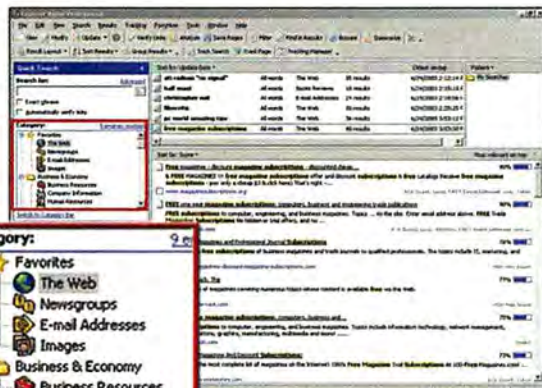
plug-in for Internet Explorer, **1Tabview** lets you define sets of Web pages that, with one click, will all open at once within the 1Tabview window. You move around the pages via tabs at the bottom of the window. This makes checking news a breeze instead of the chore that hunting through IE's Favorites can be. 1tabview.com, \$10 (free trial); ★★★★★

SUPER SEARCHES

WHY USE A stand-alone search program instead of Google, the reliable? Because **Copernic Agent Professional 6.1** lets you automate frequent searches, save and archive results, and summarize pages to get the bare essentials. Copernic sends simultaneous requests to dozens of search sites—not including Google—and compiles the results in a sort of meta-ranking. (The company says that it had to temporarily disable its Google searches because of technical issues.) Copernic also lets you run specialized searches for e-mail addresses, book reviews, audio and video files, and more. Copernic's biggest drawback is its price: \$80 for a search engine that doesn't even hit Google as part of its repertoire. But its advanced features make this application worth the cost for search fanatics. www.copernic.com, \$80 (free light version); ★★★★★

ELECTRONIC SNAPSHOTS

WHILE THE Print Screen button on your keyboard may not get much mileage, **HyperSnap-DX 5** by Hyperionics greatly enhances this feature. HyperSnap-DX runs in the background; when you see something on screen you want to grab,



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click the **Capture** button and the program takes a snapshot of any Windows program, including screens from DirectX. It can also grab more than what you see on screen, such as long Web pages. Once you've pulled the image into HyperSnap-DX, you have some basic image editing tools at your disposal. www.hyperionics.com, \$35 (free trial); ★★★★★

FIND, REPLACE, REPLACE

IMAGINE THE HEADACHES for company staff when WorldCom changed its name back to MCI and needed to redo

SUDDENLY, YOUR BIG, FAT, BEIGE MONITOR SEEMS SO EXPENSIVE.



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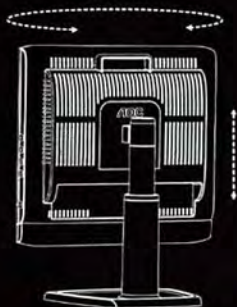
The astonishing and affordable new line of AOC flat-screen displays are here. And when you're done admiring its revolutionary design and razor sharp LCD screen, be sure to check out some other impressive features. The LM729 boasts a 17" screen, 1280x1024 resolution, 2W+2W speakers, front/back tilt, 90° screen rotation for landscape or portrait mode, 70° swivel, and height adjustment. The LM929 has all that with a 19" screen and awesome 3W+3W speakers. Put one on your desk today, it's all the office improvement you'll ever need.



90° screen rotation for landscape/portrait mode



3W+3W speakers, front/back tilt



110mm height adjustment, 70° swivel

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Aus Deluxe Motherboard for AMD Athlon XP/Duron Processors nForce2 Ultra SPP 400MHz FSB 2x ATA133 IDE 8x AGP Pro 5x PCI Model# A7N8X Deluxe - Retail

\$119.99 PCW1313136

AMD

AMD Athlon XP 2500+ Barton Core 333MHz FSB 1.83GHz CPU 512K Cache Socket A w/ Heatsink & Fan Processor Model# AXDA2500BOX - Retail

\$88.00 PCW19103379

KINGSTON

Kingston 512MB 32x64 PC2700 DDR RAM 184 Pin Unbuffered 6 Layers High Quality Board/CL 2.5 Model# KVR333X64C25/512 - Retail

\$84.00 PCW2014202

ATI

ATI Radeon 9500 Pro Visual Processing Unit 128MB DDR DVI AGP 8x 540MHz 128 Bit DDR VGA + DVI + S-Video Ports - Retail

\$205.00 PCW14102256

Maxtor

Maxtor 30GB 7200RPM Diamond Max Plus IDE Ultra ATA 133 2MB Cache Hard Drive Model# 6E030L0 - OEM

\$52.00 PCW22140132

EPOX

EpoX Motherboard for AMD Athlon XP/Duron Processors nForce2 333MHz Max FSB PC3200 DDR SDRAM E/IDE Model# EP-8RDA+ - Retail

\$79.00 PCW13123191

AMD

AMD Athlon XP 1700+ Thoroughbred 266MHz FSB 1.47GHz CPU 256K Cache Socket A PGA Model# AXDA1700 - OEM

\$47.00 PCW19103351

GEIL

Geil 512MB PC-3200 DDR RAM Value 400MHz Ultra CAS 2.5 2T Command 6 Layer PCB Aluminum Heat Spreader Model# GL512PC3200B - OEM

\$91.00 PCW20144305

GIGABYTE

Gigabyte ATI Radeon 9200 128MB DDR RAM AGP 8x/4x VGA + DVI + S-Video Out Model# GV-R92128DH - Retail

\$74.00 PCW14125113

Seagate

Seagate 40GB 7200RPM EIDE Barracuda 7200.7 IDE Ultra ATA 100 Hard Drive Model# ST340014A - OEM

\$62.00 PCW22148013

ABIT

Abit IS7 Motherboard for Intel 865PE Chipset for Socket 478 Processors P4 ATX 800/533MHz FSB 4x Dual DDR 333MHz 2x ATA 100 IDE - Retail

\$108.00 PCW13127155

Intel

Intel Pentium 4 2.4GHz 512K Socket 478 Hyper Threading Technology 800MHz FSB Northwood Processor w/ Heatsink & Fan Model# BX80532P2400D - Retail

\$169.00 PCW19116157

Corair

Corair XMS Extreme Memory Speed Series 512MB 64Mx4 PC3200 C2PT DDR 400MHz w/ Platinum Silver Heat Spreader Model# CMX512-3200C2PT - OEM

\$128.50 PCW20145420

VGA

VGA Chaintech A-GX20 TI-4200 128MB DDR 8x VGA DVI + TV Out 512MHz 8.1GB/Sec Dual Programmable Vertex Shaders - Retail

\$118.00 PCW14145031

SAMSUNG

Samsung 80GB 7200RPM IDE Ultra ATA 133 2MB Buffer Hard Drive Model# SP0802N - OEM

\$77.00 PCW22152010

MSI

MSI Motherboard Intel Pentium 4 Socket 478 Up to 3.6GHz FSB 800/533MHz FSB 4x DDR 400MHz Serial ATA 150 Model# 865PE Neo2 - LS - Retail

\$108.00 PCW13130416

Intel

Intel Pentium 4 3.0GHz 512K Socket 478 Hyper Threading Technology 800MHz FSB Northwood Processor w/ Heatsink & Fan Model# BX80532P300D - Retail

\$393.00 PCW19116156

Corair

Corair Micron 256MB 32x64 PC2100 DDR RAM 184 Pin CAS Latency 2.5 Unbuffered 2.5V 6 Layers Model# CT32642265 - OEM

\$46.00 PCW20145001

EVGA

EVGA GeForce FX5200 Ultra 128MB DDR TV/DVI AGP 8x/4x 10GB/Sec Bandwidth VGA + DVI + S-Video Out (Includes Adapter & Cable) Model# 128-A8-N308-T4 - Retail

\$131.00 PCW14130149

Western Digital

Western Digital 120GB "Special Edition" 7200RPM IDE Ultra ATA 133 8MB Cache Hard Drive Model# WD1200JB - OEM

\$106.00 PCW22141118

CREATIVE

Creative Labs Sound Blaster Audigy 2 PCI 24 Bit 192kHz DVD Audio 106dB SNR 6.1 Surround Sound Model# 70SB024400000 - OEM

\$78.00 PCW29102158

CREATIVE

Creative Labs Sound Blaster Audigy 2 Platinum 6.1 Surround Sound w/ Dolby Digital EX Decoder Model# SB0240P - Retail

\$167.00 PCW29102155

Turtle Beach

Turtle Beach Voyetra Santa Cruz PCI Sound Card Dual Digital Outputs CD Digital Input Part# TBS-3400-01 - OEM

\$44.99 PCW29118101

LITEON

Lite On 52x32x52 CDRW Black ATAPI/EIDE 80ms Access Time 2MB Memory Buffer Model# LTR-52327S - OEM

\$41.99 PCW27106197

LITEON

Lite On 48x24x48x16 2MB Buffer CDRW/CDRW/DVD Combo Drive Model# LTC48161H - Retail

\$57.99 PCW27106192

Logitech

Logitech Z340 3 Piece Speaker 33 Watts RMS Satellites Stand Headphone Jack & Volume Control - Retail

\$45.00 PCW36121102

CREATIVE

Creative Labs Inspire 6600 6.1 Speaker 6 Satellites & 1 Subwoofer 8 Watts RMS Model# F51000000-AA265 - Retail

\$86.00 PCW36116117

Klipsch

Klipsch ProMedia 2.1 THX Certified 200 Watt 3 Piece Personal Audio System 0.75" Micro Tractrix™ Tweeters & 3" Midbass Drivers - Retail

\$168.00 PCW36119101

SONY

Sony DVD+RW Recorder Drive 4x DVD+R White 4x DVD+RW White 12x DVD-ROM Read Buffer Underarm Protection Model# DRU510A - Retail

\$254.99 PCW27131211

NEC

NEC DVD +/RW Recorder Drive 4x DVD+R White 16x CLV DR-R CDRW 12x DVD-ROM Read ATAPI EIDE 2MB Buffer Model# ND-1300A/GEN w/SW - OEM

\$165.99 PCW27152008

ALLIED

Allied ATX400P4 400 Watt Power Supply w/ 8 Large & 2 Small Leads 2 Ball Bearing Fans Ideal for P3, P4 & AMD Systems - Retail

\$37.00 PCW17154013

SPI

Sparkle Power 300 Watt Switching Power Supply for P4 Processors w/ Internal 12 VDC Fan High Efficiency Ripple Short Circuit Protection Model# FSP300-60ATV - OEM

\$33.00 PCW17103915

Shuttle

Shuttle XPC SS51G Pentium 4 Celeron SiS615 DDRAM 400MHz FSB Socket 478 Barebone PC Flex ATX - Retail

\$174.99 PCW56101208

LINKSYS

Linksys Instant Broadband EtherFast Cable/DSL Router w/ Built-in 4 Port 10/100 Switch Full Duplex Backbone Model# BEFSR41 - Retail

\$52.50 PCW33124001

Gigaset

Gigaset HomePlug Ethernet Bridge 14Mbps Bandwidth IEEE802.3 300m Range Powerlines Model# PE-902-EBX - Retail

\$60.00 PCW33129214

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FOXCONN Foxconn Micro ATX Super Case w/ 350 Watt Power Supply 2 Front USB 2.0 Steel Material 7 Full Size Bays Model# PC-132 - Retail \$40.00 PCW11154018	KDS KDS Radius RAD-5 15" LCD Flat Panel Monitor 1024x768 DB15 VGA 16.7 Million Colors Ultra-Thin Display Wall-Mountable Model# RAD-5 - Retail \$249.00 PCW24155004	Symantec Symantec Norton SystemWorks Professional 2003 Model# 10025223 - OEM \$23.00 PCW32108117	Nikon Nikon Coolpix 3100 3x Optical 4x Digital Zoom 2048x1536 Max Resolution 1/2.7" CCD 1.5" TFT LCD CF Card Type I (16MB Included) CR-V3 Lithium Battery Included Dim. 3.5"x2.6"x1.5" Wt. 7.6 oz - Retail PCW30113110	Nikon Nikon Coolpix 5700 8x Optical 4x Digital Zoom 2560x1920 Max Resolution 2/3" CCD 1.5" TFT LCD CF Card Type I (32MB Included) Lithium-Ion Battery & Charger Included Dim. 4.3"x3"x4" Wt. 18.1 oz - Retail PCW30113102
Antec Antec Life Style Series Sonata Piano Black w/ Antec True360 360 Watt Power Supply Dual Front USB Front IEEE 1394 Front Audio Jacks 9 Drive Bays ATX12V Model# Sonata - Retail \$119.00 PCW11129127	AOC AOC 17" CRT Monitor 1280x1024 / 60Hz 0.27mm Dot Pitch 15 Pin Mini D-Sub Model# 7E-BLK - Retail \$119.00 PCW24160114	Microsoft Microsoft Rise of Nations PC Game - Retail \$40.00 PCW32102228	OLYMPUS Olympus D-380 3x Optical 4x Digital Zoom 1600x1200 Max Resolution 1/3.2" CCD 1.8" TFT LCD xD Picture Card™ (16MB Included) 2 AA Alkaline Batteries Included Dim. 4.2"x2.3"x1.6" Wt. 5.8 oz - Retail PCW30111116	OLYMPUS Olympus C-4000 Zoom 3x Optical 2x Digital Zoom 2288x1712 Max Resolution 1/1.8" CCD 1.8" LCD SmartMedia™ Card (16MB Included) 2 LB-10 (CR-V3 Type) Batteries Included Dim. 4.3"x3.0"x2.8" Wt. 10.5 oz - Retail PCW30111105
X Thermaltake Xaser III V14200 chassis Blue 12 Bay ATX Super Tower Aluminum Front Panel & 1.0mm SECC Japan Steel Body Large Side Window w/ 7 Fans & Lock 420 Watt Power Supply - Retail \$186.99 PCW11133109	SAMSUNG Samsung 19" SyncMaster 955DF-TT CRT Monitor 1600x1200 / 60Hz 15 Pin D-Sub 0.20mm Pitch Analog DB-15 Interface - Retail \$199.00 PCW24001119	BLIZZARD Blizzard WarCraft III Reign of Chaos PC Game - Retail \$27.00 PCW32127103	SONY Sony Mavica MVC-CD500 3x Optical 4x Smart Zoom 2592x1944 Max Resolution 1/1.8" CCD 2.5" TFT LCD 8cm CD-R/CDRW InfoLithium Battery & Charger Included Dim. 5.5"x3.8"x4.1" Wt. 21.4 oz - Retail PCW30150027	SONY Sony DSC-F717 5x Optical 2x Digital Zoom 2560x1920 Max Resolution 2/3" CCD 1.8" LCD Memory Stick Pro (32MB Included) InfoLithium Battery & Charger Included Dim. 6.4"x4.9"x2.7" Wt. 23.2 oz - Retail PCW30150011
Microsoft Microsoft Multimedia Keyboard & Wheel Mouse Optical Value Pack Unique IntelliEye Optical Sensor - OEM \$35.00 PCW23109118	Logitech Logitech Cordless MX Duo Elite Keyboard & Mouse Ultra-Flat Zero-Degree Tilt™ Ultra Comfortable Design w/ Media Center Model# 967300-0403 - Retail \$78.00 PCW23126124	Microsoft Microsoft SideWinder Precision 2 Joystick 8-Way Hat Switch Rotating Handle for Rudder Control 16 Programmable Functions - Retail \$41.00 PCW26102401	Fuji FujiFilm FinePix S602 Zoom 6x Optical 4x Digital Zoom 2832x2128 Max Resolution 1/1.7" CCD 1.8" TFT LCD SmartMedia™ Card (32MB Included) 4 AA Alkaline Batteries Included Dim. 4.8"x3.2"x3.8" Wt. 17.6 oz - Retail PCW30122001	Kodak Kodak Easy Share DX6340 4x Optical 3.5x Digital Zoom 2032x1524 Max Resolution 1.8" TFT LCD 16MB Internal SD/MMC External Memory Compatible w/ Kodak EasyShare Dock 2 AA Batteries Included Dim. 4.3"x2.5"x1.5" Wt. 9.9 oz - Retail PCW30170005
EPSON Epson Perfection 2400 Photo Scanner 2400x4800 dpi 35mm Transparency Adapter Built-In 6 Negatives & 4 Slides Capacity USB 2.0 / 1.1 Model# B11B152011 - Retail \$161.00 PCW38110107	Canon Canon i850 Bubble Jet Photo Printer 22ppm Black Print 12ppm Color Print 4800x1200 dpi 2 Picofiner Droplets 4"x6" Borderless Prints 4 Individual Ink Tanks - Retail \$154.00 PCW28102112	EPSON Epson Stylus Photo 2200 7 Color UltraChrome Inks Individual Ink Cartridges 2880x1440 dpi 4 UltraFine Picofiner Droplets Borderless Photos Roll Paper Holder w/ Auto Cutter - Retail \$611.00 PCW28103133	OLYMPUS Olympus 256MB xD-Picture Card™ Compact for Smaller & Stylized Digital Devices Powerful for Amazing Memory Capacity Model# XDPC256MB - Retail \$121.00 PCW20196103	DELTA Delkin eFilm 256MB Compact Flash Card Larger Capacity 100% Compatible Model# DDCFLS2 -256 - Retail \$56.00 PCW20160301
OPTODISC Optodisc DVD-R 4.7G for General Use Good Compatibility High Durability Quality Media Set of 30 DVD-R w/ Jewel Cases - Retail \$51.00 PCW17131706	Logitech Logitech QuickCam Pro 4000 640x480 Video Resolution w/ Advanced VGA CCD High Quality 1.3MP Photo Resolution - Retail \$86.00 PCW30108105	Palm Palm Zire 71 Handheld Organizer w/ Palm OS™ 5.2.1 Operating System 640x480 Resolution Support MultiMedia/SD/ SDIO Expansion Cards Rechargeable Lithium Polymer 900mAh Battery - Retail \$266.00 PCW58101116	DANE-ELEC Dane-Elec 128MB Smart Media Card 3.3 Volts High Capacity Removable & Reusable Use for a Variety Digital Products Life Time Warranty Model# DA-SM128-R - Retail \$42.00 PCW20163002	Lexar Lexar Media 256MB Memory Stick Non-Volatile Solid-State High Transfer Rate High Storage Capacity Compatible w/ All Digital Devices Model# MS256281 - Retail \$75.00 PCW20191404

thousands of Web pages, simply to have one word changed to another. DivlocSoft's **Actual Search & Replace** makes it easy to do bulk operations like this across multiple files. You can search documents for one word or several, and once you find the files you want, you can easily replace, insert, or delete text. The catch: The tool works only on HTML and text files. www.divlocsoft.com, \$30 (free trial); ★★★☆☆

MACRO CREATOR

SAY YOU WANT YOUR server to reboot nightly, when no one's around to push the button. Or you want to automatically zip a file when you give it a certain name. Unisyn Software's **AutoMate 5** makes manual chores a thing of the past. At \$499, the program is pricey, but it's a lifesaver when you have to update thousands of files with the same code. AutoMate requires some trial and error before you can get it to work perfectly, though. www.unisyn.com, \$499 (free trial); ★★★★★

IT'S FONTASTIC!

YOU MAY HAVE THE Mangal font installed on your PC, but you probably have no idea what it looks like. Microsoft Office can display a font (in Word, say, click *Format>Font*), but it's far from perfect. **Font Explorer** by Moon Software gives you a large, crisp, and easy-to-navigate listing of installed fonts. It helps you find duplicates and repair broken ones. find.pcworld.com/37175, \$20 (free version); ★★★★★

EDITOR'S PICK

Slide Shows in a Snap



ProShow Gold turns my collection of digital images into a fun slide show for my PC or TV. Photodex's program lets me create screen savers, slide shows ready for e-mailing, and video CDs or DVDs for playing back on TV. I can also make CDs containing self-executable files that will launch snazzy slide shows, for instance, on any PC—no special software is needed. Plus, I can easily synchronize background music to the number of slides

I have. And I love being able to choose from 170 slide transition effects—even the drabest set of images comes to life with ProShow Gold. What's missing? A tool to post slide shows on Web pages. photodex.com, \$60; ★★★★★

—Tom Spring



SPEEDY THUMBNAILS

THE THUMBNAILING system built in to Windows XP, 2000, and Me is so slow, you might chew your own thumbnails to stumps before Windows can finish displaying the preview images of a decent-size folder. **ThumbsPlus 6** by Cerious comes to the rescue for those who need a quick and easy program to manage hundreds or thousands of image files. It does more than just display thumbnails: You can make slide shows from your favorites and convert file formats in bulk; the batch conversion process is terrific. www.cerious.com, \$90 (free trial); ★★★★★

POOR MAN'S PHOTOSHOP

ARE YOU LOOKING for an affordable image editor? One of the best programs you'll find is **LView Pro 2002**, which features the bulk of options from its more expensive brethren at a fraction of the price. The \$37 program by MMedia Research includes an excellent tool that allows you to rotate and crop photos in a single operation. To make color or brightness adjustments, dig into the histogram tool. This latest version of LView Pro also allows you to do more with text and vector graphics. The interface and help system aren't the greatest, but the money you'll save by using LView Pro over Adobe's Photoshop Elements 2 (\$99) or even Photoshop 7 (\$609), for example, certainly outweighs the time you'll spend mastering the application. www.lview.com, \$37 (free trial); ★★★★★

MEGA-MUSIC MANAGER

TO BE HONEST, **Helium 2** feels more like a database platform than a music manager. Designed for users with thousands—or more to the point, even tens of thousands—of MP3s and other digital music files, Intermedia Design's Helium lets you organize your collection umpteen ways from Sunday (by combination of genre and year of release, for example). Bulk renaming, retagging, and sorting operations are easy, and the included Radon music player works flawlessly. Helium's circuitous interface is both quirky and tough to master, but it sure beats using Windows to rename all your music files. find.pcworld.com/37184, \$35 (free trial); ★★★★★

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* When used with optional adapters, sold separately.



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GOT A FAVORITE radio broadcast but can't sit by the PC? **Replay Radio** by Applian Technologies can record standard or Internet radio in MP3 format for you. If you don't have a particular broadcast in mind, Replay Radio has its own database of more than 100 shows and about 200 radio stations to choose from. To record, pick a station and set your recording time, or pick a show and let Replay Radio configure it automatically. Setting up daily or

weekly recordings is a cinch, and you can even burn your favorites to a CD. The freebie version records up to 5 minutes at a time. *find*. pcworld.com/37616, \$30 (free trial); ★★★★★

SOUND ADJUSTMENTS

DIGITAL BROADCAST Systems' **Diamond Cut 5** is strong enough for the audio professional, but the app is also great for anyone who likes to tinker with tunes. Every tweak you ever wanted to make to your garage band sessions or your favorite MP3 is possible with Diamond Cut, from erasing pops and crackles to removing (or adding) distortion. Record directly into the program at sample rates of up to 192 kHz, or import music from common file formats (including .wav and MP3). You can also preview your tweaks as you make them and undo in a flash anything that doesn't work. If the price seems steep, try one of the older, more affordable versions. *find*. pcworld.com/37190, €259, or approximately \$294 (free trial); ★★★★★

ICONS 'R' US

EVER WONDER HOW those cool little icons show up in your Internet Explorer Favorites menu? They're called *favicons*, and they're much easier to create than you might think, thanks to **IconForge** by CursorArts. With it you can craft icons for frequently used documents or programs, saved Web pages, cursors, your own custom applications, and more. IconForge lets you design from scratch or shrink down a larger graphic to the iconic essentials. It also lets you compose in various sizes and image depths. *find*. pcworld.com/37181, \$38 (free trial); ★★★★★

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COREL'S AFFORDABLE **Bryce 5** lets you create impressive 3D cinemascapes that might remind you of awe-inspiring scenery from a game like *Myst*. You get a



DABBLE IN 3D landscaping with Corel Bryce and create your own cinemascapes using straightforward tools.

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CAD ON THE CHEAP

MOST PEOPLE BELIEVE two facts about computer-aided design software: It's difficult to use and it's expensive. Autodesk's \$49 **QuickCAD 8** will disabuse you of both those preconceptions. QuickCAD provides the necessary tools to get you started on any kind of diagrams, from basic shapes made up of straight lines to advanced 2D drawings, but the program is primarily designed for people who want to trace out a room and drop furniture in it. Those users who are familiar with CAD lingo or are patient enough to sit through the tutorials can come up with more impressive works of art. QuickCAD also supports the sophisticated tools a real engineer might require. *find*. pcworld.com/37193, \$49; ★★★★★

Christopher Null is a San Francisco-based technology writer. Edward N. Albro is an executive editor, Michael S. Lasky a senior editor, and Tom Spring a senior reporter for PC World.

Specialty Programs

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GOOD-BYE, VHS Hello, DVD



Our guide shows you how to turn old videotapes into digital discs. Plus: our ratings of the latest pocketable DV cameras.

BY PAUL HELTZEL



PHOTOGRAPHS BY MARC SIMON

TECHNOLOGY FAVORS the new, the powerful, and the fast. So where does that leave that pile of old VHS videocassettes you have up in the attic? Fortunately, converting your old tapes to digital form allows you to edit them, add music or narration, and output them to DVD, preserving them for the future. You will have your movies in a more ►

compact and easily stored form than VHS—and you'll be able to watch them again and again without worrying that each replay might damage your tape. And digitizing your old videos is easy.

We looked at five video capture devices that make getting your old tapes onto your PC (and then onto a DVD) simple and quick. Using software and a capture device, each of these products, which range in price from \$90 to \$450, imports video from your analog camcorder and copies it to your hard drive and then onto a CD or DVD. We evaluated them on all the phases of transferring video from tape to DVD: installing the device, importing the video, selecting a format, editing the video, and saving it to DVD or other media. We also provide some advice on the best way to proceed with these steps.

The dedicated capture devices are great if you have a lot of tape to convert, but there is another option. Many current digital video cameras have analog-in ports that can be used to digitize your old analog videos: Just plug your old camcorder into your DV camera's video-in port, and you can transfer your videos to digital videotape and then onto your PC. We picked five of the latest and greatest models and reviewed them: See "Digital Camcorders Reviewed," starting on page 119.

Our hands-on tests of the dedicated capture products revealed one standout: The AVerMedia DVD EZMaker USB2.0 is the cheapest and simplest product, but it does the job of capturing video well and without fuss, so it's our Best Buy. It works only with fairly new, fast systems, though. The other product that caught our eye was the ATI All-In-Wonder 9800 Pro AGP video card, which combines video capture features with a slew of others, including the ability to turn your PC into a personal video recorder. It is expensive, but it's also a state-of-the-art 3D graphics card that can deliver high frame rates in 3D games.

FROM LEFT: ADS USB Instant DVD 2.0, Adaptec VideOh DVD, AVerMedia DVD EZMaker USB2.0.



One interesting product that wasn't available in time for testing in this roundup was the HP DVD Movie Writer, which combines an analog capture device and a rewritable DVD drive into one unit; see our review of a preproduction unit on page 80.

We used an MPC Millennia 910i desktop with a 3.06-GHz Pentium 4 and 1GB of RAM to see how each device handled our stack of tapes. Our system had two ATA hard drives, which is an ideal configuration for video editing, as we could dedicate one drive to storing the captured video. The size of your hard disks is also important: The more free disk space you have, the more video you can capture. We'd recommend having two drives with at least 40GB each to give you enough room to store and edit your video. Our test system also had USB 2.0 ports that can transfer data much faster than the older USB 1.1 ones. All of the

FEATURES COMPARISON

VIDEO CAPTURE PRODUCTS: JUST THE FACTS

ALL OF THESE PRODUCTS can take video from your old analog camcorder and convert it into a digital format ready for putting onto a DVD.

PRODUCT	Street price (7/1/03)	PC interface	Video inputs	Video outputs	Audio input integrated?	Bundled software
Adaptec VideOh DVD ★★★★☆ find.pcworld.com/37145	\$150	USB 2.0	Composite/ S-Video	None	Yes	Sonic MyDVD 4, ArcSoft ShowBiz
ADS Technologies USB Instant DVD 2.0 ★★★★☆ find.pcworld.com/37154	\$160	USB 2.0	Composite/ S-Video	Composite/ S-Video	Yes	Ulead VideoStudio 7 SE, Ulead DVD MovieFactory 2, ADS CaptureWiz, MuVee AutoProducer
ATI All-In-Wonder 9800 Pro ★★★★☆ find.pcworld.com/37157	\$449	AGP	Composite/ S-Video	Composite/ S-Video	No ¹	Pinnacle Studio 8
Best Buy AVerMedia DVD EZMaker USB2.0 ★★★★☆ find.pcworld.com/37160	\$90	USB 2.0	Composite/ S-Video	None	Yes	NeoDVD Standard Digital Suite, Broderbund MovieShop Select 6.5
Pinnacle Studio MovieBox USB ★★★★☆ find.pcworld.com/37250	\$165	USB 2.0	Composite/ S-Video	Composite/ S-Video	Yes	Pinnacle Studio 8

FOOTNOTE: ¹ Uses the PC sound card to capture audio.

USB products we tried can work with USB 1.1 ports, but the quality of the video suffers, as it has to be more heavily compressed to fit into the smaller bandwidth of USB 1.1.

Alfred Hitchcock once said a good movie is worth the price of admission, the tab for the dinner, and the cost of the babysitter. Good home movies, then, should be worth the expense and effort it takes to digitize them. And you won't even need a babysitter. See, you're saving right there....

PLUGGING IN

OUR FIVE VIDEO EDITING DEVICES vary in their interfaces, their capabilities, and their software packages. Four of them are external devices that connect to your PC via USB 2.0 ports: the \$90 AVerMedia DVD EZMaker; the \$150 Adaptec VideOh DVD; the \$160 ADS Instant DVD; and the sleek, Porsche-designed, \$165 Pinnacle Studio MovieBox USB.

We also tried the high-end \$449 ATI All-In-Wonder 9800 Pro, which is the most expensive of the group. Since it is a graphics board that plugs into the AGP slot on your motherboard, the All-In-Wonder 9800 also requires a more involved installation than the other products here. You'll have to hook up this powerhouse to one of your system's power leads (a splitter is included).

IMPORTING VIDEO

THE ADS INSTANT DVD, Adaptec VideOh DVD, and Pinnacle Studio MovieBox USB devices include external *breakout boxes* that connect to your PC via a USB cable, making it convenient to hook up your camcorder to your PC when you want to capture video. These devices also contain chips that do the hard work of converting analog video to digital, taking some of the strain off the computer. If you're not using a very recent PC, you'll ►

but their features and prices differ greatly.

	Comments
	Has a sharp-looking external box and hardware encoding but no analog output.
	A handy external box and wizard-driven software make capturing and outputting video simple and straightforward.
	High-end 3D graphics board has a wealth of video and TV features, but it's very expensive.
	This small, versatile, and inexpensive capture device requires significant processing power in your computer.
	Is a straightforward and easy-to-use device that comes with a good software bundle.

DIRECT TO DIGITAL

Digital Camcorders Reviewed

IF YOU CURRENTLY USE AN ANALOG CAMCORDER, you're probably thinking that upgrading to digital will save you from this conversion hassle in the future. It will—and not only that, you'll have better image and sound quality, too. Here are our reviews of five of the hottest digital camcorders, including one from Hitachi that records directly to DVD.

Canon Elura 50

\$650

★★★★☆

find.pcworld.com/37061

JUST 2.2 INCHES WIDE by 4.4 inches deep by 3.5 inches tall and under a pound in weight, the Elura 50 is the smallest and lightest of the



camcorders here. Its upright configuration packs a lot of features into a package that sits comfortably in the hand. The Record button, for instance, is right under the thumb for right-handed users, although southpaws and those with very small or very large hands may find its position awkward. The Elura 50 provides a good range of shooting modes, including two night-time modes that use a slow shutter speed and a white LED (Canon calls it an "assist lamp") that illuminates the scene, but only for a few feet. The 10X optical zoom looks good, but the 400X digital zoom (like all digital zooms) produces grainy, blurry, and jerky-looking video at higher magnifications. A variety of special-effects modes (such as sepia, negative, and a fade between video and a still image) are also included. The camcorder can also take 0.7-megapixel still images and save them to an SD Card memory card, which can then be transferred to a PC through a USB connection.

The small size of the Elura 50 does have its downsides: The 2-inch (diagonal) LCD screen, although bright and easy to view in most lighting conditions, is smaller than the screens of the other camcorders we reviewed, so screening videos without plugging into an external TV would be awkward. The camcorder also has both composite and S-Video in and out ports. The standard battery is also smaller than most; it ran out of juice after just over an hour in our informal tests. Larger batteries are available: A \$70 extended battery ran for over 2 hours, but it added significantly to the bulk of the camcorder.

Accessing the menu also leaves something to be desired, as it involves using all of the following: a menu button to get to the menu itself, a dial to move through the menu, and a set button ►

likely want to consider one of these products because video kits with hardware encoding require much less computing horsepower than their software-encoding counterparts. The AVerMedia DVD EZMaker (which relies on the PC to do the encoding) requires a 2-GHz processor or better, and Pinnacle recommends a 500-MHz processor at a minimum for its MovieBox USB.

The ADS USB Instant DVD is bundled with a program called CaptureWiz that gets high marks for smartly combining screen shots of the hardware connections and their corresponding software choices to illustrate the steps to connect your camcorder. The menus show you where to plug in an S-Video cable on the Instant DVD, for example, and which buttons to click in the software to begin capture.

All of the devices with breakout boxes capture audio as well as video through their USB connections, but the AVerMedia and ATI products send the audio signal from the camcorder to the line-in port of your PC's sound card with a provided cable. The All-In-Wonder board has proprietary cables that combine its S-Video connectors with audio into one small, round plug. One connector from the video/audio-out port must be plugged into the line-in port on your sound card.

In our subjective image quality tests, we saw very little difference between the products when capturing MPEG-2 video using the highest possible settings. The cheapest product, the AVerMedia, actually outscored all the others, but it beat out the next best, the Pinnacle, by only a hair. All the products captured good-quality video with accurate colors and smooth movement.

Captured video from your camcorder often has the tendency to be dark and oversaturated, but all of these products allow you to reduce the saturation and increase brightness while capturing. Such tweaking is much quicker during capture than afterwards, although the programs let you do this on previously captured video.

PICKING A FORMAT

VIDEO EATS AMAZING amounts of hard drive space, so you may be tempted to try to conserve disk space by capturing at less than the best quality setting. Think twice, though, because once you drop those bits, you can't get them back. You should import your video at a high enough bit rate that you won't have low resolution and blocky, choppy video when you create a DVD. ▶

THE ATI All-In-Wonder
9800 Pro.



Camcorders Continued...

to select an option. This approach is much less elegant than the single button-and-dial combination found on Sony's DCR-TRV70, albeit the steps are more of an inconvenience than a problem.

UPSHOT: The Canon Elura 50 provides a lot of camera in a small package, although some may find the unit's small screen and compact form awkward to use.

—Richard Baguley

Hitachi DZMV350A DVD Camcorder

\$840

★★★★☆

[find.pcworld.com/
36965](http://find.pcworld.com/36965)

THE HITACHI DZMV350A is an extremely small and portable camcorder, weighing only 1.3



pounds and measuring 3.5 by 2.2 by 5.3 inches. The camera's long battery life (over 2 hours), coupled with its slew of zoom, autofocus, and white-balance features, makes this product extremely attractive at first glance. It even shoots 1-megapixel still images and stores them on SD memory cards, and boasts an adequate 2.5-inch (diagonal) LCD and internal electronic viewfinder. But it's far from perfect.

What's unique about this camcorder is that it records onto 8-centimeter DVD discs that are much smaller than the normal recordable DVD discs. You can pop the disc right out of the camera and into your standard DVD player to view your movies in the comfort of your living room.

There are complications, however. The camera can use two types of 8cm DVD discs (both of which require a flimsy internal carrier)—DVD-R, \$5 per disc; and DVD-RAM, \$18. These discs are not widely available in stores, though you can buy them online. Each 8cm DVD-R disc can hold up to 60 minutes of video, while the DVD-RAM discs are double-sided and can hold up to 2 hours of video. To play the 8cm DVD-R discs on your home DVD player, you'll first need to "finish" the disk in the camera by completing a set of on-screen commands, which means you can't then record any more on it. Most home DVD players should be able to read these smaller discs, but some older models may not. The rewritable DVD-RAM discs can be reused (much like videotapes), but most home DVD players can't read them.

This format has some advantages, though: You needn't fast-forward and rewind to view clips or find a blank spot for recording because the camera can access each clip immediately. Video clips can be downloaded to your PC through the USB 2.0 ▶

Pioneer *sound.vision.soul*



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We encoded a video clip at the three quality settings offered by the Pinnacle Studio 8 application. For a snapshot of the results, see the table "Video: The Eyeball Test" on page 124. The bottom line is that the lower quality settings let you fit more on your drive, but the video looks awful.

All five of these products offer preset quality options, which are typically classified by the end product you plan to create: DVD, Video CD (VCD), or Super Video CD (SVCD). If you know that your video is going straight to DVD, you'll want to stick with the quality setting for DVD, which uses MPEG-2 compression. If you capture your video in MPEG-2, you won't later have to convert it before burning a disc, a process that can take hours.

DIRECT TO DVD

IF ALL YOU WANT is an exact copy of your tape without any edits, opt for a product that includes *direct-to-disc* capturing. This means the software captures the video, converts the file to DVD format, and burns it to a DVD, all automatically. Some pro- ▶

From Dusty Film Reels to DVD Treasures

GOT A PILE OF 8mm home movies lying in your closet? Moving them to a digital format will make them easier to edit and share. You can either do it yourself or pay someone else to do it for you. The former is definitely the cheaper way to go, especially if you have more than a reel or two to convert. You may already have the equipment you need: a film projector, a video camera, a white wall, and not much else to do for several evenings. Just project the film onto a white wall in a dark room and videotape the projected image.

Should you decide to pay someone to do it, you'll want to do some research: Specialty photo shops, video companies, and some copy shops offer film-to-video transfer services, but most of these are small, independent operations whose costs and quality vary widely.

Before you commit to a service, ask questions: How much

does it charge per foot of film? Typical costs range from 10 cents to 20 cents a foot (16 feet of super-8mm film is about 1 minute). Most services can migrate your movies to DVD, VHS, or MiniDV, but watch out for hidden costs that can add up quickly. One service I tried charged me nearly \$30 for a MiniDV tape—about four times what you would pay in a retail store.

Ask how the service actually does the transfer: If it simply projects the film onto a wall, you might as well do that yourself. Others use a video camera and a projection box, while some use a special projector that has an electronic sensor instead of a lens—probably the method that produces the best quality. Regardless of the method, the safe bet is to give the service one reel and check out the results. If you're happy, send off the rest of your movies.

—Tracey Capen

Camcorders Continued...

connection, and the basic video editing software that is supplied can burn the edited video to DVD within the camcorder.

UPSHOT: This camcorder has plenty of nice features, but the mini-DVD format still needs its usability wrinkles ironed out.

—Chris Manners

Samsung SCD33

\$499

★★★★☆

find.pcworld.com/37058

AT \$499, the SCD33, Samsung's MiniDV camcorder, is the lowest-priced model of the devices that we reviewed, yet it still delivers an impressive set of high-end capabilities for your household's low-budget video director.

For starters, there is a fine selection of features, including a very wide shutter speed range (from 1/10,000th of a second to 1/60th of a second); a built-in, 0.68-megapixel digital camera; and the ability to save highly compressed MPEG-4 video to a Memory Stick flash memory card (although a 16MB card can hold only a minute of video). Thanks to a combination of slow shutter speed and an infrared emitter, the camera's night vision capability lets you shoot scenes in total darkness, giving your campsite video the look and feel of a live-from-the-front-lines war report. As well, at 2.7 by 3.5 by 4.4 inches and just under a pound in weight, the SCD33 is small enough and light enough to carry around on a trip.

The camera's 10X optical zoom can bring you closer to the action, and it has an 800X digital zoom, although it is pretty much useless beyond 20X without a tripod, and even then produces grainy video. Shaky-handed cinematographers get a technical assist from the camera's digital image stabilization, which did a nice job of keeping the video steady.

The one weak spot in an otherwise good camcorder is its focusing. In many situations (especially in low light), the camera could not lock its autofocus consistently on the target, resulting in shots that looked like the lens was smeared with Vaseline as it attempted to focus. This effect got worse at the higher zoom settings. Switching to manual focus isn't a very satisfying solution, either, because the manual focus controls are awkward. You have to go through a menu rather than apply a physical control like a focus ring or a thumbwheel.

UPSHOT: Lots of nifty features wrap up a very reasonably priced, small, and light camcorder, but the sloppy autofocus—combined with the cumbersome manual focusing—is annoying.

—Andrew Brandt ▶



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grams (such as Sonic's MyDVD, included with Adaptec's VideOh DVD) record the video to your hard drive and then burn to a DVD-R or DVD+R disc. Others (such as Ulead's DVD MovieFactory 2, included with ADS's USB Instant DVD) can also record directly to rewritable DVDs, bypassing the hard drive. Either method handles the job without any intervention from you, so you can start the capture process and go have dinner—a definite bonus if you are planning to capture a lot of video.

The process worked surprisingly well for recording our home movies, automatically adding DVD menus and chapter points (you can choose how often to set an automatic chapter point). Ulead DVD MovieFactory 2's direct-to-disc wizard was the easiest to use, and the program can detect scenes and automatically add chapter points. Direct-to-disc encoding was, in fact, the easiest way to go from video to DVD in our testing, if you don't mind giving up creative control. You can't create sophisticated-looking DVD menus or trim the boring parts if you go direct to disc (although you can import the video into a video editing program, edit it, and then burn the edited result to DVD disc at a later date). It took about 10 minutes to capture, encode, and burn a 5-minute video clip to a DVD-R disc in MovieFactory, while the same process took 19 minutes in NeoDVD, which comes with the AVerMedia device. However, you do need a pretty powerful PC to capture the video, convert it, and then write it out to DVD in one pass. Our test system had no problem, but slower machines may not be capable of keeping up and may crash.

MAKING THE CUT

EDITING VIDEO, even on our fast test system with a gigabyte of memory, often involved waiting some time to see the final result. And during our editing runs—mostly with MPEG-2 video—we saw all of the video editing packages crash on occasion, so it makes sense to save often, or you could lose hours of work.

It's definitely worth spending some time tuning up your system before you start editing videos. Defragment your disks and make sure you have the latest drivers for your video capture device and the latest version of the capture software. You may also want to check your system and graphics board vendors' Web sites for the latest BIOS version and drivers.

Both the ATI and Pinnacle products include a version of Pinnacle's Studio 8 software, which is equally capable when capturing video, editing, adding transitions, or burning to DVD. The program's simple interface belies its deeper capabilities, such as the ability to adjust audio throughout a clip in real time, a great help for boosting dialogue or adding a background music track. ▶

Camcorders Continued...

Sharp Viewcam VL-Z7U

\$570

★★★★☆

find.pcworld.com/

37004

THE SHARP Viewcam VL-Z7U has a much different design from the



other camcorders reviewed here: Both the grip and the 2.5-inch (diagonal) LCD screen can pivot to different angles, so you can comfortably film from waist level or above your head while still using the hand strap. Although not the smallest camcorder in this group, its dimensions of 3.2 by 3.1 by 4.1 inches and its 1.1-pound weight meant that it was small enough and light enough to carry for an extended time. The controls are accessible from a four-way toggle switch just above the display, and they are straightforward and easy to use. The LCD was quite readable in most lighting conditions.

Like all the camcorders we tested, the VL-Z7U can save still images to a flash memory card: As a 1.3-megapixel still camera, it produced adequate pictures, although it won't replace a dedicated digital camera. It also comes with a flash that was useful for close shots but not much else. You can also transfer video frames from tape to the flash card as stills.

This camcorder delivered well-balanced color and correctly exposed images in most lighting conditions, although it lacks an infrared emitter for taking video in total darkness. The 10X optical zoom was good, but the 500X digital zoom was pretty ▶

COMPRESSION EFFECTS

VIDEO: THE EYEBALL TEST

QUALITY SETTINGS to encode video do matter, as results with Pinnacle Studio 8 show.

PINNACLE STUDIO 8 QUALITY SETTING	Compression type/data rate	Space required for 60 minutes of video (gigabytes)	Quality rating	Comments
DVD High	MPEG-2/6000 kbps	2.74	Very good	Showed smooth action and accurate colors.
SVCD Medium	MPEG-2/2400 kbps	1.14	Good	Colors looked realistic, but the video was slightly jerky.
VCD Low	MPEG-1/1150 kbps	0.59	Poor	Produced jumpy video and unrealistic-looking colors.

HOW WE TEST: We captured a video recorded on a Sony DCR-TRV318 Hi8 analog camcorder using the ATI Radeon 9800 All-in-Wonder Pro graphics card, using the three different quality settings of Pinnacle Studio 8. The videos were played back on two calibrated 21-inch NEC monitors.

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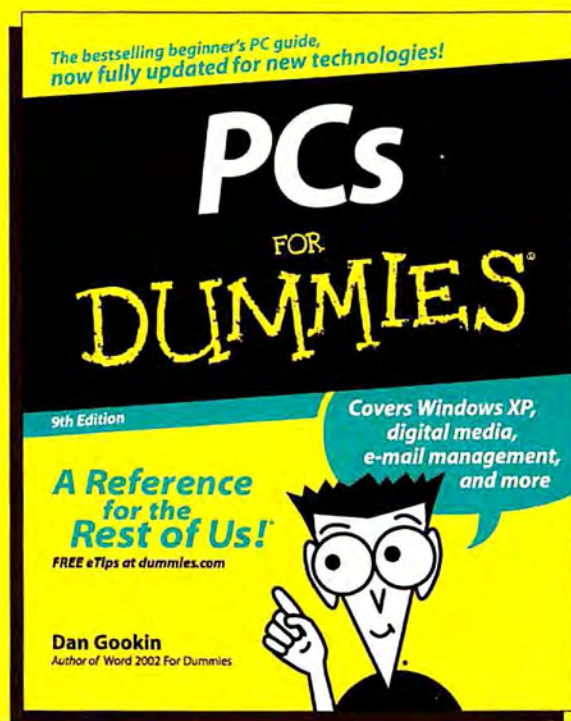
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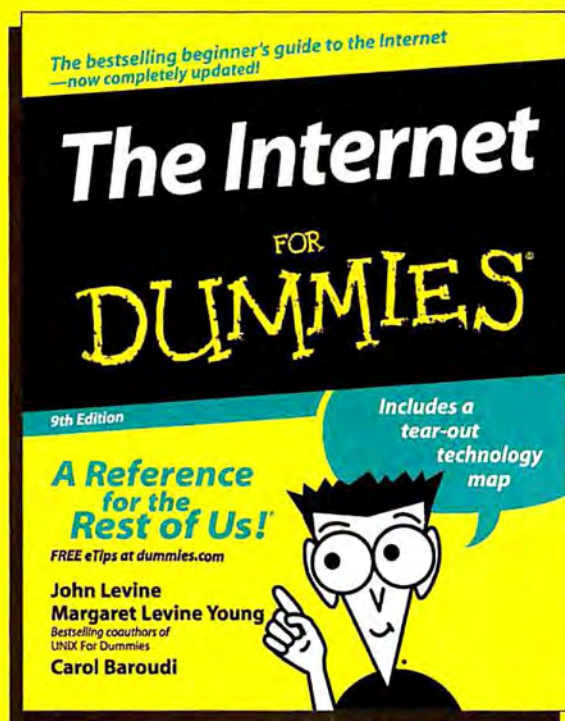
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ADS's USB Instant DVD comes with Ulead's VideoStudio 7 SE, which offers both timeline and storyboard views for quickly arranging video clips and transitions into linear slots on the screen. The program offers more than 100 video transitions for moving gracefully between your video clips, and it provides 35 useful filters for improving picture quality—letting you, for example, adjust brightness or saturation using a simple slider.

Adaptec bundles ArcSoft ShowBiz with its VideOh DVD. ShowBiz is simple and user-friendly. The AVerMedia DVD EZMaker comes with the NeoDVD package, which includes Broderbund's MovieShop Select 6.5; it's a video editor that's cut from the same cloth as Ulead VideoStudio.

GETTING IT WRITE

SOME OF THESE products also allow you to write your videos to videotape. This requires a video-out port, which all but the AVerMedia DVD EZMaker and the Adaptec VideOh DVD have.

All the devices we looked at can write to DVD discs and support a wide range of drives. For more information on DVD burning, see "Put It on DVD" at find.pcworld.com/37214.

The units here can also compress the video you capture into small files for showing on the Web or e-mailing, but Ulead VideoStudio has an especially slick Share command that can in

a single step generate a Web page with your video embedded as an MPEG-1 file, or attach the file directly to an e-mail message.

While the range of video editing possibilities can make your creative heart leap, you'll save rendering time and general headaches by keeping your projects no more complicated than they have to be. Just because a program comes with loads of fancy transitions and snazzy filters doesn't mean you should always use them. Film-

makers worldwide know that simple, straight cuts and less flashy effects are often the most effective and let you finish faster.

A good director begins with the end in mind. The decisions you make when you capture will greatly affect your video quality when it's time to put your production on tape or DVD. Capture at the highest quality, and any one of these products will do your VHS and 8mm tapes justice for this and future generations. ■

Paul Heltzel and Chris Manners are freelance writers. Richard Baguley and Andrew Brandt are senior associate editors, Andrew Eisner is executive producer, and Alan Stafford is a senior editor for PC World.

Camcorders Continued...

useless beyond 20X, producing grainy, jittery images. In our informal tests, the standard battery lasted about 2 hours—long enough for a weekend of casual shooting.

UPSHOT: The Sharp Viewcam VL-Z7U has an innovative design that provides easy handling and produces good-quality video.

—Andrew Eisner

Sony DCR-TRV70

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36998

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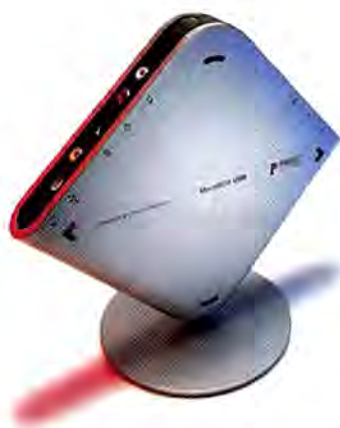
video footage. It's one of the most advanced consumer models we've seen, with an extremely effective image stabilizer and a very quick response to changing lighting conditions. The camera also offers several methods for shooting in low light, including a Super NightShot mode that lets you shoot in total darkness thanks to an infrared emitter. And the DCR-TRV70 focuses quickly, no matter what the lighting conditions.

The 2.5-inch LCD display is bright and easy on the eye, but accessing the controls is awkward: You use a stylus on the touch-sensitive LCD display, making navigation slower and much more laborious than if you were using buttons and/or dials on the body. The dial for switching among modes is set too close to the record button, so I often inadvertently started recording when I wanted to turn the camcorder off. And the zoom control is way too small: It's the size of a Tic-Tac. The moderate-sized body is heavy—just over a pound and a half with the battery—yet it fit my hand comfortably. It's also differently proportioned than the others, at 6.9 inches long but only 2.9 inches wide and 3.5 deep.

The 2-megapixel stills that the camera captures look adequate, but they're not even close to the quality of pictures taken with a digital still camera. You can e-mail stills and MPEG-1 movies from a Memory Stick and use the LCD screen as an Internet browser, but to do so you must purchase a \$100 USB modem. This is also the first camcorder we've seen where you can transfer recorded video over a USB 1.1 connection, although the resulting video was jerky and pixelated.

UPSHOT: You'll admire the DCR-TRV70's image quality and sophisticated features but be vexed by its inane menu system.

—Alan Stafford



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Microsoft's new release boasts a brighter Outlook, potent workgroup tools, and a few surprises. But this upgrade isn't for everybody.



INSIDE OFFICE 2003

BY LAURIANNE McLAUGHLIN



MICROSOFT HAS DECIDED that we users have become pretty darn productive. Though Office “suites” of the past were all about helping individuals work faster and smarter, Microsoft’s new Office “system” focuses squarely on getting users to work *together* faster and smarter. Suites, including Office, have pushed group features since the mid-1990s. But in Office 2003, for the first time, changes to the package’s bread-and-butter ►

ILLUSTRATIONS BY PETER HOEY

apps are so slight that you could miss them. The significant news for people flying solo is in just one program: The revamped Outlook 2003 has a smarter interface and handy added features.

True, the company has given Word 2003 a Reading Layout view that makes perusing your documents more like thumbing through the pages of a book. The new versions of Word and

business problems and streamline group work. Microsoft sees Office 2003 as a tool that enhances your ability to perform tasks such as compiling sales forecasts and creating reports. The program's expanded XML capabilities star in this vision.

XML, or Extensible Markup Language, lets a company tie data from a back-end server database such as Microsoft SQL Server or Oracle to the Office documents its employees use day in and day out. This keeps everyone working with the most up-to-date information, such as current inventory figures or the latest marketing material. Also for groups,

Microsoft has added new document-collaboration features and a technology to lock down confidential documents electronically.

Not everyone wants or needs all of the group capabilities, however, which brings up Office 2003's other twist: Microsoft has cooked up six different "Editions" (see the chart below for pricing). Luckily, no file-compatibility issues lurk between the versions of the applications in the different Office bundles.

But there are two caveats. First, for an organization to use many of the new group features, everyone must have the Pro-



CHANGES TO WORD AND EXCEL ARE SO SLIGHT THAT YOU COULD MISS THEM.

Excel give you a nifty way to do research from inside the document you're working on. And Tablet PC owners no longer have to download an update to make Office work on their machines. But if you live only in Word and Excel and aren't part of a workgroup, the notable changes end there.

The software "feature wars" are over. In these lean economic times, Microsoft will find persuading corporations to upgrade to Office 2003 difficult, so the company is surrounding the update with a careful marketing strategy, promoting it as a way to solve

OFFICE LINEUP

THE SIX OFFICE 2003 EDITIONS: APP BY APP

ONLY THE PROFESSIONAL Enterprise Edition includes the new InfoPath XML program, while the Business Contact Manager debuts in the two Professional versions and in the Small Business bundle.

EDITION	Price (MSRP/upgrade)	Volume licenses	Word	Excel	Outlook	PowerPoint	Access	Publisher	Business Contact Manager	InfoPath
Professional Enterprise	Volume licenses only	Yes	●	●	●	●	●	●	●	●
Professional	\$499/\$329	Not for retail	●	●	●	●	●	●	●	
Small Business	\$449/\$279	Yes	●	●	●	●		●	●	
Standard	\$399/\$239	Yes	●	●	●	●				
Student and Teacher	\$149/ ¹	Yes	●	●	●	●				
Basic	Not for retail ²	Not for retail ²	●	●	●					
Stand-alone price (MSRP/upgrade)			\$229/\$109	\$229/\$109	\$109/ ¹	\$229/\$109	\$229/\$109	\$169/\$99 ³	¹	\$199
What's new			The Reading Layout view and Research Task Pane are welcome additions, but otherwise the big deal is the behind-the-scenes XML enhancements.	The Research Task Pane and the List Management feature (Professional Enterprise version only) are the only noteworthy added features.	The vertical layout makes your in-box easier to browse, and flagging features bring important e-mail messages to the fore.	Videos can play full-screen in your presentations, and both audio and video can stream to a presentation.	You can back up your databases from within the program; form and report-design errors are easier to catch.	New categories in the New Publication Task Pane help novices post a publication to a Web site or prepare it for a commercial printer.	This Office newcomer is an Outlook add-on that lets small businesses track sales leads and project monthly results, among other options.	Microsoft's XML front end uses forms to automate data entry into back-end systems.

FOOTNOTES: ¹ Not applicable. ² Preloaded with new PCs. ³ Publisher with Digital Imaging costs \$209 (\$139 upgrade). **CHART NOTES:** The Office 2003 system also includes the stand-alone applications FrontPage 2003, OneNote, Project 2003, SharePoint Portal Server, and Visio 2003. See page 72 for a review of FrontPage 2003 and Visio 2003.

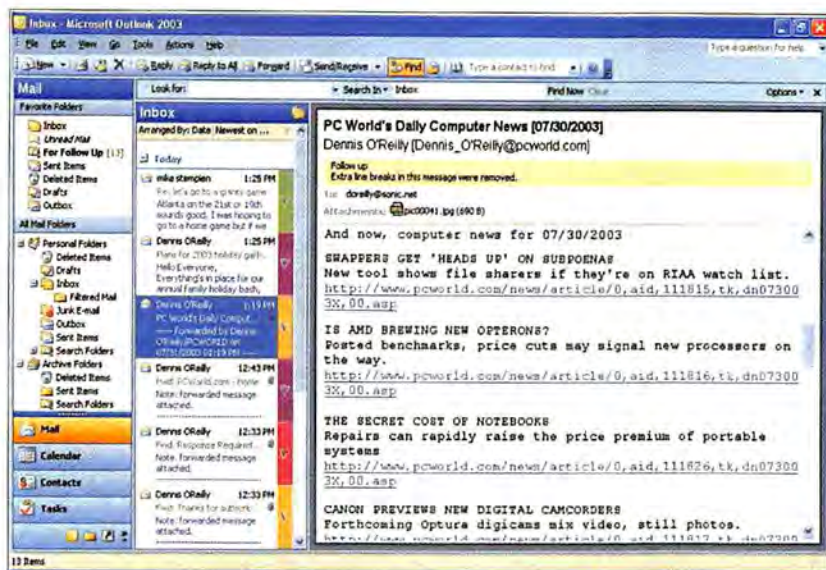


FIGURE 1: THE NEW VERTICAL LAYOUT in Outlook 2003 makes it easier to read the message selected in your in-box. And the program's new flags make organizing your in-box a snap.

fessional Enterprise or Professional version. Second, the people who create a group's XML forms and do the back-end data work need the Professional Enterprise or Professional package. Others in the company can read or save XML-enabled documents with the less-expensive Standard and Small Business bundles, but they can't create the schemas that are the magic behind the technology (see "Office 2003 and Your Workgroup" on page 134).

For the most part, Microsoft is holding the line on Office 2003 pricing (again, see the chart on page 130). The MSRP and upgrade prices are the same as those of the corresponding XP products, for the Editions as well as for the stand-alone apps. Outlook 2003 is the exception: While the program's cost remains \$109, no special reduced prices will be offered to upgraders.

OUTLOOK'S NEW LOOK

CURRENT OUTLOOK users will have one burning question about the revamped version: "Does it help me clean up the mess that is my in-box?" After spending several months with the beta version of the new Outlook, we say the answer is a definitive yes.

Outlook's makeover starts with the new vertical default view. On the left side, a navigation pane lists your e-mail accounts and folders; the middle in-box pane displays your received messages; and on the right, the reading pane (called the "preview" pane in earlier versions) shows the contents of the selected message.

Reading these vertical panes feels more natural, much like perusing a newspaper. You can see more messages at one time in the in-box, and you can view more text from the selected message in the reading pane without having to scroll (see **FIGURE 1**). The new layout may look busy at first, but you'll soon find that the vertical orientation makes messages quicker and easier to read than they were in Outlook's previous horizontal preview pane. Close the reading pane to see more of your in-box messages, or move the pane to the bottom to approximate Outlook's old look.

Appearances matter, but what could really win over Outlook holdouts is the program's new organizing prowess. You can now choose one of six colors when you right-click the flag for each in-box listing. (The previous version let you flag individual messages for follow-up, but the flags weren't particularly useful.) Group your messages by arrival time, and Outlook labels the groups 'today', 'yesterday', 'last week', and so on. Or arrange your in-box by flag—for example, with all red-flag messages up top. If you flag e-mail as it arrives, this system presents messages in their order of importance. Don't get too fancy with your color system, though: You can't add a text description (such as 'high-priority') to your flags, nor can you save a key to identify what your colors represent.

The Tools menu's 'Rules and Alerts' option helps you make flags work even better. For instance, you can set up a rule instructing Outlook to automatically flag e-mail from a particular person—your boss, perhaps—in a specific color (see **FIGURE 2**).

The icing on Outlook 2003's organizational cake is the pro- ▶

SHOULD YOU UPGRADE?



IS IT TIME to redecorate your Office? If you're still using either Office 97 or 2000, an upgrade to Office 2003 is well worth the price for its revamped Outlook and for such improvements as Word's new Task Panes, which debuted in Office XP. If you already use Office XP, however, your upgrade decision will depend more on your individual work situation.

The one-person office: Upgrade Outlook only. The changes in Word, Excel, and PowerPoint aren't worth the money.

Corporate workgroups: Upgrade to Office 2003 if your company will use the XML and group features. Otherwise, consider upgrading just Outlook. Remember, the people in your organization who create the XML forms and set up the data links will need the Professional or Professional Enterprise version; the other Editions permit users only to read and save XML-enabled documents.

Small businesses: The new version of Outlook, the Business Contact Manager, and Publisher 2003's enhanced New Publication Task Pane may justify your upgrading to the Small Business Edition. But if you're already hooked on Act—or if you use only Word, Excel, and Outlook—upgrade Outlook alone.

—L.M.

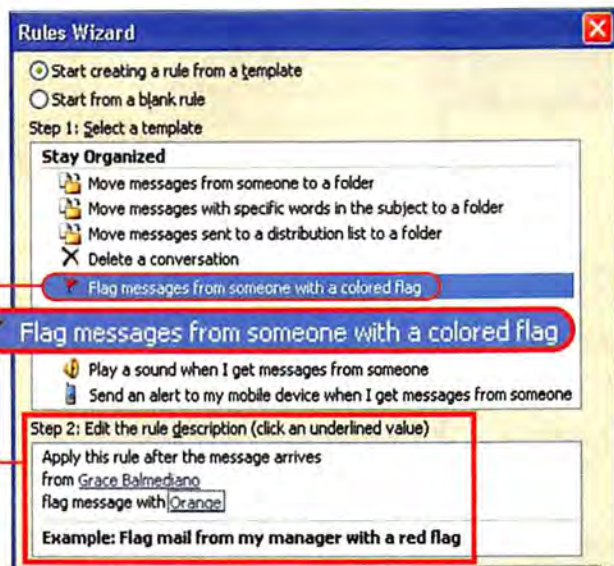


FIGURE 2: SEND MESSAGES FROM specific people to the top of your in-box by creating a rule for one of Outlook 2003's six colored flags.

gram's ability to keep searches in search folders, without moving the messages from your in-box. This saves time by letting you create a search for a word relating to a current writing project, for example. After the initial search, Outlook continues to update the folder, so every time you click that search folder, the program grabs all the new messages you've received that contain the specified word. The function makes getting a grip on the random information lurking in your e-mail much easier. You can choose from preset folder options, such as 'containing the word', or customize your search to look only in messages with one or more attachments, for example. This is what well-designed software is supposed to do—save you time and get you organized.

If you love to read about "generic Viagra" and get-rich-quick schemes, you'll hate Outlook's new junk mail screener. For everyone else, it's a gem. Outlook 2003 intelligently routes much genuine spam into a Junk Mail folder. Open it when you want to view the message subjects, and then delete them en masse.

Outlook 2003 also prevents messages from grabbing material off the Web, such as images of products sent in an e-mail message from a store, and it automatically stops e-mail from loading malicious content onto your PC. When a message tries to connect to the Internet, you see a small alert; right-click it and select *Download Pictures* to see the content. Outlook remembers who is sending you junk and who isn't (a store you like, for example).

The latest version of Outlook offers a bonus for small businesses. Office 2003 Small Business Edition includes the new Business Contact Manager, a good-looking Outlook add-on that does basic customer-relationship management tasks, such as tracking your sales pitches from start to finish and your projected results for the month or quarter. For anyone who isn't already charmed by Act or another contact-management program, the Business Contact Manager represents a useful extra.

Office 2003 unveils Microsoft's Information Rights Management technology, designed to help companies control documents and e-mail. The Professional and Professional Enterprise packages, running on Windows Server 2003, let you create "protected" e-mail messages that can't be printed, forwarded, or copied.

You can also create Word, Excel, and PowerPoint documents with similar restrictions and/or expiration dates, after which the files will not open. One point of IRM is to prevent someone from goofing up a document on which you've worked long and hard—a presentation with a corporate-mandated color or graphics scheme, for example. But IRM's main goal is to control the ►

WHAT'S NEW IN POWERPOINT, ACCESS, AND PUBLISHER

MUCH LIKE THE 2003 models of Word and Excel, the new versions of the other Office apps gain merely utilitarian, undramatic enhancements. Here's a rundown of the most noteworthy changes in these programs. (The chart on page 130 lists which Editions include each app.)

PowerPoint 2003: You can now play .avi, .mpg, and other video files full-screen from within your presentations; you can place video playback controls directly in the slide show; and you can stream both audio and video into your presentations.



The new version also makes it much easier to place your PowerPoint files onto a CD.

Access 2003: The new version lets you back up the database you're working on without having to exit the program. Access 2003 can now discover errors in forms and in report designs automatically, and the program even suggests corrections. Database administrators will appreciate the added feature that lets them identify object dependencies more easily.

Publisher 2003: Microsoft has added 10 design templates to the program, bringing

the total number of templates to 45. Publisher's enhanced Design Checker Task Pane makes it easier than ever to ferret out and fix potential problems with printing or Web publishing. The New Publication Task Pane's new categories help neophytes prepare a publication for print, for posting to a Web site, or for e-mail transmission. Sending your output to commercial printers is simpler and faster with the program's added support for CMYK Composite Postscript. And you can now choose one of eight personal stationery sets for making address cards, letterheads, envelopes, labels, greeting cards, and invitations.

—Dennis O'Reilly

Acer recommends Microsoft® Windows® XP.



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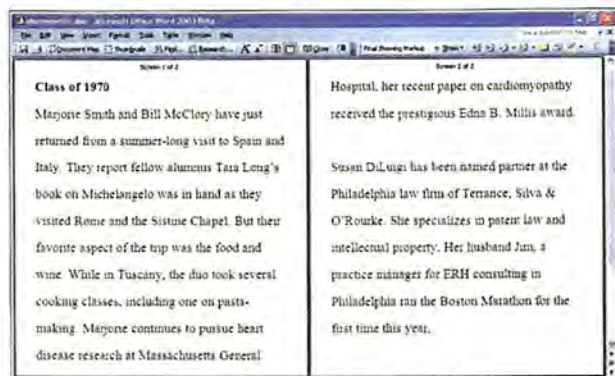


FIGURE 3: READING LONG DOCUMENTS is more natural with the two-page look available in Word 2003's new Reading Layout view.

flow of information and thereby provide another layer of protection against corporate legal troubles and leaks.

Recipients of IRM-protected files will need either Office 2003 or a viewer that Microsoft plans to offer on its Web site and incorporate into Internet Explorer. IRM could help companies lock down confidential documents, but there's potential for aggravation. For instance, what if you send IRM-protected files to people who use a Web browser other than IE? Whether the Microsoft viewer will play nicely with other browsers remains to be seen.

If Outlook is your primary e-mail client and contact manager, you'll find that spending \$109 for the new version's fresh look and other enhancements is worthwhile. However, the improved Outlook is not sufficient justification for a total Office remodel.

WORD 2003 AND EXCEL 2003: HO-HUM

NEXT TO E-MAIL, word processing and spreadsheets dominate many people's work. Office 2003 will not fundamentally change the way most folks use Word and Excel—particularly users who aren't part of a workgroup. Neither application has received anything like the overhaul that Outlook 2003 enjoys; but then again, they didn't need extensive retooling the way Outlook did.

Word 2003 sports one change that users who spend hours glued to their monitors will appreciate: The new Reading Layout option displays your document in side-by-side "pages" so that it resembles a book (see **FIGURE 3**). ClearType technology makes the text easy to read in this mode, and you can quickly increase or decrease the size of the text via toolbar buttons without goofing up the document's fonts or formatting. With large text, the Reading Layout definitely pleases the eyes. As a bonus, the Reading Layout clears out some toolbar clutter.

In the beta version of Office that we tested, "flipping" to the next page in the Reading Layout advances the document one page at a time: The page on the right moves to the left, and the next page ap-

pears on the right. Microsoft states that the shipping version will flip directly to the next pair of pages (truly like turning the page of a book) rather than "turning" one page at a time.

Word 2003 can display thumbnails along the left side of the screen, too, with icons representing each page in a document. This arrangement reduces your reading real estate, but it could be useful for navigating through a long report, for example.

Another new feature you'll see in the 2003 versions of Word and Excel, as well as in Outlook 2003, is the Research Task Pane, which enables you to find a word's definition, use the built-in thesaurus, translate to and from a foreign language, or do a Web search—all without leaving your document (see **FIGURE 4**).

Microsoft sees a day when media companies, market research firms, and other partners will provide specialized content keyed to your research. As time passes, we'll see how that plays out.

Our verdict? The Research pane is truly useful only in Word. You're not likely to need to research a concept as you write an e-mail message or work on a spreadsheet. And if you prefer Google over MSN Search, you can't add Google to the list of search options inside the Research pane. Microsoft says it will offer free tools so that sites such as Google can make their services available in the pane, but you'll have to wait for these tools to emerge.

Microsoft touts Word 2003's enhanced integration with Internet faxing, which works if you use one of the three services the company currently supports: Venali, and J2's JConnect and EFax.

Ultimately, unless you're part of a workgroup, the Reading Layout view and the Research pane may be the only noticeable changes in Word. You'll find no feature differences among the versions of Word in the various Office bundles, except the XML capabilities and groupware functions in Pro and Pro Enterprise.

No star features shine in Excel 2003's revamp, either. The Professional Enterprise Edition offers the lone interesting new feature, List Management. (This is the only ▶

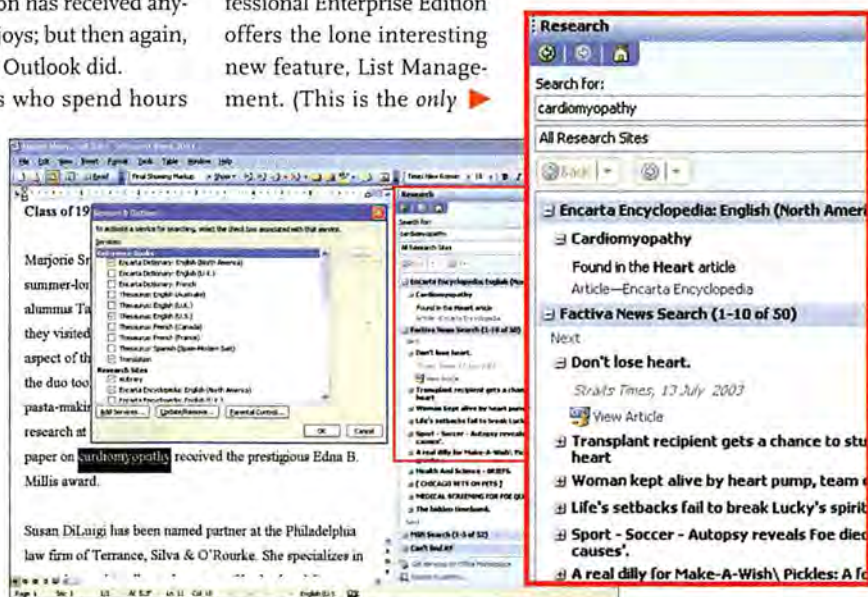


FIGURE 4: SEARCH THE WEB in Office 2003's Research pane without opening your browser.



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NaViSet™ (DDC/CI)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No Touch Auto Adjust	Yes	Yes	Yes	Yes	Yes	Yes	Yes
LiquidView Software	No	No	No	Yes	Yes	Yes	No
Multimedia	No	No	Yes	No	No	Yes	No
Vacation Switch	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cable Management	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Input Interface Connectors	VGA	DVI-D & VGA	DVI-D & VGA	VGA	DVI-D & VGA	DVI-D & VGA	DVI-D & VGA

major feature difference among the versions of Excel, excluding the XML and groupware functions.) When you're working on a spreadsheet involving categories such as months or types of expenses, List Management enables Excel to see that the information is related, and the program will carry over the existing formatting and calculations as you add to the spreadsheet.

Excel veterans may lament that Microsoft didn't address several longstanding complaints regarding the program, voiced in *PC*

World's July 2001 review of Office XP (find.pcworld.com/36737). For example, it failed to improve the 3D charting options, which are acceptable but could certainly be prettied up and expanded.

OFFICE 2003 AND YOUR WORKGROUP

MICROSOFT IS CLEARLY STRESSING the new functions for workgroups and enterprises, envisioning Office 2003 as improving how you handle tasks within your organization that are susceptible to delays or inaccuracy due to old information, such as product brochures and customer-service reports. How well this works in practice depends largely on you and your colleagues, of course.

The Professional and Professional Enterprise versions of Word and Excel let you create schemas, which are the "extensible" elements in XML, allowing users to give detailed and customized descriptions of the data they're entering. Using XML in Office apps could give the people who share the documents more accurate data automatically. For instance, it could connect sales and presentation files so that when someone doing a presentation brings up a slide with sales data, the slide always shows the latest numbers.

InfoPath, which ships only with the Professional Enterprise Edition (\$199 separately), lets you design forms to interact with information residing in databases or in other back-end systems. Microsoft expects the program to accelerate the processing of data from human resources and inventory systems, for example.

New features in Office 2003's SharePoint 2 server could improve a team's efficiency by providing a shared workspace. Currently team members likely exchange via e-mail the Word and Excel documents that make up, say, a marketing report.

For many corporations, the good news is that Office 2003 could help groups work together better. For individuals, though, the good news is that you can save your money: Aside from Outlook, and a few tricks added to Word and Excel, there's not much new in this Office. ■

Laurianne McLaughlin is a freelance writer living in Massachusetts. Edward N. Albro is an executive editor and Dennis O'Reilly is a senior associate editor for PC World.

RIGHT TOOL, WRONG MARKET

MICROSOFT'S chair didn't put the "Bill" in *billionaire* by misreading the market for his company's software. But with OneNote, Mr. Gates's marketing machine may be barking up the wrong tree.

The debuting member of Microsoft's Office 2003 "system" is actually sold separately from the various Editions. The company presents the \$199 program as a way for PC users—primarily those who work with Tablet PCs—to replicate the experience of writing longhand in a paper notebook. You can scribble on any part of the page to make rough sketches to accompany your notes (whether typed or written longhand).

The problem is: What do you do with the notes? Though OneNote converts digital writing to text, only users who excelled at elementary school handwriting lessons will find the process automatic. For the many people—including me—whose handwriting is less than impeccable, writing in OneNote produces incomprehensible combinations of letters, numbers, and punctuation that look like a cartoon character's swearing (see **FIGURE 5**).

If you leave the body of your notes in your own handwriting, you'll have a tough time finding them again. OneNote shows individual files as tabs with the title of the note on the tab. And unfortunately, that text title is created through the same flawed handwriting-recognition system, which means I have to remember that my

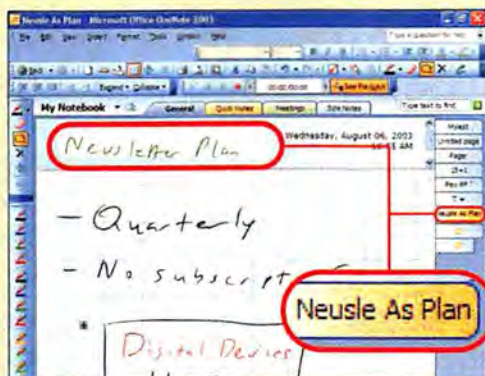


FIGURE 5: MICROSOFT'S NEW OneNote note-taking application lets you treat handwritten notes the same as typed text, but it flunks the accuracy test.

notes on an article about timesaving ideas are stored on a tab labeled 'T@ &v07'.

The real market for OneNote is a not-so-small niche: people who enter their notes from a keyboard. When you stop worrying about the app's poor handwriting recognition, you notice its nice qualities, one of which is its casual approach to file management. You never have to remember to save a note, because it happens automatically. Nor do you have to worry about where to save a note, since they all go to the same folder. To find a file later, you can search for it by keyword.

And OneNote is less picky than Word about formatting your note: Write where you want—even plop the contents of Web pages in the middle of your note—and OneNote won't impose its idea of how your document should look. This alone makes OneNote useful, as long as you use it with a keyboard and not a stylus.

—Edward N. Albro

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THE MOBILE PROFESSIONAL

Quality to Go

BRENT OLSEN SPENDS SO MUCH TIME on the road that, at times, he feels strange in his own bed. The Chicago-based pharmaceutical salesman says he can accept the long and often hard hours traveling as part of his chosen profession. But what is unacceptable to him is technology that doesn't perform with the utmost reliability to support him during his extensive travels away from the central office.

"Things like reliable Internet connections, rock-solid computers, and crash-proof software are no longer luxuries or wish-list items for people like me," Olsen says. "They are absolute requirements. If a customer wants immediate access to the best possible unit pricing at a specific point in time, I must be able to access it, or

the next guy who comes into the office will."

Fortunately for Olsen and the millions of other Americans who spend significant time traveling for a living, the industry is responding with technology that truly makes a positive difference.

For example, ask mobile professionals to paint a picture of the ideal notebook computer and they'll sketch out a "dream machine" with an ultraportable form factor, superhigh performance, and state-of-the-art mobile connectivity features baked right in.

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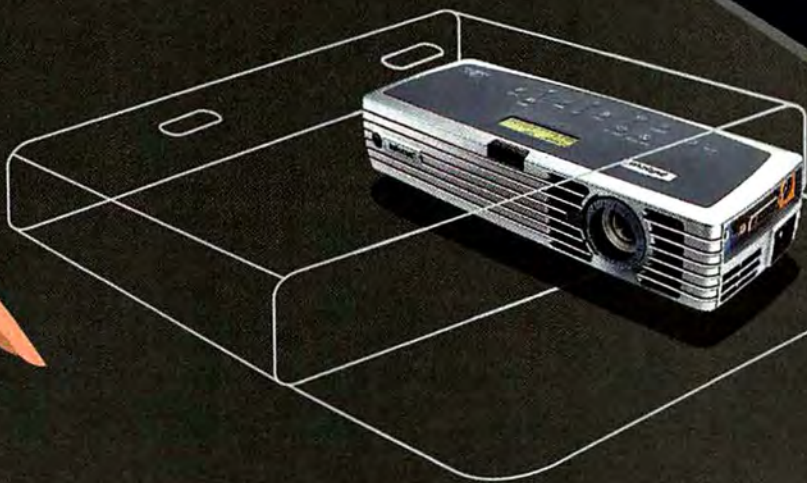


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wireless capabilities mobile professionals demand.

The modular bay on the LifeBook P5000 notebook accommodates either a DVD/CD-RW drive, a second battery, or a weight-saver module for maximum versatility. The 10.6-inch-wide-format display is ideal for watching DVD movies.

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POSITIVE IMAGE BUILDING

Mobile professionals, in particular sales specialists like Brent Olsen, know that all the technology in the world is no substitute for the personal relationships the salesperson builds that instill confidence in the client. And frequently, the first chance the salesperson gets to build these relationships is during a sales presentation, complete with multimedia slides. If this presentation crashes and burns, there is often no second chance.

Thus, presentation technology is a key element to launching and then helping sustain the kind of positive image building so vital in today's ultra-competitive economy. People like Olsen want their presentation gear to be as light as possible, but without sacrificing the quality of the presentation.

At last there are projectors as portable as a PDA or a laptop. InFocus Corporation (www.infocus.com) is

delivering the ultimate mobile solution for tech-savvy road warriors who want to project larger than life. The LP70 and the new LP120, the world's first wireless-ready personal projector, are the most mobile, take-anywhere projectors available today.

The new InFocus LP120 is the ultimate style statement. Featuring an industry-first form factor and weighing a feather-light, sub-two pounds, the LP120 debuts in a narrow profile designed to fit into a briefcase alongside a notebook computer, making it easy to stow and carry all in one bag. A seven-language interactive display eliminates the guesswork on operating status. Optical zoom, simple focus control, color-coded connections, one-touch keypad, and an MI-DA connector for wireless capability are all standard features.

The InFocus LP70 redefines the meaning of "travel lightly." Its ultralight 2.4 pounds gives you the flexibility to meet just about anywhere, from a coffee shop to a hotel lobby—even in a cubicle. With 1,100 lumens, native XGA resolution, one-touch image resizing, an MI-DA connector for wireless capability, and integrated data, video, and audio, it delivers better performance than projectors twice its size.

And the best part is that you can finally cut those cords! The LP120 and the LP70 both work with InFocus LiteShow, the new wireless solution that enables the easiest, most secure wireless projection. LiteShow provides the power of freedom and flexibility, enabling users to project anytime and anywhere—in settings that range from single presentations to collaborative meetings. More information is available at www.infocus.com.

For Brent Olsen and his fellow mobile professionals, life on the road will never be a cakewalk. But if they are careful and judicious in their selection of mobile technology, "roadwork" can be as good as it gets—and clearly it is getting better all the time.

THE AFFORDABLE PORTABLE



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And now, it's easy to own. The workhorse of the mobile professional, the 2.4-pound LP70 packs powerful projection performance in the palm of your hand. To see the latest lowest price, find your nearest dealer or to purchase online, go to www.InFocus.com.

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Fortunately, there is an innovative company with rock-solid technology that provides the perfect antidote to our human flaws and imperfections. That company is R-Tools Technology Inc. (www.r-tt.com), the leading vendor of data recovery and undelete solutions for the Microsoft Windows world.

Headlining the R-Tools product portfolio is **R-Studio**, a family of data recovery and undelete utilities capable of rescuing data on both local logical and physical disks, as well as on remote disks over networks. It doesn't matter whether their partition structures are damaged or deleted. R-Studio also includes support for RAID and dynamic disk, as well as support for recovering encrypted files, compressed files, and alternative data streams. Flexible param-



ters give you absolute control over data recovery.

R-Tools' **R-Undelete** is a low-cost, user-friendly, powerful file undelete solution capable of restoring deleted files on any valid logical disks visible to the host operating system. Together with R-Studio, R-Undelete can create an image file of any object the two recognize—a very useful capability if there is a risk of total data loss due to hardware malfunction. All data search, scan, and recovery can be done from this image.

The company's **R-Mail** tool is designed to rescue inadvertently deleted e-mail messages and to recover damaged *.dbx files where folders with e-mail messages are stored.

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TOP 100

EDITED BY REVIEWS STAFF

New 5-Megapixel Cameras Aim High



TEST Center Nearly every digital camera vendor offers a 5-megapixel model (as shown by the abundance of them on this month's Top 10 Digital Cameras chart), but new, ultrasophisticated units from Canon, Nikon, and Sony have controls—such as the Canon PowerShot G5's ability to set flash level manually—you won't find on lesser breeds.

The multifunction devices on this month's Top 5 Printers chart don't cause the same gee-whiz response, but they can give your small office printing, scanning, and faxing functions for a low price. Next month: Read about the latest graphics boards on our Top 100 spotlight chart.

INSIDE

- 144 DESKTOP PCs
- 148 NOTEBOOK PCs
- 151 MULTIFUNCTION PRINTERS
- 153 17-INCH LCD MONITORS
- 155 DVD DRIVES
- 157 SCANNERS
- 159 DIGITAL CAMERAS
- 161 MORE REVIEWS

159

Top 10 Digital Cameras

More megapixels: Canon's PowerShot G5, Sony's Cyber-shot DSC-V1, and Nikon's Coolpix 5400 rank among the most advanced 5-megapixel digital cameras you'll find.

Freelance writers Richard Jantz, Dan Littman, Mick Lockey, and Carla Thornton, and PC World editors Eric Butterfield, Tracey Capen, Sean Captain, Rebecca Freed, Alexandra Krasne, Kalpana Narayana-murthi, Melissa Perenson, and Alan Stafford contributed to the Top 100 section this month. Ulrike Diehlmann, Julio Giannobile, Elliott Kirschling, Jeff Kuta, Tony K. Leung, and Thomas Luong of the PC World Test Center performed testing on the products reviewed in this section, with logistical support provided by Julian Weatherby.

PHOTOGRAPHS: MARC SIMON

148

Top 15 Notebook PCs

More security: The MPC Transport T2000 features a built-in finger-print reader to help secure business travelers' sensitive data. But airport security personnel may do double takes for another reason—its attractive case design.



157

Top 10 Scanners

More svelte: Canon's Lide 50 measures only an inch and a half thick and weighs only four pounds, but it scans at 2400 dpi through a USB 2.0 interface. The price is pretty thin, too: only \$100.

**YOUR GUIDE TO THE TOP 100**

EACH MONTH, WE TEST a large number of PCs, printers, monitors, and other products. Only the best products land on the charts, which are refreshed monthly.

Configurations are shown as tested. The overall rating for each product is calculated on a 100-point scale and reflects results from our hands-on evaluations and

performance tests. A 90-point score is exceptional, while one in the high 70s is above average.

For desktops and notebooks, the PC WorldBench 4 score is a measure of how fast a machine can run a mix of common business applications as compared with our baseline machine, a Gateway Select 1200 with a 1.2-GHz

Athlon processor, 128MB of PC133 SDRAM, and a 20GB hard drive. For example, a PC that scores 120 is 20 percent faster than the baseline system. The support policies score represents vendor support policies (not shown on charts). See find.pcworld.com/15720 for additional details on how we compile charts for the Top 100.

155

**Top 10 DVD Drives**

More options: Plextor's PX-504UF, an external DVD drive with USB 2.0 and FireWire 400 interfaces, performs as well as its internal counterpart.

TOP 15 DESKTOP PCs

	POWER SYSTEM	Overall rating	Street price (7/25/03)	PC WorldBench 4 performance score ¹	Faster	Comments
1	Best BUY ABS Ultimate M5 find.pcworld.com/36536	92	Average \$2739	Windows XP Home	Outstanding 140	Powerful system has the chart's highest PC WorldBench 4 score and outstanding gaming scores; has a great speaker set. (★★★★★ Sept 03)
2	Dell Dimension 8300 find.pcworld.com/37289	86	Very expensive \$3807	Windows XP Home	Good 127	Pricey machine offers a beautiful LCD monitor and good speed. The case interior can be accessed easily, sans tools. (★★★★★)
3	Dell Dimension XPS find.pcworld.com/36542	86	Very expensive \$3807	Windows XP Professional	Good 127	Dell's first foray into gaming PCs, this model delivered smooth gaming performance; included hardware captures video. (★★★★★ Sept 03)
4	Micro Express MicroFlex 30A find.pcworld.com/34742	86	Inexpensive \$1999	Windows XP Professional	Good 131	Quick and reasonably priced, this system comes with a large LCD monitor and a graphics card with a TV tuner. (★★★★★ June 03)
5	Sys Technology Performance 3200+ find.pcworld.com/37517	84	Average \$2690	Windows XP Professional	Outstanding 136	Impressive speed and surround-sound speakers are the highlights of this unit; the LCD produced fine text but lackluster colors. (★★★★★)
6	@Xi Computer MTower 3000+ find.pcworld.com/35651	82	Inexpensive \$1993	Windows XP Home	Very good 133	This speedy system provides ample storage and memory, and carries a very appealing price. (★★★★★ Aug 03)
7	Acer Veriton 7600G find.pcworld.com/37520	80	Very inexpensive \$1937	Windows XP Professional	Fair 122	Business PC has network management software and a lock to guard against file transfers to external USB devices. (★★★★★ Sept 03)
Percent of overall rating ▶			10 percent	25 percent		

	VALUE SYSTEM	Overall rating	Street price (7/25/03)	PC WorldBench 4 performance score ¹	Faster	Comments
1	Best BUY ABS Bravado 2280 find.pcworld.com/35636	86	Average \$1139	Windows XP Home	Very good 127	Unit includes a roomy hard drive and a strong set of Logitech Z-340 speakers, for working with digital media. (★★★★★ Aug 03)
2	Dell Dimension 4600 find.pcworld.com/37328	83	Expensive \$1753	Windows XP Home	Very good 122	This system's graphics card produced solid frame rates in our tests, making it ideal for gaming. The LCD was also stellar. (★★★★★)
3	Polywell Poly 880NF2-2700 find.pcworld.com/32900	82	Expensive \$1665	Windows XP Home	Very good 128	Though this Poly earned high marks on 3D graphics tests, text on our review unit's monitor could have looked better. (★★★★★ Mar 03)
4	Micro Express MicroFlex 32A find.pcworld.com/37331	81	Average \$1399	Windows XP Professional	Outstanding 130	A strong performer, the 32A blazed through our 3D graphics tests, pumping out fast frame rates at 1280 by 1024 resolution. (★★★★★)
5	NuTrend Mega 2 find.pcworld.com/34121	81	Inexpensive \$889	Windows XP Home	Very good 129	Fastest value PC on the chart running Windows XP Home; neat, spacious case makes expansion easy. (★★★★★ May 03)
6	HP Pavilion A250e find.pcworld.com/36545	80	Expensive \$1659	Windows XP Home	Very good 128	This PC—formerly named the 775e—provides impressive performance and a memory card reader. (★★★★★ Sept 03)
7	Polywell Poly 880NF2-2800 find.pcworld.com/37334	79	Inexpensive \$993	Windows XP Home	Very good 127	A see-through window on the side of this system's brushed-aluminum case allows you to see the interior. (★★★★★)
8	Gateway E-6100 find.pcworld.com/37337	77	Average \$1339	Windows XP Professional	Good 116	Corporate system includes features for remote management, and it has an exceptionally roomy and neat interior. (★★★★★)
Percent of overall rating ▶			20 percent	20 percent		

Go to find.pcworld.com/10860 for details on PC World's Star Ratings.

¹ Performance word scores reflect comparisons of PCs in the same category (power or value) running the same operating system. For more details, see "Your Guide to the Top 100" on page 143.

² Total capacity in gigabytes (may represent multiple drives).

TEST
Center

FOR THE FIRST TIME, every system ranked in the power section of our chart uses at least a 3-GHz processor (or in AMD-speak, the "performance equivalent" of 3 GHz). Dell's Dimension 8300—equipped with Intel's latest CPU, a 3.2-GHz Pentium 4—makes its debut in second place. The Dimension 8300 earned a fairly strong PC

WorldBench 4 score of 127, matching its 3.06-GHz Pentium 4–based Dimension XPS sibling tested last month.

We especially liked the 18-inch LCD and the Altec Lansing ADA995 speaker set that came with our system.

Sys Technology's Performance 3200+,

Visit find.pcworld.com/37340 for reviews of all products tested this month and ranked in this chart.

BASE CONFIGURATION							Extra features ¹	Graphics quality	Setup and ease of use	Vendor's reliability/service
CPU	RAM (MB/type)	Hard drive ²	Monitor	Graphics	Case type ³					
2.2-GHz Athlon XP 3200+	1024/DDR400 SDRAM	160	19-inch CRT	128MB ATI Radeon 9800 Pro	Midsized tower		Good: DVD+R/RW drive, 16X DVD-ROM drive, memory card reader (CF, SD/MMC, SM), ⁴ Microsoft Works Suite 2002	Outstanding	Very good	Fair/Good
3.2-GHz Pentium 4	1024/DDR400 SDRAM	200	18-inch LCD	128MB ATI Radeon 9800 Pro	Midsized tower		Good: DVD+R/RW drive, 16X DVD-ROM drive, Microsoft Office XP Small Business Edition	Outstanding	Good	Good/Fair
3.06-GHz Pentium 4	1024/DDR400 SDRAM	240	18-inch LCD	128MB ATI Radeon 9800 Pro	Midsized tower		Very good: DVD+R/RW drive, 16X DVD-ROM drive, Microsoft Office XP SBE	Outstanding	Good	Good/Fair
2.167-GHz Athlon XP 3000+	512/DDR333 SDRAM	120	19-inch LCD	128MB ATI All-in-Wonder Radeon 9700 Pro	Midsized tower		Very good: DVD-R/RW drive, 52X/24X/52X CD-RW drive, Pinnacle Studio 8	Outstanding	Good	*/*
2.2-GHz Athlon XP 3200+	1024/DDR400 SDRAM	180	17-inch LCD	128MB Gigabyte GV-R98P128D	Midsized tower		Good: 52X/24X/52X CD-RW drive, 16X DVD-ROM drive, memory card reader (CF, SM), ⁴ wireless keyboard and mouse, Corel WordPerfect Productivity Pack	Very good	Good	*/*
2.167-GHz Athlon XP 3000+	1024/DDR400 SDRAM	120	19-inch CRT	128MB Sapphire Radeon 9700 Pro	Midsized tower		Fair: 12X DVD-ROM and 32X/10X/40X CD-RW combination drive, Lotus SmartSuite Millennium, Ulead VideoStudio 6	Very good	Good	*/*
3-GHz Pentium 4	1024/DDR333 SDRAM	80	17-inch LCD	128MB NVIDIA GeForce4 Ti 4200	Midsized tower		Fair: DVD-ROM and 48X/24X/48X CD-RW combination drive	Good	Fair	*/*
10 percent							10 percent	15 percent	5 percent	25 percent
BASE CONFIGURATION							Extra features ¹	Graphics quality	Setup and ease of use	Vendor's reliability/service
CPU	RAM (MB/type)	Hard drive ²	Monitor	Graphics	Case type ³					
1.83-GHz Athlon XP 2500+	512/DDR333 SDRAM	80	17-inch CRT	64MB EVGA E-GeForce Ti 4200	Midsized tower		Very good: DVD+R/RW drive, 16X DVD-ROM drive	Very good	Good	Fair/Good
2.8-GHz Pentium 4	512/DDR400 SDRAM	120	17-inch LCD	64MB ATI All-in-Wonder 9000 Pro	Minitower		Good: 16X DVD-ROM drive, 48X/24X/48X CD-RW drive, Microsoft Works 2003	Very good	Fair	Good/Fair
2.167-GHz Athlon XP 3000+	512/DDR333 SDRAM	160	19-inch CRT	128MB NVIDIA GeForce4 Ti 4600-based	Midsized tower		Outstanding: DVD-R/RW drive, 52X/24X/52X CD-RW drive, Lotus SmartSuite 9.7	Very good	Good	*/*
2.2-GHz Athlon XP 3200+	512/DDR433 SDRAM	120	19-inch CRT	128MB ATI Radeon 9700 Pro	Midsized tower		Good: 16X DVD-ROM drive, 52X/24X/52X CD-RW drive, memory card reader (CF, SD/MMC, SM) ⁴	Very good	Good	*/*
2-GHz Athlon XP 2400+	512/DDR400 SDRAM	60	17-inch CRT	64MB Asus V9180TD (GeForce MX 440-based)	Midsized tower		Good: 16X DVD-ROM drive, 48X/24X/48X CD-RW drive, Corel WordPerfect Office 11	Fair	Very good	*/*
2.167-GHz Athlon XP 3000+	512/DDR333 SDRAM	120	17-inch CRT	Integrated NVIDIA GeForce4 graphics using main memory	Minitower		Outstanding: DVD-R/RW drive, 40X/12X/40X CD-RW drive, memory card reader (CF, MS, SD/MMC, SM), ⁴ Quicken 2003	Fair	Good	Fair/Poor
2.08-GHz Athlon XP 2800+	512/DDR333 SDRAM	80	17-inch CRT	Integrated NVIDIA GeForce2 graphics using main memory	Midsized tower		Good: 16X DVD-ROM drive, 52X/24X/52X CD-RW drive	Fair	Good	*/*
2.4-GHz Pentium 4	256/DDR400 SDRAM	80	17-inch CRT	128MB NVIDIA GeForce FX 5200	Tower		Limited: 24X-48X CD-ROM drive, Intel LANdesk Client, chassis intrusion detection	Fair	Good	Fair/Fair
10 percent							10 percent	10 percent	5 percent	25 percent

¹ Vertical cases are towers (over 20 inches), midsized towers (15.5 to 20 inches), or minitowers (under 15.5 inches). Horizontal cases are desktops (5 inches or taller) or compacts (under 5 inches).

² Unless otherwise stated, systems come with a modem and network adapter.

³ CF = CompactFlash, MMC = MultiMediaCard, MS = Memory Stick, SD = SD memory card, SM = SmartMedia.

⁴ Insufficient data to give a rating.

at number five on the power list, turned in even stronger performance than the Dimension 8300. Its 2.2-GHz Athlon XP 3200+ processor helped it notch a score of 136 on PC WorldBench 4. In addition to its speed, this system has other distinguishing features, namely a built-in

memory card reader that accepts CompactFlash and SmartMedia cards, and a wireless keyboard and mouse. We weren't fond of the LCD that came with the system, however—its text looked sharp but its colors appeared washed out.

The value portion of the chart hosts ►



THE DELL Dimension 8300 includes eight USB 2.0 ports for easy hookup of USB devices.

four new entrants. Another Dell, the Dimension 4600, lands in the second spot. Like its power sibling, this Dimension performed respectably, with a PC WorldBench 4 score of 122. We especially liked the 17-inch LCD that accompanied our system; colors looked bright, and we didn't see any stuttering of the on-screen action during a game of Return to Castle Wolfenstein.

The Micro Express MicroFlex 32A, at number four, achieved the highest PC WorldBench 4 score (130) of the value group. It also whizzed through our gaming tests, churning out fast frame rates at 1280 by 1024 resolution and 32-bit color. Paired with its 19-inch Samsung SyncMaster 955DF CRT monitor, which rendered sharp text and nuanced colors, this system would be ideal for heavy gaming.

An inexpensive system from Polywell,

the Poly 880NF2-2800, showed sprightly performance in our tests. It's a well-rounded, home-oriented PC that includes an impressive 17-inch CRT monitor, and lots of room for upgrades. However, we were disappointed with its Cambridge SoundWorks SW320 speakers, whose audio tended to sound tinny.

The E-6100, meanwhile, is Gateway's latest corporate PC. With features such as gigabit ethernet networking, remote management software, and chassis intrusion detection, this computer would be suitable for large offices. But because it is a business system, it doesn't automatically come with features that are de rigueur on multimedia PCs—for instance, our test machine had a CD-ROM drive instead of a DVD-ROM or CD-RW drive.

IBM's ThinkCentre A50p would be a good fit for many offices. It includes tools

such as Rapid Restore Ultra, a utility that restores the system to its original state. Another extra, ImageUltra, helps IS managers deploy customized drive images networkwide—a potential time-saver when the staff is rolling out the A50p to multiple users. However, subpar performance in our PC WorldBench 4 tests, owing to a pedestrian 2.4-GHz Pentium 4 processor, kept the ThinkCentre A50p from making the chart. (You can configure the A50p with a faster processor, though.) See find.pcworld.com/37343 for a complete review.

We also evaluated a new PC from Sony, the VAIO PCV-RS310, but unfortunately the company changed the configuration of this system before our review was complete, so the model was ineligible for the chart. Go to find.pcworld.com/37346 to read a full review of this machine. ■

TECH TREND

Trial vs. Full Version: The Software Conundrum

CHOOSING THE RIGHT SOFTWARE when you purchase your PC can be a perplexing task, in large part because computer vendors don't always clearly state what you're getting. For instance, Dell offers no fewer than five different choices of antivirus software—and some of them are free trial versions, while others are the more costly, full versions of applications. How do you pick?

When you buy a Dell desktop system, you can get a free trial version of Norton AntiVirus that offers all the functionality of the full program for 90 days. At the end of the 90 days, you can purchase a \$25 virus-signature-update subscription good for an additional year (giving you a total of 15 months of current virus protection). That's a better deal than paying \$45 for the full product, which comes with 12 months of updates.

If you're thinking about renewing your signature subscription at the end of the period, however, you'll pay less for doing so with the full version (\$15 per year) than with the trial (\$25 per year)—a fact that Dell does not tell you. With the full version, if you were to keep renewing your signature-update subscription year after year, you'd eventually come out ahead. But that would be poor economy, with your antivirus engine becoming progressively more obsolete and less able to protect against new threats. So the best way to go is to get the trial version,

upgrade it, and—just before it expires—buy the next full version.

The confusion doesn't stop with antivirus software—or with Dell. As do many other computer vendors, Gateway includes Roxio's Easy CD Creator with the optical drives in its systems. But unless you do some research, you may not know that you aren't getting the latest and greatest version, Easy CD & DVD Creator 6, which adds a photo editor, a sound editor, and a label creator. Gateway doesn't offer the full version of the Creator 6 program, so if you want it, you'll have to buy it at its full price elsewhere.

Gateway also provides a bewildering mix of low- to high-end video editing programs. The program that ships with your system depends on what type of rewritable DVD drive you choose. To its credit, however, Gateway does have a link on its Web site that explains the differences among the programs and lists what you get with each.

Many other system vendors aren't as specific as they should be about their offerings. Our advice: Be wary about any software carrying a "Limited," "Special," or other designation that distinguishes it from how it appears on the software vendor's Web site. Ask the computer vendor what the differences are, and choose accordingly. For most people, the limited versions are all they need. But power users will want the full package.





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Microsoft® Windows® XP Media Center Edition CD & Manual are included
Intel® Pentium® 4 Processor 3.0GHz w/ HT & 800FSB
Intel® D875PB Chipset Mainboard support Dual Channel DDR
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ZT PRO Media Center PC X6096

Microsoft® Windows® XP Media Center Edition CD & Manual are included
Intel® Pentium® 4 Processor 2.40GHz w/ HT & 800FSB
Intel® D865PE Chipset Mainboard support Dual Channel DDR
Crucial Micron 512MB PC2700 Dual Channel DDR Memory
Seagate® 80GB 7200RPM Serial ATA-150 Hard Drive
52X32X52 CD-RW Drive
16X DVD ROM Drive
Creative Labs Sound Blaster Audigy w/ IEEE 1394 Firewire Sound Card
USR 56K V.90 Fax Modem (Optional \$19.00)
Integrated Intel® Pro/1000 Gigabit LAN
64MB ATI All-in-Wonder Radeon 7500 Video Card
AHANIX D.Vine 4 Aluminum Case w/ 450Watt Power Supply
w/ Vacuum Fluorescent Display will show case temperature and email status
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ZT Group recommends Microsoft® Windows® XP Media Center Edition



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TOP 15 NOTEBOOK PCs

	POWER NOTEBOOK	Overall rating	Street price (7/24/03)	PC WorldBench 4 performance score ¹	Faster	Comments
1	Best Buy IBM ThinkPad T40 find.pcworld.com/34817	89	Very expensive \$3099	Windows XP Professional	Outstanding 124	This lightweight laptop provides dual pointing devices, numerous wireless-networking options, and long battery life. (★★★★★ June 03)
2	Dell Latitude D600 find.pcworld.com/36077	87	Inexpensive \$1986	Windows XP Professional	Outstanding 122	Midweight machine has legacy ports, but unappealing sound and a springy keyboard, as well. (★★★★☆ Aug 03)
3	Amax Elite 6053M find.pcworld.com/37025	84	Inexpensive \$1929	Windows XP Professional	Outstanding 123	Powerful notebook squeezes plentiful ports, both modern and legacy, into a slim profile. (★★★★☆)
4	Toshiba Tecra M1 find.pcworld.com/37022	84	Very expensive \$3049	Windows XP Professional	Good 113	Stylish notebook in black and silver boasts phenomenal battery life, powerful speakers, and many upgrade options via its multipurpose bay. (★★★★★)
5	MPC TransPort T2000 find.pcworld.com/37028	83	Average \$2575	Windows XP Professional	Outstanding 121	Slim blue-and-silver notebook has speed, handy audio controls, all legacy ports, and a biometric fingerprint reader. (★★★★☆)
6	Gateway 600S find.pcworld.com/35624	82	Inexpensive \$2040	Windows XP Professional	Average 107	Two modular bays can hold optical drives, batteries, or extra hard drives; 802.11 wireless—in the a, b, or g flavor—is optional. (★★★★☆ July 03)
7	Dell Inspiron 8500 find.pcworld.com/35621	77	Average \$2504	Windows XP Home	Average 105	Elegant blue-and-silver notebook has an extrawide screen, but its keyboard feels flimsy. Works with an optional port replicator. (★★★★☆ July 03)
Percent of overall rating ▶			15 percent	20 percent		

	VALUE NOTEBOOK	Overall rating	Street price (7/24/03)	PC WorldBench 4 performance score ¹	Faster	Comments
1	Best Buy Chem USA ChemBook 2300 find.pcworld.com/37031	82	Inexpensive \$1349	Windows XP Home	Outstanding 122	Low-cost notebook is ready for the road with modest weight, long battery life, and built-in Wi-Fi. (★★★★☆)
2	Gateway 450X find.pcworld.com/35312	80	Expensive \$1745	Windows XP Professional	Very good 117	A \$58 price drop brings this one-bay power notebook with a great keyboard to our value list. (★★★★☆ July 03)
3	Averatec 3150P find.pcworld.com/36197	76	Very inexpensive \$1025	Windows XP Professional	Average 94	Thin, light, and wireless ready, this bargain portable is good for the road. It's relatively slow, but fine for basic computing and e-mail. (★★★★☆ Sept 03)
4	Amax Elite 6033D find.pcworld.com/35318	75	Expensive \$1795	Windows XP Professional	Very good 115	Unit designed for convenience includes slots for an SD card and a Memory Stick, and an optical drive on the front. (★★★★☆ July 03)
5	Dell Inspiron 5100 find.pcworld.com/36083	74	Expensive \$1814	Windows XP Home	Very good 117	Distinctive blue-and-silver laptop's hard drive and memory slots are easy to access. (★★★★☆ Aug 03)
6	IBM ThinkPad G40 find.pcworld.com/36206	74	Inexpensive \$1214	Windows XP Professional	Poor 84	Basic desktop replacement offers great IBM keyboard, but meek sound and few frills. (★★★☆☆ Sept 03)
7	Premio Kaypro A1100 find.pcworld.com/36200	73	Average \$1415	Windows XP Professional	Good 108	Heavy unit has good sound, a combo drive on the front, a fixed floppy drive, and all legacy ports (parallel, PS/2, and serial). (★★★★☆ Sept 03)
8	Sharp Actius MM10 find.pcworld.com/36575	62	Average \$1499	Windows XP Home	Poor 50	This notepad-size model can sync data with a desktop via its docking cradle. It has limited connections and a small keyboard, though. (★★★☆☆ Aug 03)
Percent of overall rating ▶			20 percent	15 percent		

Go to find.pcworld.com/10860 for details on PC World's Star Ratings.

¹ Performance word scores reflect comparisons of PCs in the same category (power or value). For more details, see "Your Guide to the Top 100" on page 143.

² Except where noted, all Intel CPUs are SpeedStep chips, which run at a slower speed on battery power. (We performance-test all notebooks plugged in.)

³ Word score reflects both listed and unlisted features. Unless otherwise noted, all notebooks have a built-in modem and network adapter.

TEST
Center

THREE FULL-FEATURED PORTABLES in slender cases debut on the power side. At number three, the Amax Elite 6053M measures just over an inch thick and weighs 6.3 pounds without its power adapter. One minor complaint: The 3.25-hour battery life seems brief for a notebook with Intel's power-conserving 1.6-GHz Pentium M

processor. The number four Toshiba Tecra M1 is a bit thicker at about 1.5 inches, but it's this month's endurance champ, running 6.5 hours on one charge.

The MPC TransPort T2000, in fifth place, is the flashiest newcomer due to its blue-and-silver case colors and built-in

Visit find.pcworld.com/37238 for reviews of all products tested this month and ranked in this chart.

BASE CONFIGURATION							Extra features ¹	Overall design	Battery life (hours:min) ⁴	Average weight (pounds) ⁵	Vendor's reliability/service
CPU ²	Screen (inches)	RAM (MB)	Hard drive (GB)	Pointing device	Multi-purpose bays						
1.6-GHz Pentium M	14.1	512	80	Touchpad, eraserhead	1	Very good: 8X DVD-ROM and 16X/10X/24X CD-RW combo drive, built-in 802.11a/b Wi-Fi and Bluetooth	Outstanding	Outstanding/ 6:23	Light/ 6.2	Good/ Good	
1.6-GHz Pentium M	14.1	512	40	Touchpad, eraserhead	1	Very good: 8X DVD-ROM and 24X/10X/24X CD-RW combo drive, built-in 802.11b Wi-Fi, Smart Card reader	Good	Good/ 3:26	Average/ 6.5	Fair/ Fair	
1.6-GHz Pentium M	15	512	40	Touchpad	1	Good: 8X DVD-ROM and 24X/10X/24X CD-RW combo drive, built-in 802.11b Wi-Fi, SD memory card slot, FireWire port	Good	Good/ 3:15	Average/ 7.1	✓	
1.6-GHz Pentium M	14.1	512	40	Touchpad, eraserhead	1	Very good: DVD-R/RW/RAM drive, built in 802.11b Wi-Fi, SD card slot, FireWire port, gigabit ethernet	Very good	Outstanding/ 6:29 ⁷	Average/ 7.1	Good/ Fair	
2.5-GHz Pentium 4-M	14.1	512	60	Touchpad	1	Very good: 8X DVD-ROM and 24X/10X/24X CD-RW combo drive, built-in 802.11b Wi-Fi, FireWire port, Microsoft Office XP SBE	Very good	Fair/ 2:53	Average/ 6.8	✓	
2.4-GHz Pentium 4-M	15.7	512	60	Touchpad	2	Very good: DVD-R/RW drive, FireWire port, Microsoft Works 7	Outstanding	Good/ 3:01	Very heavy/ 9.8	Good/ Fair	
2.4-GHz Pentium 4-M	15.4 (wide)	512	40	Touchpad, eraserhead	1	Very good: DVD+R/RW drive, 16MB USB drive, FireWire port, WordPerfect Productivity Pack, Quicken 2002 New User Edition	Very good	Fair/ 2:19	Heavy/ 8.6	Fair/ Fair	
5 percent							10 percent	10 percent	5 percent	10 percent	25 percent

BASE CONFIGURATION							Extra features ¹	Overall design	Battery life (hours:min) ⁴	Average weight (pounds) ⁵	Vendor's reliability/service
CPU ²	Screen (inches)	RAM (MB)	Hard drive	Pointing device	Multi-purpose bays						
1.4-GHz Pentium M	14.1	512	40	Touchpad	1	Good: 8X DVD-ROM and 16X/8X/24X CD-RW combo drive, built-in 802.11b Wi-Fi, FireWire port	Fair	Outstanding/ 4:49	Light/ 6.3	✓	
1.5-GHz Pentium M	15	256	40	Touchpad	1	Very good: 8X DVD-ROM and 24X/10X/24X CD-RW combo drive, FireWire port, Microsoft Works 2003	Very good	Very good/ 3:49	Average/ 7.4	Good/ Fair	
1.4-GHz Mobile Athlon XP-M 1600+	12.1	256	30	Touchpad	0	Good: 8X DVD-ROM and 16X/10X/24X CD-RW combo drive, built-in 802.11b Wi-Fi	Fair	Fair/ 2:50	Very light/ 5.3	✓	
2.8-GHz Pentium 4*	15	512	40	Touchpad	1	Very good: 8X DVD-ROM and 16X/10X/24X CD-RW combo drive, built-in 802.11b Wi-Fi, FireWire port, Microsoft Works 2003	Very good	Limited/ 1:56	Heavy/ 8.5	✓	
2.67-GHz Pentium 4*	15	512	40	Touchpad	0	Very good: 8X DVD-ROM and 24X/10X/24X CD-RW combo drive, 802.11b Wi-Fi, FireWire port, WordPerfect Productivity Pack	Fair	Limited/ 1:48	Very heavy/ 9.5	Fair/ Fair	
2-GHz Celeron*	14.1	256	20	Eraserhead	0	Fair: 8X DVD-ROM drive, Lotus SmartSuite Millennium	Fair	Very good/ 3:59	Very heavy/ 9.7	Good/ Good	
2-GHz Pentium 4*	15	512	40	Touchpad	1	Good: 8X DVD-ROM and 8X/4X/24X CD-RW combo drive, FireWire port	Fair	Fair/ 2:25	Heavy/ 8.8	✓	
1-GHz Crusoe TM5800	10.4	256	15	Touchpad	0	Fair: external 8X DVD-ROM and 24X/10X/24X CD-RW combo drive, built-in 802.11b Wi-Fi	Fair	Fair/ 2:42	Very light/ 4.2	✓	
5 percent							10 percent	10 percent	5 percent	10 percent	25 percent

* Unless otherwise noted, all notebooks come with a lithium ion battery.

³ Includes computer, AC adapter, power cord, optical drive, and floppy drive (if offered).

⁴ Insufficient data to give a rating.

⁵ We typically test at a notebook's highest power-conserving setting, but this model's "Super Long Life" and "Long Life" options resulted in an unacceptably dim screen. Instead, we tested at the default "Normal" power setting.

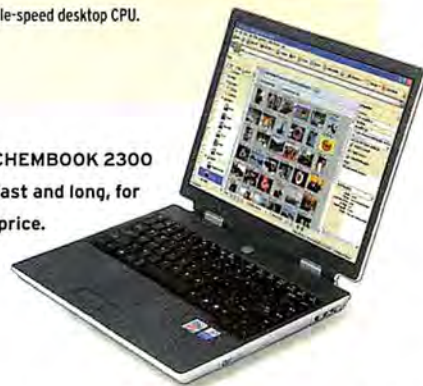
* Single-speed desktop CPU.

fingerprint reader, a rare security perk. Just an inch thick, the T2000 still makes room for legacy features such as a floppy drive for the modular bay and a PS/2 port with a Y-cable for attaching an old-style mouse and keyboard.

Our new value Best Buy, Chem USA's

ChemBook 2300 is both a sprinter and a distance runner, as it posted a PC World-Bench 4 score of 122 (plugged in) and ran for 4.8 hours on one battery charge. So we can forgive a few clumsy design elements on this 6.3-pound consumer laptop, such as its somewhat stiff shortcut buttons. ■

THE CHEMBOOK 2300 runs fast and long, for a low price.



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TOP 5 PRINTERS

TOP 100

TEST
Center

Visit find.pcworld.com/37187 for additional reviews.

	MULTIFUNCTION PRINTER	Street price (7/18/03)	Overall rating	Speed for plain text/full-page graphics (ppm)	Print quality for text/color graphics	Cost/page yield per color cartridge	Comments
1	Best Buy Canon MultiPass MP730 find.pcworld.com/35018	\$400	95	6.6/1.3	Very good/ Very good	\$12/440	FEATURES: Rated 13 ppm monochrome/9 ppm color. USB 1.1 port, 4800-by-1200-dpi maximum print resolution, 150 sheets input and output, stand-alone fax. SUMMARY: The fastest printer and quickest copier here, the MP730 printed the sharpest line art, but its monochrome scans were the least attractive. (★★★★☆ June 03)
2	Lexmark X6170 NEW find.pcworld.com/36935	\$250	91	6.5/0.4	Good/ Fair	\$35/450	FEATURES: Rated 19 ppm monochrome/15 ppm color. USB 1.1 port, optional ethernet port, 4800-by-1200-dpi maximum print resolution, 100 sheets input, 50 sheets output, stand-alone fax. SUMMARY: The X6170 scanned quickly and earned a Very Good for scan quality, but printouts of line art exhibited obvious banding. (★★★★☆)
3	HP PSC 2210 find.pcworld.com/35027	\$300	85	3.8/0.6	Very good/ Very good	\$35/391	FEATURES: Rated 7 ppm monochrome/4 ppm color. USB 1.1 port, 4800-by-1200-dpi maximum print resolution, 100 sheets input, 50 sheets output, stand-alone fax. SUMMARY: This unit printed very attractive photos and crisp line art. Monochrome scans showed more detail than color scans. (★★★☆☆ June 03)
4	Brother MFC-4420c find.pcworld.com/35036	\$200	79	2.8/0.5	Fair/ Good	\$14/400	FEATURES: Rated 13 ppm monochrome/11 ppm color. USB 2.0 port, 2400-by-1200-dpi maximum print resolution, 100 sheets input, 30 sheets output, stand-alone fax. SUMMARY: Slow to print text (which appeared fuzzy), but line art looked crisp. Created the best color scans and very detailed monochrome scans. (★★★☆☆ June 03)
5	HP PSC 2175 NEW find.pcworld.com/36482	\$200	75	4.0/0.6	Good/ Very good	\$34/391	FEATURES: Rated 18 ppm monochrome/13 ppm color. USB 2.0 port, 4800-by-1200-dpi maximum print resolution, 100 sheets input, no output tray, no fax. SUMMARY: Printed high-quality glossy photos as well as attractive color graphics. Produced good-looking color scans and the most detailed monochrome scans. (★★★★☆)

HOW WE TEST: Data based on tests designed and conducted by the PC World Test Center. All rights reserved. Go to find.pcworld.com/37355 for a full description of our test methodology. **CHART NOTES:** The overall ratings for color ink jet multifunction printers are based on image quality (25 percent), performance (20 percent), features (20 percent), price (15 percent), ease of use (10 percent), and support (10 percent). Scans were of a 2-by-2-inch color photo at 1200 dpi and a black-and-white text document at 300 dpi. All units have flatbed scanners. See find.pcworld.com/10860 for details on PC World's Star Ratings.

TEST
Center

MOST INK JET MULTIFUNCTION PRINTERS we've tested performed well overall but didn't excel at every function or handle them all at a quick pace. Some of the MFPs produced high-quality prints or scans rivaling those made by stand-alone devices, but none of the three we tested this month generated very attractive photocopies.

(Go online to find.pcworld.com/37187 to find each model's scores for copying and scanning image quality.)

Our current Best Buy, Canon's MultiPass MP730, is the fastest copier and printer—for both text and color graphics—on the chart. It produced very detailed prints of line art and attractive color scans, but its monochrome scans looked less detailed than those from the other MFPs in the Top 5. Both the MP730 and the new, fifth-place HP PSC 2175 printed attractive color glossies that rivaled those made by dedicated photo printers. The PSC 2175 also generated the best-looking monochrome scans. It's the only MFP on the chart that doesn't send faxes.

Hewlett-Packard's PSC 2210 at number three printed very attractive color photos and very sharp text, but it fell a little flat on color scan quality. The new Lexmark X6170's color scans scored slightly higher than the PSC 2210's, but the second-place X6170 took less than half as long to scan the pages at 1200 dpi. Though the X6170's black-and-white scans looked sharp, colors appeared cloudy in graphics printouts, and skin tones in color glossies sustained a slightly gray cast.

ONE THAT MISSED

OF THE THREE new MFPs we tested this month, only the Dell A920 missed the chart. The A920's print quality trailed that



MARK YOUR FAVORITE PHOTOS on the printed proof sheet. The HP PSC 2175 will scan it and then print your selections.

of all the other models we tested, showing marked banding on our line-art test, for example. Textures on color glossies looked spotty and lacked fine detail, though skin tones were realistic. The A920 scanned color images at an impressive clip (slightly faster than our Best Buy) and generated good-looking scans, but that wasn't enough to gain it a spot on the chart. Nonetheless, you won't blanch at the price: The A920 costs only \$89. ■

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TOP 10 MONITORS

Visit find.pcworld.com/37508 for reviews of all products tested this month and ranked in this chart.

THOUGH THE PRICES ON OUR LAST 17-inch LCD monitors chart were already low, they've continued their tumble, as the average price now is \$50 lower than it was in the May issue. Luckily, image quality isn't suffering: Our two top displays, both new, offer exceptional performance and a host of

features. With rich graphics and easy-to-use controls, the Hewlett-Packard L1702 earns the number one position and a Best Buy award. IBM's ThinkVision L170p slides into the second Best Buy spot thanks to its easy-to-use controls and its top scores on our lab tests of graphics and text.

	17-INCH LCD MONITOR	Street price (7/28/03)	Overall rating	Quality of text/graphics	Comments
1	Best Buy Hewlett-Packard L1702 find.pcworld.com/37496 NEW	\$429	89	Very good/ Very good	FEATURES: 15.9 by 7.4 by 14.9 inches, 13.2 pounds, analog video input, tilt adjustment, three-year warranty, 24-hour daily toll-free tech support. SUMMARY: A slender, silver model, the L1702 displays rich color graphics. It has only three control buttons, and making adjustments didn't require digging in menus or a trip to the manual. The unit includes a microphone input jack, but no USB ports or headphone jack. (★★★★☆)
2	Best Buy IBM ThinkVision L170p find.pcworld.com/37499 NEW	\$539	88	Very good/ Outstanding	FEATURES: 15.7 by 9.3 by 14.1 inches, 12.6 pounds, dual video inputs, tilt, swivel, and height adjustment, three-year warranty, 24-hour daily toll-free tech support. SUMMARY: IBM's slick-looking display outperformed the others in graphics tests. On-screen controls are easy to access and navigate, and colors looked great out of the box, but you can't adjust individual red, green, and blue levels in digital mode. (★★★★☆)
3	Samsung SyncMaster 172B find.pcworld.com/34136	\$529	86	Very good/ Very good	FEATURES: 15.1 by 8.5 by 15.6 inches, 10.3 pounds, analog video input, tilt and height adjustment, three-year warranty, 24-hour daily toll-free tech support. SUMMARY: This stylish, thin-bezeled unit was among the best at rendering graphics on our tests, but some newer models displayed better-looking text. The built-in speakers emit so-so sound. Extras include a thumbwheel volume control. (★★★★☆ May 03)
4	Cornea C1704 find.pcworld.com/37502 NEW	\$449	83	Very good/ Good	FEATURES: 15.9 by 7.1 by 16.5 inches, 9.5 pounds, analog video input, tilt adjustment, three-year warranty, 10-hour weekday toll-free tech support. SUMMARY: Boasting the second-best text scores on this month's chart, Cornea's display is ideal for business users. This model also offers easy-to-use controls that allow you to make very fine, granular adjustments. (★★★★☆)
5	Hyundai ImageQuest 017 find.pcworld.com/34139	\$429	82	Very good/ Good	FEATURES: 15.6 by 7.9 by 16.3 inches, 10.9 pounds, dual video inputs, tilt and height adjustment, three-year warranty, 8-hour weekday toll-free tech support. SUMMARY: This slim silver screen offers midrange performance in graphics and displays great-looking text. Loads of extras—including built-in speakers, USB ports, and dual video inputs—make this a great value for the price. (★★★★☆ May 03)
6	NEC MultiSync LCD1760V find.pcworld.com/34133	\$530	82	Very good/ Good	FEATURES: 14.7 by 7.7 by 15.1 inches, 11.7 pounds, analog video input, tilt and height adjustment, three-year warranty, 24-hour daily toll-free tech support. SUMMARY: This monitor's silver-framed bezel is easy on the eyes. Text appeared sharp on business-document screens, but graphics looked excessively bright. Downloadable software helps you adjust on-screen images via mouse and keyboard. (★★★★☆ May 03)
7	Sony SDM-HS73 find.pcworld.com/37505 NEW	\$549	82	Very good/ Very good	FEATURES: 17.4 by 8.5 by 15.9 inches, 12.9 pounds, analog video input, tilt adjustment, TCO'95-compliant, three-year warranty, 24-hour daily toll-free tech support. SUMMARY: Sony's thick, semigloss black bezel produces an annoying glare, but the display earned strong scores in both text and graphics. The monitor also offers advanced controls to adjust color temperature and backlight intensity. (★★★★☆)
8	ViewSonic VG700 find.pcworld.com/34202	\$445	80	Good/ Good	FEATURES: 16.6 by 7.5 by 16.1 inches, 17.2 pounds, analog video input, tilt adjustment, three-year warranty, 24-hour daily toll-free tech support. SUMMARY: This cool-looking LCD displayed crisp text. Reds and yellows looked warm, but facial tones had a pinkish cast. Extensive on-screen controls and an intuitive menu design make adjustments easy. (★★★★☆ May 03)
9	Samsung SyncMaster 172T find.pcworld.com/34185	\$599	80	Good/ Good	FEATURES: 15.2 by 8.5 by 15.6 inches, 10.3 pounds, dual video inputs, tilt and height adjustment, TCO'95-compliant, three-year warranty, 24-hour daily toll-free tech support. SUMMARY: Svelte silver-tone model's unique hinged folding base allows it to extend up and out. Colors looked bold and bright on test photo screens, and text quality shone on business-document screens. (★★★★☆ May 03)
10	ViewSonic VE175 find.pcworld.com/34199	\$419	79	Good/ Fair	FEATURES: 16.3 by 9.1 by 16.5 inches, 13.6 pounds, analog video input, tilt adjustment, three-year warranty, 24-hour daily toll-free tech support. SUMMARY: Appealingly priced, this no-frills model lacks the high style of many others, including its VG700 sibling. In our tests small letters and fonts were legible on Web and document screens. Colors looked wan compared with other displays, however. (★★★★☆ May 03)

FOOTNOTE: * Includes both digital (DVI) and analog inputs. DVI requires a graphics card with a DVI digital output, which we use to test all monitors that offer DVI. **HOW WE TEST:** Judges rate how well each monitor displays 13 text and graphics images at a native resolution of 1280 by 1024. Some screens are from DisplayMate for Windows (www.displaymate.com). See find.pcworld.com/34613 for testing details. Data based on tests designed and conducted by the PC World Test Center. All rights reserved. **CHART NOTES:** Overall rating is based on text and graphics quality (20 percent each), price (25 percent), features and ease of use (20 percent), and support (15 percent). Monitors are TCO'99-compliant unless otherwise noted. With LCD monitors, the entire screen area is viewable. Dimensions (given as width by depth by height) include the base. See find.pcworld.com/10860 for details on PC World's Star Ratings.

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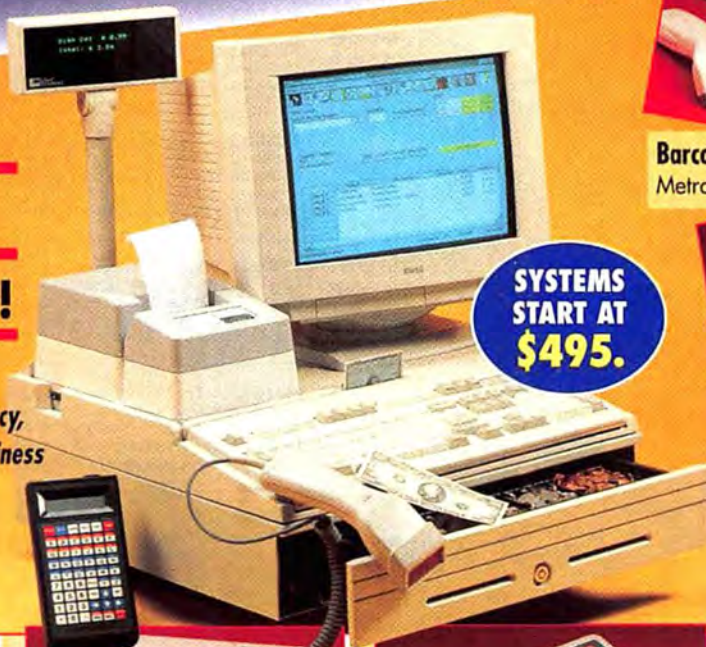
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TOP 10 DVD DRIVES

Visit find.pcworld.com/37562 for reviews of all products tested this month and ranked in this chart.

DVD BURNER PRICES continue to fall. Of the seven drives that make repeat appearances on this month's DVD burner chart, five cost less than they did a month ago. And our new Best Buy—Plextor's \$300 PX-504UF—is also one of the least-expensive external models we've seen. But an internal unit,

the fourth-place, \$180 AOpen DVD+RW/+R DRW4410, is the chart's cheapest. Though it is supposed to support 4X DVD+RW write speeds, in our tests it mustered performance akin to only a 2.4X-rated DVD+RW drive. AOpen says a software patch on its Web site should improve performance.

	REWRITABLE DVD DRIVE	Street price (8/1/03)	Overall rating	Performance	Write speed/rewrite speed	Comments
1	Best Buy Plextor PX-504UF find.pcworld.com/37448 NEW	\$300	86	Very good	4:03/8:13	FEATURES: External USB 2.0 and FireWire 400 drive, 4X/2.4X DVD+R/RW, 16X/10X CD-R/RW, 2MB buffer; Roxio DVD Builder, Easy CD Creator 5 DVD Edition 5.3, DirectCD 5.3, and PhotoSuite 5 LE; CyberLink Power2Go; Roxio Toast 5 Lite; 11-hour weekday toll-free support. SUMMARY: Sleek, silver chassis gives this dual-interface external model an attractive look. (★★★★☆)
2	Best Buy TDK Indi DVD 440N find.pcworld.com/36668	\$270	86	Very good	4:04/7:56 4:20/13:00 ¹	FEATURES: Internal IDE drive, 4X/2X DVD-R/RW, 4X/2.4X DVD+R/RW, 16X/10X CD-R/RW, 2MB buffer; Roxio DVD Builder, Easy CD & DVD Creator 6, Drag-to-Disc 6, PhotoSuite Lite, and DVD Max; TDK AudioCentral; 10.5-hour daily toll-free support. SUMMARY: Great performance, excellent documentation, and strong support policies highlight this dual-format drive. (★★★★☆ Sept 03)
3	Memorex Dual Format DVD Recorder find.pcworld.com/36671	\$265	85	Very good	4:39/7:14 4:48/8:47 ¹	FEATURES: Internal IDE drive, 4X/2X DVD-R/RW, 4X/2.4X DVD+R/RW, 16X/10X CD-R/RW, 2MB buffer; Roxio DVD Builder 1.1, Easy CD & DVD Creator 6.1, Drag-to-Disc 6.1, VideoWave Movie Creator 6, PhotoSuite 5 SE, and DVD Max Player; 9-hour weekday toll-free support. SUMMARY: Dual-format model outperforms TDK's Indi DVD 440N on DVD+RW. Includes a versatile software bundle. (★★★★☆ Sept 03)
4	AOpen DVD+RW/+R DRW4410 find.pcworld.com/37445 NEW	\$180	83	Very good	5:58/9:02	FEATURES: Internal IDE drive, 4X/4X DVD+R/RW, 24X/10X CD-R/RW, 2MB buffer; MediaStream NeoDVD 4.5, Ahead Nero Express 5.5 and InCD 4, CyberLink Power2Go 4, Ulead VideoStudio 7; 9-hour weekday toll-call support. SUMMARY: Low price and additional 2-year parts warranty set this unit apart. But in our tests, the drive's rewrite performance was more like a 2.4X-rated DVD+RW. (★★★★☆)
5	CenDyne Dual-Format Internal DVD Recorder find.pcworld.com/37481 NEW	\$225	83	Very good	6:28/7:20 6:35/8:10 ¹	FEATURES: Internal IDE drive, 4X/2X DVD-R/RW, 4X/2.4X DVD+R/RW, 16X/10X CD-R/RW, 2MB buffer; Sonic MyDVD 4.5, RecordNow DX 4.6, DLA 4.034, CinePlayer, and SimpleBackup; 12-hour weekday and 4-hour Saturday toll-call support. SUMMARY: The least-expensive dual-format drive on the chart, this model features solid all-around performance, but has mediocre documentation. (★★★★☆)
6	Sony DRU-510A find.pcworld.com/35495	\$285	82	Very good	6:51/4:40 7:43/8:43 ¹	FEATURES: Internal IDE drive, 4X/2X DVD-R/RW, 4X/4X DVD+R/RW, 24X/16X CD-R/RW, 8MB buffer; Sonic MyDVD 4.5, Veritas RecordNow DX 4.6 and DLA 3.57, Veritas Simple Backup, CyberLink Power2Go, ArcSoft ShowBiz; 12-hour weekday and Saturday toll-free support. SUMMARY: Lightning-fast drive for burning DVD+RW discs using packet writing—if you can find 4X DVD+RW media. (★★★★☆ Jul 03)
7	Pioneer DVR-A05 find.pcworld.com/32642	\$190	82	Very good	6:43/36:27	FEATURES: Internal IDE drive, 4X/2X DVD-R/RW, 16X/8X CD-R/RW, 2MB buffer; Roxio Easy CD Creator Basic 5.3, Pinnacle InstantWrite 4, ArcSoft ShowBiz, Sonic MyDVD 4, Sonic CinePlayer; 10.5-hour weekday toll-free support. SUMMARY: Inexpensive single-format model's bundled packet-writing software requires you to do a time-consuming full-disc format before burning to DVD+RW. (★★★★☆ Feb 03)
8	Hewlett-Packard DVD Writer Dvd300i find.pcworld.com/34454	\$250	82	Good	3:59/8:44	FEATURES: Internal IDE drive, 4X/2.4X DVD+R/RW, 16X/10X CD-R/RW, 2MB buffer; ArcSoft ShowBiz DVD 1.3, Veritas RecordNow 4.56 and DLA 3.59, Veritas Simple Backup, Cyberlink Power2Go, ArcSoft Multimedia Email, HP Memories Disc Creator; 24-hour daily toll-free support. SUMMARY: Still the fastest we've seen at authoring a DVD movie; includes software for data backups. (★★★★☆ May 03)
9	Toshiba SD-R5112 find.pcworld.com/36683	\$215	82	Very good	4:21/9:14	FEATURES: Internal IDE drive, 4X/2X DVD-R/RW, 16X/10X CD-R/RW, 2MB buffer; CyberLink PowerDirector Pro 2.5 and PowerDVD XP 4, Pinnacle InstantCD/DVD 7, VOB InstantWrite; 11-hour weekday toll-call support. SUMMARY: Good performer overall, but single-format drive is sluggish on rewritable performance. Separate discs for each included app makes for a clunky installation. (★★★★☆ Sept 03)
10	Plextor PX-504A find.pcworld.com/36686	\$235	80	Very good	4:03/8:17	FEATURES: Internal IDE drive, 4X/2.4X DVD+R/RW, 16X/10X CD-R/RW, 2MB buffer; Roxio DVD Builder, Easy CD Creator 5 DVD Edition 5.3, DirectCD 5.3, and PhotoSuite 5 LE, CyberLink Power2Go; 11-hour weekday toll-free support. SUMMARY: An excellent DVD+R performer, but lags on DVD+RW. For \$10 less, you can get an internal dual-format drive like CenDyne's fifth-ranked model. (★★★★☆ Sept 03)

FOOTNOTE: ¹ Results are for DVD+R/RW and then for DVD-R/RW. **HOW WE TEST:** We test drives under Windows XP Home on PCs with 1.67-GHz Athlon XP 2000+ CPUs and 512MB of DDR SDRAM, using the DVD software supplied by the vendor, and media from the vendor or Verbatim. Some vendors may change drive suppliers midstream; our results reflect the configuration tested at time of review. **CHART NOTES:** Write speed is the time (in minutes:seconds) to write two 10-minute video files to DVD; rewrite speed, the time (in minutes:seconds) to format a blank rewritable DVD disc and to copy 1.18GB of data to the disc. Overall rating is based on performance (35 percent), price (25 percent), features (15 percent), ease of installation (15 percent), and service and support (10 percent). All drives listed have buffer underrun protection and a one-year warranty unless otherwise noted. See find.pcworld.com/10860 for details on PC World's Star Ratings.

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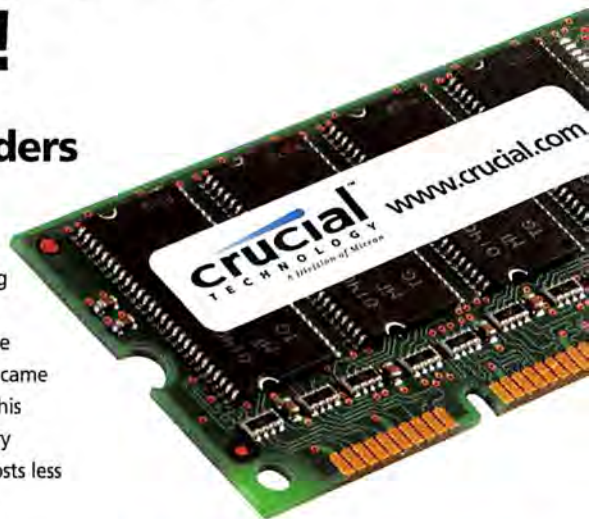
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TOP 10 SCANNERS

TOP 100

TEST
Center

Visit find.pcworld.com/37391 for reviews of all products tested this month and ranked in this chart.

THIS MONTH SEES new Best Buys on both our small-office and corporate scanner charts. On the small-office side, the Canon CanoScan 5000F lowers its price by \$30 this month and edges its new and inexpensive sibling, the CanoScan Lide

50, for top honors. Also making the cut is Epson's new Perfection 1670 Photo, at number four on the SOHO list. Meanwhile, despite middling color scan quality, HP's fast Scanjet 8200 debuts in first place among corporate scanners.

SMALL-OFFICE SCANNER		Street price (8/1/03)	Overall rating	Scan quality (color/monochrome)	Scan speed (color/monochrome, ² in seconds per document)	Comments
1	Best Buy Canon CanoScan 5000F find.pcworld.com/34409	\$170	82	Outstanding/Outstanding	35/24	FEATURES: USB 2.0, 2400 by 4800 dpi, 10.9-by-4.2-by-20-inch case, 7.5 pounds, 8.5-by-11.7-inch scanning area, includes transparency adapter, no automatic document feeder. SUMMARY: This Canon delivered fine image quality, dazzling color fidelity, and good detail, plus fairly quick scans. (★★★★★ May 03)
2	Canon CanoScan Lide 50 find.pcworld.com/37376 NEW	\$100	82	Very good/Very good	44/21	FEATURES: USB 2.0, 1200 by 2400 dpi, 10.1-by-1.5-by-14.7-inch case, 4 pounds, 8.5-by-11.7-inch scanning area, no transparency adapter or ADF. SUMMARY: The Lide 50 is a good overall performer at a nice price, but it lacks a transparency adapter. Features a light, slim design. (★★★★☆)
3	Visioneer OneTouch 9000 USB find.pcworld.com/29882	\$80	80	Fair/Fair	36/25	FEATURES: USB 2.0, 1200 by 4800 dpi, 11.9-by-2.6-by-17-inch case, 5.1 pounds, 8.5-by-11.7-inch scanning area, no transparency adapter or ADF. SUMMARY: A low price and a generous software bundle make this model a good value. Its image quality could be better, though. (★★★★☆ Sept 02)
4	Epson Perfection 1670 Photo find.pcworld.com/37379 NEW	\$129	80	Good/Good	37/18	FEATURES: USB 2.0, 1600 by 1600 dpi, 10.8-by-3.4-by-16.5-inch case, 6.8 pounds, 8.5-by-11.7-inch scanning area, includes transparency adapter, no ADF. SUMMARY: Epson's updated driver includes one-click photo restoration, but we've seen better image quality. (★★★★☆)
5	Microtek ScanMaker 4900 find.pcworld.com/29124	\$100	79	Good/Good	39/42	FEATURES: USB 1.1, 2400 by 4800 dpi, 11.8-by-2.4-by-19.3-inch case, 5.7 pounds, 8.5-by-11.7-inch scanning area, includes transparency adapter, no ADF. SUMMARY: Solidly constructed scanner provides great-looking color photos in a hurry, but its quick-start buttons can be tricky to configure. (★★★★☆ Aug 02)
6	HP Scanjet 5500c find.pcworld.com/31163	\$250	79	Good/Very good	21/17	FEATURES: USB 2.0, 2400 by 2400 dpi, 12.2-by-6.7-by-21.6-inch case, 11.6 pounds, 8.5-by-11.7-inch scanning area, includes transparency adapter, no ADF. SUMMARY: Home-oriented unit with snapshot feeder reigns as speed champ; like other HPs, it makes terrific gray-scale scans. (★★★★☆ Dec 02)
7	HP ScanJet 5550c find.pcworld.com/34406	\$300	76	Good/Very good	35/19	FEATURES: USB 2.0, 2400 by 2400 dpi, 19.2-by-6.3-by-13.4-inch case, 16.9 pounds, 8.5-by-11.7-inch scanning area, transparency adapter optional, includes ADF. SUMMARY: The only SOHO model we've seen lately with an automatic document feeder, this HP posted middling image-quality scores. (★★★★☆ May 03)
CORPORATE SCANNER		Street price (8/1/03)	Overall rating	Scan quality (color/monochrome)	Scan speed (color/monochrome, ² in seconds per document)	Comments
1	Best Buy HP Scanjet 8200 find.pcworld.com/37382 NEW	\$500	85	Fair/Very good	43/11	FEATURES: USB 2.0, 4800 by 4800 dpi, 22.5-by-5.25-by-16-inch case, 22.6 pounds, 8.5-by-14-inch scanning area, includes transparency adapter, ADF optional. SUMMARY: Speediest scanner of gray-scale images on the chart has six push buttons, and more software than HP's consumer units do. (★★★★☆)
2	Epson Perfection 3200 Photo find.pcworld.com/33827	\$399	84	Very good/Very good	52/15	FEATURES: USB 2.0, FireWire, 3200 by 6400 dpi, 11.9-by-4.8-by-18.7-inch case, 13.2 pounds, 8.5-by-11.7-inch scanning area, includes transparency adapter, no ADF. SUMMARY: Even with its extra resolution, the Perfection 3200 was reasonably fast. We expected to see better-looking photos. (★★★★☆ May 03)
3	Microtek ScanMaker 6800 find.pcworld.com/34400	\$399 (with FireWire 400 card)	83	Very good/Good	39/42	FEATURES: USB 2.0, FireWire, 2400 by 4800 dpi, 11.4-by-4.5-by-19.7-inch case, 8.1 pounds, 8.5-by-11.7-inch scanning area, includes transparency adapter, ADF optional. SUMMARY: Great features (including automatic photo-fixing) are outweighed by slow scanning and ho-hum image quality. (★★★★☆ May 03)

FOOTNOTES: ¹ All USB 2.0 devices are backward-compatible with USB 1.1 ports; however, performance may vary from our results, as we test with USB 2.0 (unless otherwise noted). ² Tested using FireWire 400 interface. **HOW WE TEST:** See find.pcworld.com/37391 for our test methodology, and see find.pcworld.com/10860 for details on PC World's Star Ratings.



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TOP 10 DIGITAL CAMERAS

Visit find.pcworld.com/37523 for reviews of all products tested this month and ranked in this chart.

NEW 5-MEGAPIXEL CAMERAS from Canon, Nikon, and Sony set up camp on this month's chart. Consequently, 5-megapixel (or higher) models occupy eight of the ten spots, but the plucky 4-megapixel Olympus C-750 Ultra Zoom beat them all, thanks to impressive imaging, a relatively low price,

and a powerful 10X optical zoom lens. Sony's Cyber-shot DSC-V1—one of the 5-megapixel newcomers—placed eighth; it earned extra points for the unique low-light modes it borrows from Sony camcorder cousins, but its print samples didn't pop in quite the same way those of the other new models did.

	DIGITAL CAMERA	Street price (8/1/03)	Overall rating	Image quality	Ease of use	Battery life/shots	Comments
1	Best BUY Olympus C-750 Ultra Zoom NEW find.pcworld.com/37364	\$599	84	Very good	Good	Very good/544	FEATURES: 4-megapixel resolution, 16MB XD-Picture Card media, 38mm to 380mm focal range, video recording with audio, 13.9 ounces. SUMMARY: Identical to the sub-\$500 C-740 except in resolution, the C-750 produced images rivaling those from 5-megapixel models. Its 10X zoom lens is longer than most. (★★★★☆)
2	Best BUY Canon PowerShot S50 find.pcworld.com/34838	\$599	84	Outstanding	Very good	Fair/261	FEATURES: 5-megapixel resolution, 32MB CompactFlash media, 35mm to 105mm focal range, video recording with audio, 11.1 ounces. SUMMARY: The S50 combines advanced exposure settings with point-and-shoot simplicity, thanks to well-thought-out controls; but its battery life is relatively short. (★★★★☆: June 03)
3	Canon PowerShot G5 NEW find.pcworld.com/37358	\$799	84	Very good	Good	Very good/438	FEATURES: 5-megapixel resolution, 32MB CompactFlash media, 35mm to 140mm focal range, video recording with audio, 18 ounces. SUMMARY: The big and boxy G5 is surprisingly easy to use for such an advanced camera. It has an extra megapixel of resolution over its predecessor, the PowerShot G3. (★★★★☆)
4	Olympus C-5050 Zoom find.pcworld.com/33212	\$699	83	Outstanding	Very good	Good/372	FEATURES: 5-megapixel resolution, 32MB XD-Picture Card media (also accepts SmartMedia and CompactFlash media), 35mm to 105mm focal range, video recording with audio, 17.3 ounces. SUMMARY: A serious shooter's camera, the C-5050 produces razor-sharp images and has powerful controls. (★★★★☆: Mar 03)
5	Nikon Coolpix 5400 NEW find.pcworld.com/37370	\$800	82	Very good	Fair	Good/338	FEATURES: 5.1-megapixel resolution, 16MB CompactFlash media, 28mm to 116mm focal range, video recording with audio, 13.7 ounces. SUMMARY: The 5400 has more scene modes and a longer zoom lens than its predecessor, the Coolpix 5000, but a smaller LCD display. It presents its wealth of features rather dauntingly. (★★★★☆)
6	Sony Cyber-shot DSC-F717 find.pcworld.com/31526	\$800	80	Very good	Good	Very good/491	FEATURES: 5-megapixel resolution, 32MB Memory Stick media, 38mm to 190mm focal range, video recording with audio, 23.8 ounces. SUMMARY: Besides taking great shots, this model offers advanced features, including user-selectable zone autofocus and USB 2.0 support for faster downloads. (★★★★☆: Jan 03)
7	Fujifilm FinePix S602 Zoom find.pcworld.com/30470	\$700	79	Good	Very good	Good/425	FEATURES: 3.1-megapixel resolution, 16MB SmartMedia card, 35mm to 210mm focal range, video recording with audio, 20.4 ounces. SUMMARY: The S602 Zoom has a hot-shoe flash sync and both SmartMedia and CompactFlash media slots, but it is expensive for a 3-megapixel camera. (★★★★☆: Nov 02)
8	Sony Cyber-shot DSC-V1 NEW find.pcworld.com/37367	\$700	78	Good	Good	Fair/197	FEATURES: 5-megapixel resolution, 32MB Memory Stick media, 34mm to 136mm focal range, video recording with audio, 10.2 ounces. SUMMARY: This relatively lightweight model has two unique modes to aid shooting in low light, though otherwise it isn't quite as sophisticated as other 5-megapixel models. (★★★★☆)
9	Canon EOS 10D find.pcworld.com/34847	\$1499	78	Outstanding	Very good	Outstanding/1098	FEATURES: 6.3-megapixel resolution, CompactFlash media slot, no video recording, 31 ounces. SUMMARY: Bristling with features, this SLR camera takes beautiful pictures and can use most Canon EF mount lenses. The price listed is for the camera body only; lenses start at around \$150. (★★★★☆: June 03)
10	Nikon Coolpix 5700 find.pcworld.com/31118	\$1000	75	Very good	Fair	Good/336	FEATURES: 5-megapixel resolution, 16MB CompactFlash media, 35mm to 280mm focal range, video recording with audio, 19 ounces. SUMMARY: The complex and powerful Coolpix 5700 takes impressive images. Its long 8X zoom is useful for photographing sports events and wildlife. (★★★★☆: Jan 03)

HOW WE TEST: To gauge picture quality, we take a series of shots, with and without flash, at 640 by 480 resolution and at the camera's highest resolution. We photograph a complex still life and a mannequin to see how well each camera captures details and subtle colorings such as skin tones. A panel of judges reviews the on-screen and printed photos and assigns image-quality scores; we then average those scores. Data based on tests designed and conducted by the PC World Test Center. All rights reserved. **CHART NOTES:** Overall ratings are based on price (25 percent), picture quality (20 percent), ease of use (15 percent), features (20 percent), battery life (10 percent), and support (10 percent). For all ratings, higher is better. Resolutions are expressed in effective pixels, focal range is identified as 35mm equivalent, and camera weights include batteries. See find.pcworld.com/10860 for details on PC World's Star Ratings.



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MORE REVIEWS

MISSED AN ISSUE OF *PC World* or passed your copy along to a friend? Here's a recap of other *Top 100* topics from previous issues. To read reviews of the products ranked on these Top 10 charts, go online and type in the *PC World* Find-It

URL at the top of each chart. Next month, we'll look at monochrome laser printers, 19-inch CRT monitors, and digital cameras under \$500. Also, our new spotlight chart will debut, with an in-depth look at graphics boards.



EIZO NANA'S FlexScan L367 ranks among the costliest 15-inch LCDs on the *Top 10 Monitors* chart, but it's also one of the best-looking units we've tested. Its built-in speakers are useful if you're trying to conserve desk space.

LOOKING TO GO DIGITAL, but unwilling to part with lots of cash? Canon's PowerShot A70 costs just \$300, but offers 3.2-megapixel resolution and manual controls (uncommon on inexpensive digital cameras). It takes great shots, too.



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HERE'S HOW

EDITED BY MICHAEL S. LASKY, DENNIS O'REILLY, AND ERIC DAHL



WINDOWS TIPS

SCOTT DUNN

Five Steps to a Leaner, Cleaner Windows

Windows YOU'VE BEEN neglecting your Windows housekeeping chores, haven't you? Your system folders are bloated with hundreds or even thousands of unnecessary files. This dead weight hinders performance by reducing the amount of drive space available for your virtual memory. In addition, you lose the ability to print if the drive doesn't have room for your printer's spool file, and you may have insufficient storage space to create a sys-

tem restore point in Windows Me and XP (this feature needs oodles of free space to store its backups). Here are five things Windows users can do to eliminate clutter in their system folders and maximize the space available on their drives.

Kill off unneeded uninstall files in Windows 2000 and XP: A number of you have asked about deleting the various service packs stored in the Windows folder. As reader Robert King from East Pittsburgh, Pennsylvania, puts it, "In my Windows

directory, there are 13 folders totaling 85MB with names like \$NTUninstallQxxxxxx\$. Then there is a folder named ServicePackFiles consuming 280MB of space. Can I delete these folders?" Don't delete the ServicePackFiles folder! And be cautious about deleting any files in the Windows folder. Also, have a recent system backup on hand before you proceed.

Installing updates and service packs from Microsoft creates subfolders in your Windows folder that store the necessary uninstall information in case the update becomes problematic. These are hidden folders; to see them, launch Explorer and choose *Tools•Folder Options•View*. Under the 'Hidden files and folders' folder icon in the list of Advanced settings, select *Show hidden files and folders*. Then click OK. Now open the Windows folder in Explorer (click *Show the contents of this folder* if necessary) to see the folders with the uninstall information; typically they're called "\$NtServicePackUninstall\$" or "\$NTUninstallQxxxxxx\$" (where xxxxxx is a six-digit number; see **FIGURE 1**).

Chances are you don't remember what purpose these updates served, but in many cases you can find out. Reader Gil Allen of Redford, Michigan, points to Microsoft's answer to the question of which system files are deletable. The Q number indexes an article in Microsoft's Knowledge Base that lets you (or a support pro) identify what the patch was intended to fix. To determine a specific patch's purpose, go to support.microsoft.com, enter **q** followed by the six-digit number in the 'Search the Knowledge Base' box (see **FIGURE 2**), and press **<Enter>** to find an article with the gory details (you may have to dig a bit if the search engine finds more than one article). If you know

162 WINDOWS TIPS

Improve Windows' performance by keeping your system folders clean; free hard-drive space with Disk Medic.

166 HARDWARE TIPS

Smooth your move to rewritable DVD; a universal power adapter lightens your load; a versatile keyboard logger.

168 STEP-BY-STEP

Keep your keyboard working like new by cleaning its surface and innards the safe and effective way.

170 INTERNET TIPS

Put your Internet passwords through the security test; preload your favorite news sites for offline browsing.

174 ANSWER LINE

Use the Spector Backup System to keep your PC data safe; find out if your BIOS will let you boot your system from a USB drive.



170

that you'll never uninstall a particular update, delete the update's folder.

Once you've deleted an uninstall folder, you can't uninstall the update, but the uninstall option stays in the Add/Remove Programs applet. To fix this, choose *Start*•*Run*, type **control**, and press **<Enter>**. Click or double-click *Add or Remove Programs*, and with the 'Change or Remove Programs' button highlighted on the left, select one of the update(s) you deleted and click the *Remove or Change/Remove* button next to it. When Windows fails to find the uninstall folder you removed, it will ask whether you want to remove the item from Add or Remove Programs' cur-

files that were overwritten by naughty install programs or that are otherwise damaged.

Relocate your virtual memory:

Among the largest system files in your Windows folder is the one that Windows uses for virtual memory—disk space that complements your system RAM to let Windows act as if your PC has more memory than it does. Fortunately, you can tell Windows to put this file (known variously as the swap file or the paging file) on another drive.

In Windows 98 and Me, right-click *My Computer* and choose *Properties*. Click *Performance*•*Virtual Memory* and check *Let me specify my own virtual memory settings*. In the 'Hard disk' drop-down list, select an alternative drive. Set the 'Minimum size' and 'Maximum size' to the same number. Click *Yes* to acknowledge the scary warning, select *Close*, and click *Yes* to restart your PC.

In Windows 2000 and XP, log in as the administrator. Right-click *My Computer* and select *Properties*. Click *Advanced*,

and in the Performance box choose *Performance Options* (in Windows 2000) or *Settings* (in XP). In Windows XP, click *Advanced*. In Windows 2000 and XP, click *Change* and select the drive currently being used for virtual memory. Set its initial and maximum sizes to 0 in Windows 2000, or click *No paging file* in XP, and then click *Set*. Select the drive you want to use for virtual memory, make the initial and maximum size values equal, and click *Set* (see FIG-



FIGURE 2: ENTER THE UPDATE ID in the search field of Microsoft's Knowledge Base to find out more about it.

URE 3). When you're done, click *OK* twice to close the dialog box and to acknowledge the restart message. Then click *OK* twice more to close the remaining dialog boxes. Finally, click *Yes* to restart your PC. **Relocate your print spool:** Reader Ron Evanoff of Newmarket, Ontario, writes to ask about another space issue: "Because my C: drive is pretty full, I get an error when trying to print a photo to my printer. The error indicates that my system drive is out of space. I have plenty of space on my D: drive. Can I move the spool file to that partition?" The answer depends on which version of Windows you use.

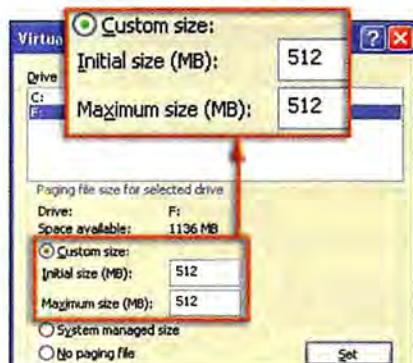


FIGURE 3: MOVE WINDOWS' massive virtual memory file to one or more drives.

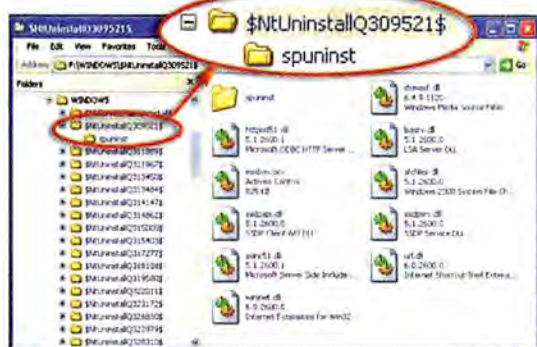


FIGURE 1: SEE WHAT'S TAKING UP space in your Windows folder by unmasking hidden files.

rently installed programs list. Click *Yes*, and repeat the steps as necessary for every uninstall folder you deleted.

Not every folder relating to service packs can be slated for the trash heap, however. For example, as noted above, the *ServicePackFiles* folder should *not* be deleted. It holds essential files for when you use Control Panel's Add or Remove Programs applet to install or take away Windows components. Also, it contains files Windows uses to restore any system



FIGURE 4: SEND PRINTER DATA to your choice of drives in Windows 2000 and XP.

When you print a document, the application first sends the data to your hard disk. (Go to find.pcworld.com/36359 for tips on customizing these settings.) By default, Windows creates the spool (temporary) file in the Windows\Spool\Printers folder. Windows 2000 and XP make it easy for you to choose another location for this file. Let current jobs finish, and when no print jobs are pending, select **Start>Settings>Printers** in Windows 2000 or **Start>Printers and Faxes** in Windows XP.

In Windows 2000 and XP, choose **File>Server Properties>Advanced**. In the 'Spool folder' box, type the path to the spool folder you prefer—for example, **D:\Spool** (see FIGURE 4). (Type the path to an existing folder; Windows won't create the folder for you.) Click **OK** and then **Yes** to acknowledge the prompt. This procedure affects all printers set up on your system.

To set a different spool folder for a specific printer in Windows 2000 and XP, you'll have to edit the Registry. First, back it up (see instructions at find.pcworld.com/36626); then choose **Start>Run**, type **regedit**, and press **<Enter>**. In the left pane, select **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Print\Printers**. In the Printers key (represented by a folder icon), select the key for your printer. In the right pane, double-click **SpoolDirectory**. (If you don't see this icon, right-click in the right pane, choose **New>String Value**, type **SpoolDirectory**, and press **<Enter>**.) In the 'Value data' field of the Edit String dialog box, type the path to your new spool folder. You must specify a folder (such as 'd:\spool'), not the root of a drive. Click **OK** and exit the Registry Editor. (If you specified a nonexistent folder, create it manually, as Windows won't do it for you.) Choose **Start>Run**, type **services.msc**, and press **<Enter>**. From the list of services that appears, select **Print Spooler**, then **Action>Stop**. When the spooler stops, choose **Action>Start** and exit Services.

To redirect the print spool (and other temporary files) to another drive in Windows 98 and Me, create a folder for these files on another drive. For example, you might create a folder on your D: drive named Temp. Then choose **Start>Run**, type **notepad c:\autoexec.bat**, and press **<Enter>**. If the file doesn't exist, Notepad will ask if you want to create a new one; click **Yes**. If the file contains lines that begin 'set temp=' or 'set tmp=', edit those lines with the new path to your temporary folder (for example, **set temp=d:\temp**). If your autoexec.bat file contains no such line, add anywhere in the file a line that reads **set temp=d:\temp**, where **d:\temp** stands for the actual path to your new temporary folder. Add another line that reads **set tmp=d:\temp** (again, replacing **d:\temp** with your path). Make sure that each of these commands is on a line by itself. Now save the file and restart your computer to see the change.

Relocate temporary browser files: Internet Explorer may store its cache files on your Windows drive. To move them, launch IE, choose **Tools>Internet Options**, and under the General tab, click **Settings>Move Folder** (see FIGURE 5). Select a folder on a



FIGURE 5: USE IE'S OWN OPTIONS to tell temporary Internet files where to go.

WINDOWS TOOLBOX

Make a Clean Sweep With Disk Medic

IF YOU'VE TAKEN this column's five-step approach to streamlining Windows but are still strapped for hard-disk space, try Iomatic's Disk Medic utility. Besides scanning for temporary system files, the program finds obsolete files, such as Start menu shortcuts that point to nowhere and files that you haven't used lately. Just scan the list and delete the files you don't need. Disk Medic erases your Web tracks by deleting cache files and selected cookies from IE and other popular browsers. The program expunges your Recent Documents and Start>Run histo-



ry. Disk Medic even recovers memory that apps don't return to Windows when they shut down. All this for only \$20. Go to find.pcworld.com/36371 for your copy.

drive with adequate free space, click **OK** twice, and then **Yes** to restart or log off and move the files to the new folder.

Clean up automatically: Applications don't always clean up the temporary files that they place on your computer. If you have Windows 2000, Me, or XP, you can automate the Disk Cleanup utility that comes with Windows. Go to find.pcworld.com/36365 for complete details; although that tip mentions only Windows Me and 2000, it applies to Windows XP as well. And visit find.pcworld.com/36368 for more tips on freeing up disk space. ■

Send Windows-related questions and tips to scott_dunn@pcworld.com. We pay \$50 for published items. Visit find.pcworld.com/31607 for more Windows Tips. Scott Dunn is a contributing editor for PC World.

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HARDWARE TIPS

KIRK STEERS

**MAKE SENSE OF
SPEED RATINGS**
**LIGHTEN UP ON
POWER ADAPTERS**
**KEYBOARD LOGGER
BACKS UP, SECURES**

Is It Time to Upgrade to Rewritable DVD?

UNTIL RECENTLY, the DVD drive was the most overrated PC component. Drives cost a bundle, software titles were scarce, and movies looked bumpy when played on low-end systems. Besides, who really wants to watch a movie on a PC monitor?

Now software is more plentiful, average PCs play MPEG2 video with no problem, and rewritable DVD drives cost from \$200 to \$300. If you need to store gigabytes of data, or if you create lots of digital videos, upgrade to rewritable DVD. On a single disc, DVD burners can pack 4.37GB of data (or more, in the case of DVD-RAM), compared to the relatively paltry 700MB capacity of a CD-R disc.

Even so, you might want to postpone your move to DVD. With 8X-speed drives on the horizon—they're due by the end of the year from a handful of vendors—prices will probably drop even further. DVD discs and drives aren't standardized yet, so a disc recorded on one drive may be unreadable by a DVD-recordable drive from another vendor (see **FIGURE 1**).

All five DVD formats generate discs that most DVD-ROM drives and stand-alone DVD players can read (the exception: DVD-RAM, which is less interchangeable than the DVD-R/RW and DVD+R/RW formats). The DVD drive format you choose is becoming less of an issue as DVD drive makers increasingly support multiple formats. For example, Pioneer makes a DVD drive that supports DVD-R/RW and DVD+R/RW (but notably, not DVD-RAM). LG Electronics' GSA-4040B and Iomega's Super DVD

Drive both support all of the DVD formats, while so-called DVD "dual" drives such as Sony's DRU-510A (priced at \$279 last summer) and Pioneer's DVR-A06 (available for \$280 last month) support DVD-R/RW and DVD+R/RW. Single-format drives will be sold through the end of the year at least, and typically cost less than their multifunction counterparts.

DVD-RAM: The oldest rewritable DVD format is supported by Hitachi-LG, Iomega, Panasonic, Toshiba, and Samsung. DVD-RAM discs are available in several capacities (most commonly as 4.7GB or 9.4GB double-sided media) as either bare discs or cartridges. The format's large capacity, superior error correction, and longevity (it can be rewritten more than 100,000 times) make DVD-RAM a good choice for frequent data backups. However, few

DVD-ROM drives and stand-alone set-top DVD players can read DVD-RAM media.

DVD-R/RW: The DVD-R write-once format burns at up to 4X. Its primary backer is the DVD Forum, which originated the DVD-Video format for movie discs. Many older DVD players and DVD-ROM drives can recognize DVD-R media. The DVD-RW rewritable format is compatible with more existing drives than DVD-RAM, but with fewer write-once media types. Like CD-RW media, DVD-RW discs support just 1000 rewrites. At 2X, DVD-RW drives are slower than DVD+RW drives.

DVD+R/RW: These latest entrants into the DVD market originally tended to be incompatible with older DVD players and DVD-ROM drives, but now they're supported by HP, Philips, Sony, and other industry players. DVD+RW drives are faster than their DVD-RW counterparts, and they offer timesaving on-the-fly formatting, so you can format a new disc while data is being burned to it.

DVD SPEED TRAP

ADVERTISEMENTS FOR DVD drives list lots of X speed ratings, but what do they mean? CD-RW drives have three X ratings: the read speed, the CD-R write speed, and the CD-RW write speed. For CD-RW drives, 1X represents a transfer rate of 150KB, which means very little to most PC users. Here's a rule of thumb: A CD-RW drive running at 8X burns a full 650MB CD-R in about 9 minutes.

FIGURE 1

WHICH MEDIA CAN A DVD DRIVE USE?

NOT ALL DVD DRIVES read data from—or write data to—all types of recording media.

DRIVE FORMAT	COMPATIBLE MEDIA									
	CD-ROM	CD-R	CD-RW	DVD video	DVD-ROM	DVD-R	DVD+R	DVD-RW	DVD+RW	DVD-RAM
DVD video player	R	R	?	R	R	R	R	?	?	?
DVD-ROM	R	R	R	R	R	?	?	?	?	?
DVD-R/RW	R	R, W	R, W	R	R	R, W	?	R, W	?	I
DVD+R/RW	R	R, W	R, W	R	R	R	R, W	?	R, W	I
DVD-RAM	R	R	R	R	R	R	?	?	?	R, W

FOOTNOTE: 'Many modern drives combine drive types.

R = Most can read from this type of media.

R, W = Most can read from and write to this type of media.

? = May be able to read/write this type of media. Check with drive manufacturer.

I = Incompatible. Most models cannot use this media.

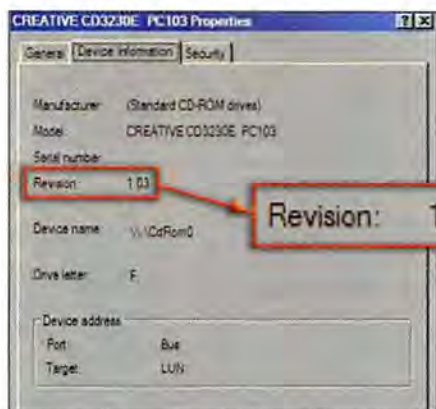


FIGURE 2: THE FIRMWARE VERSION of your CD or DVD writer is listed in Device Manager.

DVD drives have similar speed ratings, except that a 1X DVD drive is about eight times faster than a 1X CD-RW drive in absolute terms. Since the average DVD holds 4.37GB (versus a CD's capacity of 650MB), a 4X DVD drive burns a full DVD in approximately 15 minutes.

Most DVD-RW drives now record on rewritable media at a speed of 2X, while DVD+RW drives write at either 2.4X or 4X. The latest DVD drives write to DVD-R and DVD+R discs at 4X, and faster speeds loom in the not-too-distant future.

When evaluating a DVD drive, check how quickly it burns CD-R and CD-RW discs. (You may want to record data for people who still use a CD drive.) DVD drives record at speeds of 24X for CD-R and 10X for CD-RW, but some support only 12X or 16X for writing to CD-R discs.

Most currently available drives don't support the Mt. Rainier standard—also

known as EasyWrite—but drives that do are slowly appearing. Mt. Rainier's biggest initial benefit will be its added layer of error correction, dubbed *defect management*, to protect data written to DVD+RW and CD-RW discs. And its packet-writing standard lets you move data to and from CD-RW and DVD+RW media via drag-and-drop in Windows Explorer, just as you do with floppy disks.

The catch: This is possible only if the operating system supports Mt. Rainier; and currently, no version of Windows does. Microsoft has said that Longhorn, the successor to Windows XP, will support Mt. Rainier, but that new OS is still more than a year away. Watch for XP drivers for Mt. Rainier to be available earlier.

FRESHEN YOUR FIRMWARE

YOU MAY BE ABLE to improve the performance of your current DVD or CD-RW drive or to give it some new features by updating the device's firmware. This is the control software stored on a chip in the drive itself, much as your PC's BIOS is stored on the motherboard.

Firmware updates usually involve simply downloading and installing a program from your drive manufacturer's Web site. Follow installation instructions to the letter. And as with your PC's BIOS, don't update your DVD's firmware unless you have a good reason to. Check the vendor's Web site for information on the update's benefits.

To find the right firmware version for your DVD drive in Windows 2000 and Windows XP, open Control Panel, click or double-click *Administrative Tools*, and click or double-click *Computer Management*. In the left pane, double-click *Removable Storage*, and double-click the *Libraries* folder (*Physical Locations* in Windows 2000). Right-click your drive and select *Properties*. You'll find the version listed on the Device Information tab (see **FIGURE 2**).

In Windows 98 and Me, right-click *My Computer*, select *Properties*, choose *Device Manager*, and then double-click your DVD drive. You'll find its firmware version listed under the Settings tab.

PACK LESS POWER

I JUST PACKED for a business trip with stops in Asia, Europe, and the United States. I needed an entire bag for the AC power adapters and other paraphernalia required by my notebook, PDA, cell phone, and digital camera. Couldn't I use my PC's AC adapter for all the devices?

Eric Matson, New York

GENERALLY SPEAKING, no. The DC power voltage that an electronic gadget requires from its AC adapter varies from device to device. Charging a notebook or digital camera with an AC adapter that produces the wrong voltage can damage or destroy the device's delicate circuits.

Universal power supplies work with many different devices. IGo (www.igo.com) makes the \$120 Juice 70, a product not much bigger than a cell phone. The Juice uses tiny plugs (or tips) to connect to many different notebooks, cell phones, and PDAs (though some tips cost extra).

If the Juice can't support one of your devices, try the \$80 Targus 70-watt Univer-



FIGURE 3: THE TARGUS UNIVERSAL AC Adapter's tips can attach to many small devices.

sal AC Adapter (www.targus.com, see **FIGURE 3**). The Targus product can recharge an even wider selection of devices than the Juice 70, including PDAs, digital cameras, printers, and portable DVD players. ■

Go to find.pcworld.com/31511 for past Hardware Tips columns. Send your tips and questions to kirk_steers@pcworld.com. We pay \$50 for published items. Kirk Steers is a PC World contributing editor. Associate Editor Melissa Perenson contributed to this article.

KEY WATCHER

OK, SO YOU'RE A BIT paranoid. That doesn't mean someone *isn't* playing around with your PC when you're not there. To ease your mind (or confirm your worst fears), install Keyboard Logger, a small utility that records every keystroke made on your keyboard. The results are stored on your hard drive in an easy-to-access text file. The program doubles as a backup tool for documents and other typed-in data. Keyboard Logger is free to try and \$20 to keep. Go to find.pcworld.com/36377 for your copy.

STEP BY STEP

STAN MIASTKOWSKI

Keep a Clean Keyboard

DON'T LOOK NOW, but your PC's keyboard may have its own alien ecosystem growing in the dark recesses beneath the keys. Dirt and dust coat the keys and build up underneath. Sometimes the accumulated

mixture of spilled drinks and crumbs can stop keys from working altogether.

Keeping your keyboard clean is an easy process that you should perform regularly. Before beginning, determine whether you have a mechanical or a membrane keyboard. Some boards still use a mechanical apparatus underneath the keys, which creates a distinctive click when keys are pressed. But most keyboards today use hard-contact keys that connect with a plastic membrane.

We've divided our tips into two sec-

TOOLS AND SUPPLIES

BASIC CLEANING

Canned compressed air (available at computer and photo dealers), lint-free cloth or photographic wipes, mild liquid dishwashing detergent, vacuum cleaner with soft brush

INTENSIVE CARE

All of the above, plus a small screwdriver (for removing keys), cotton swabs, and 90 percent isopropyl alcohol (available at any drugstore). Note: Do not use ethyl-based rubbing alcohol.

MORE CLEANING TIPS

Your keyboard isn't the only part of your PC that could use tidying. See find.pcworld.com/36623 for instructions on cleaning your PC's mouse. Visit find.pcworld.com/36374 for more tips.

tions: Basic Cleaning and, for stuck or truly filthy boards, Intensive Care. Of course, if you need to start anew, replacement boards start at as little as \$10. ■

Stan Miastkowski is a PC World contributing editor. Contact him at stan_miastkowski@pcworld.com. Visit find.pcworld.com/31676 for past Step-By-Step columns.

BASIC CLEANING

1 Tap out the dirt. Turn off your PC and unplug the keyboard. Put a large piece of old newspaper on a table, turn the keyboard over, and holding it a few inches above the paper, shake out any loose debris.



2 Blow out the dirt. This step is best done outside. Use a can of compressed air to loosen and remove dirt by directing the air stream between the keys. Then invert and shake out the keyboard again.

3 Clean the key surfaces. To remove finger oils and other dirt from the surface of the keys, make a diluted solution of standard liquid dishwashing detergent. (Do not use any harsh cleaning solutions.) Use a damp (not wet) lint-free cloth to gently clean off the key surfaces.



If they're not particularly dirty, plain warm water will do. Then wipe the keys with a dry cloth.

4 Vacuum the leftover dirt. To remove loose dirt that the other steps missed, use the dusting brush on any standard vacuum.

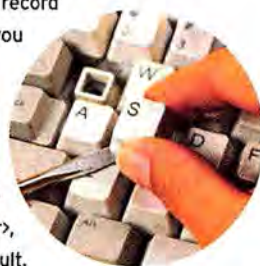


INTENSIVE CARE

WARNING: These additional steps are only for truly filthy membrane-type keyboards with sticking keys. Don't use these steps with laptops, or with mechanical keyboards (which have a spring under each key and can be identified by a distinctive click when you press down).

5 Keep track of the keys. If extreme measures are necessary, access the keyboard's interior by popping off the keys. Before you begin, use a copy machine or a digital camera to record the layout of the assembled keyboard so you can return each key to its correct location.

6 Remove the keycaps. Using a small screwdriver, carefully pry up each key. It should pop off easily. Do not remove the spacebar or large keys such as <Shift>, <Enter>, or <Tab>. Putting those back on can be difficult.



7 Go after the stubborn dirt. Loosen and remove leftover particles using compressed air. Use a cloth dampened with the solution from Step 3 to remove dirt and stains. For stubborn stains, use cotton swabs dampened with 90 percent isopropyl alcohol. Then use the compressed air again.



8 Replace the keycaps. Carefully snap each keycap back on. Make sure each one works freely as you proceed. Plug in the keyboard, and test all the keys when finished.



chair by le corbusier
\$695



sonata by antec
\$129



sofa by henry miller
\$3,295



minuet by antec
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INTERNET TIPS

SCOTT SPANBAUER

**CACHE YOUR NEWS
TO READ OFFLINE**
**GET RID OF SAVED
PASSWORDS**
**UPDATE YOUR
MEDIA PLAYERS**

Can You Pass the PC World Password Safety Test?

LIFE ONLINE MEANS living with—and trying to remember—passwords. Lots of them. Your Internet, e-mail, and instant messaging accounts require you to enter a user name and a password. So do secure online bank, credit card, mutual fund, and shopping Web sites. Meanwhile, less-sensitive sites such as those of *Consumer Reports* (www.consumerreports.org) and the *New York Times* (www.nytimes.com) may require a lower level of log-in security.

Faced with retaining so many user names and passwords, most of us take the easy way out: We pick one memorable pair of terms and use them everywhere: Our dog's name, our kid's birthday, our favorite *Star Trek* character. Maybe if we are feeling really tricky, we move our hands one key to the right and type "password" (that produces "[sdceptf]").

I'm sorry to be the bearer of bad tidings, but the password stealers are on to us.

If your password is "abc123", "iluvjlo",

or "OU812", you might as well not have one at all. If it consists of names or any words that can be found in a dictionary (English or otherwise), fuhgeddaboutit. A knowledgeable person equipped with the right tools and your user name could deduce your weak password and gain access to your Internet account, e-mail, or bank account in no time.

Using the same weak password at multiple sites or servers compounds the likelihood that someone will take control of your accounts. Even if the password you use for your ISP account is fairly strong, using the same password at various sites reduces your security. The people who manage a site or otherwise are privy to your data in one place undoubtedly have access to the password, and they may be able to figure out where to use it based on your e-mail or IP address (which they also probably have). Moreover, the user names and passwords that you use to access Web pages or to enter your e-mail may travel over the Internet in the form of unencrypted plain text, so devious folk can grab your password and give it a try elsewhere.

THERE'S SAFETY IN NUMBERS

FOLLOW THESE THREE commonsense rules to ensure the safety of your passwords and the data they protect.

Choose strong passwords: These consist of six to eight completely random alphanumeric characters. Weak passwords contain easily guessed number sequences, or names or words that can be found in a

dictionary, even if the dictionary is Latvian. Mixing upper- and lowercase may or may not matter, depending on the system that accepts the password, but you should always combine letters, numbers, and punctuation. For example, "scott123" is a weak password. And except for the fact that it now has been published in *PC World*, "8hT\$2@N8" is a strong one.

Since coming up with a truly random password is difficult for humans, you may want to use a tool—such as the Info Tech Professional Random Password Generator (find.pcworld.com/36314)—that can create such passwords for you.

Store passwords securely: Since you can't possibly remember dozens of unique, gibberish passwords, you need to record them and store them somewhere safe. The first thing to recognize is that there is no truly safe location to store passwords: The most convenient place won't be the most secure, and the most secure methods won't be terribly convenient.

Writing passwords on a piece of paper that you file away somewhere or stick into a book will work okay as long as no one else is likely to open the book—and you don't forget which book it's in. Storing passwords in a file on your PC may be more convenient, but not if the hard disk dies. To prepare for that contingency, ►

CLEAR PASSWORDS FROM IE'S AUTOCOMPLETE

INTERNET EXPLORER'S AutoComplete feature handily remembers the user names, passwords, and other data that you need to enter repeatedly in online forms, so you don't have to type the data in every time. But what if a certain password you recorded there has changed, or if you don't want to make your passwords available to other users of the PC? To remove a user name and password from IE's encrypted database, visit the site where you enter them, double-click the site's user name or user ID field, select the user name you want to remove in the drop-down field, and press <Delete>. To erase all AutoComplete data, choose *Tools•Internet Options•Content•AutoComplete•Clear Passwords*.

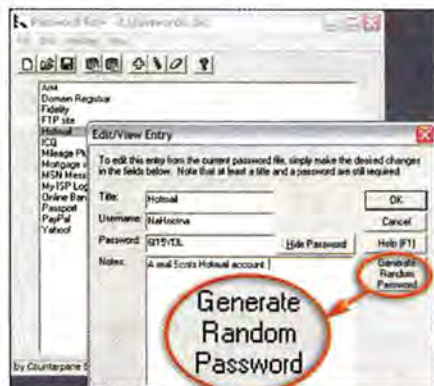


FIGURE 1: CREATE AND STORE passwords using the Password Safe freeware program.

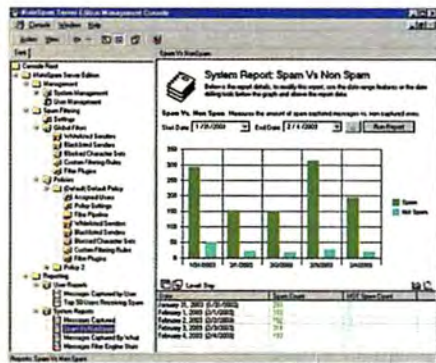
STOP THIS
\$#!+!!
SPAM!!!

YOUR 'FILTER'
ATE 16
SALES LEADS!!!

SPAM SUCKS!

Your life shouldn't.

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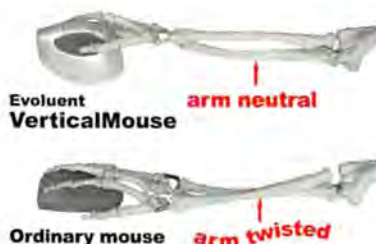
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HERE'S HOW INTERNET TIPS



FIGURE 2: SCHEDULE WEB news to IE's cache by arranging for daily offline synchronization of favorites.

print out a paper copy and store it in a safe, a locked cabinet, or a safety deposit box, or in an innocuous book that nobody is likely to browse through, such as *Do-It-Yourself Brain Surgery: A Narrative or Scranton on \$50 a Day*.

If you sell your computer or replace its hard disk, you'll need to delete the password file, and then use a file-wipe utility to permanently erase the drive so that the new owner can't restore your password file. Go to find.pcworld.com/36629 for instructions on wiping a hard drive.

Encrypt and password-protect the file you save your passwords in. You can password-protect Word 2002 and Excel 2002 files using a fairly strong 128-bit encryption key. Choose **Tools>Options>Security** in either program to enter the password, and click **Advanced** to select the encryption strength. Obviously, choose a strong password that you'll remember.

If you don't use Word 2002 or Excel 2002, or if you aren't convinced that these programs are secure enough, download Counterpane Labs' free Password Safe utility (find.pcworld.com/36320). In addition to using Counterpane's bulletproof Blowfish encryption to encrypt the company's user name and password database, Password Safe includes a handy password generator (see **FIGURE 1**) that lets you copy user names and passwords to the Windows Clipboard with a single click. When you close Password Safe, the program clears passwords from the Clipboard.

Use passwords safely: One major stumbling block in password security is the

innate human inability to keep a secret. Once you have created a password, reveal it to no one. Your ISP, your bank, and no one else should ever need you to tell them your password, whether by phone, via e-mail, or in person (your company's IT support person, however, is another story). Don't share your password with coworkers, and don't write it on a note that you leave in your desk drawer.

Don't let others "shoulder-surf" you by observing you as you log in to a network or secure Web page. And for maximum peace of mind, keep your personal passwords off your office PC.

If you suspect that one of your passwords has been compromised, simply use the Web site's password-management options to change it. Practically every online site or service that relies on passwords allows you to enter your account and select a new one instantly.

CACHE YOUR NEWS, IF YOU CAN

ARE YOU ONE of those people poring over a laptop instead of a newspaper while on the train or ferry, or at the airport or coffee shop? Unless you pay through the nose for a wireless connection, you're probably not online. But with a little effort, you can have your browser automatically preload your favorite news sites for you so that they're available during your commute.

To use Internet Explorer 6 to cache a Web site for offline reading, first browse to the site, choose **Favorites>Add to Favorites**, check **Make available offline**, and click **Customize** to open the Offline Favorite Wizard. Click **Next** to start moving through the wizard. Select **Yes** if you wish to download pages linked to the site's main page (or **No** if you're happy just to read the headlines), tell the wizard how many levels deep you wish to cache links (I recommend just one level deep for starters), and then click **Next**. Select **I**

Media Players Updates

Winamp 2.91 (find.pcworld.com/33098):

Though Winamp 3 appeared in 2002, Nullsoft has continued to develop and improve version 2.x as a distinct product. Why? Because 2.x has a simpler interface and delivers better performance, according to Winamp users on Nullsoft's Web forums. Version 2.9 adds several key features lifted from Winamp 3, including the ability to play MPEG and WMV video.

Musicmatch Jukebox 8 (find.pcworld.com/33095): The latest version of this free ripping, playing, and burning tool adds a streamlined interface, support for Universal Plug and Play home audio networks, and new Winamp-like visuals and slide shows that play with your music.

RealOne Player 2 (find.pcworld.com/36323 or www.real.com): If you carefully



follow the tiny links on RealNetworks' site that say 'free RealOne Player', you will eventually get Real's latest player, which handles all major audio and video formats, plays DVDs, and burns CDs.

would like to create a new schedule, and click *Next* again. Choose a frequency and time to perform the Web synchronization (see **FIGURE 2**). You can also set the synchronization to connect automatically when you next go online (if you happen to be offline at the preset time) and to enter a user name and password. Click *Finish* when you've made your choices. ■

Send your questions and tips to nettips@spanbauer.com. We pay \$50 for published items. Go to find.pcworld.com/31523 for more Internet Tips. Scott Spanbauer is a contributing editor for PC World.

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Gary Oleson,
Howard Lake, Minnesota

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My method requires one short batch file, a couple of extra text files, and two or three free programs. Place the files and programs (except WinZip) on your media of choice. Go to find.pcworld.com/36431 to download the files for Windows 98 and Me, or to find.pcworld.com/36434 for files that work with Win 2000 and XP.

The three required freebies (download them at find.pcworld.com/36437) are the WinZip Command Line Support Add-On, Paul Saletan's DateFile, and Jem E. Berkes's Ask, which is part of Berkes's DOS Utilities Collection. The WinZip add-on installs like any other Windows program, but DateFile and Ask are old DOS tools that you simply unzip to your backup media. (Ask is needed only if you use Windows 2000 or XP.)

The heart of this backup technique is the batch file backup.bat, which you can create with Notepad or any other text editor (FIGURE 1 shows the version for Windows 98 and Me). Note that the command **cls** must be on the very last line, without even a blank line after it. For Windows 2000 and XP, change the third line to read **ask F)ull or P)artial backup? C)ancel ~fpc**. And you can skip that last 'cls' line.

The next file, backup.txt, is a list of the folders you'll back up. For Windows 2000 and XP, I recommend only one line: **c:\documents and settings**. If you use Windows 98 or Me, add a separate line to this text file for each of these folders:

```
c:\my documents
c:\windows\all users
c:\windows\application data
c:\windows\desktop
c:\windows\favorites
c:\windows\local settings
c:\windows\profiles
c:\windows\sendto
c:\windows\start menu
```

The third file, nobackup.txt, contains exceptions—files and folders you don't want to back up. Again, every item here must be on a separate line. For Win 2000 or XP, list **index.dat**, **ntuser.dat***, **usrclass**.

dat*, and ***\temporary internet files***.

If you use CDs for your backups, you need software that allows Windows to treat the CD as if it were a big floppy disk. Most CD-RW drives come with DirectCD, Drag-To-Disk, InCD, or another such CD-writing program. CD users have an advantage: By adding the text file **autorun.inf** to the backup CD, you can have a backup launch automatically when the disc is inserted in the drive. To set up this system, open Notepad and type two lines:

[autorun]

open=backup.bat

Save the file as **autorun.inf** on your CD.

If you're not using a CD, you can create a shortcut to your backup by dragging the file **backup.bat** from your backup media to the Start menu. And, of course, you can start your backup by double-clicking the file in Explorer or any folder window.

However you launch it, **backup.bat** asks if you want to back up everything or just the files created or changed since your last backup. The file then displays a list of the .zip files it placed on your backup media. Use any program that reads .zip files to restore your backup. ■

Send your questions to answer@pcworld.com. Answer Line pays \$50 for published items. See find.pcworld.com/31577 for more Answer Line columns. You'll find Contributing Editor Lincoln Spector's humorous writing at www.thelinkinspector.com.



FIGURE 1: BACK UP YOUR DATA files with this batch file and a few other tools.

CAN YOU BOOT FROM USB?

SARA SAMPLAWSKA of New York asks If you can boot from a USB drive. The short answer is maybe. First, your BIOS has to support booting from USB. To find out if it does, restart your computer and enter your PC Setup program (there should be a message when you turn on your machine telling you what key to press). Now check your boot device options to see if USB is one of them. If it is, then check your USB drive's specs to see if it is bootable. Note that while Windows XP and some other operating systems won't boot from an external drive, you can still use the USB device as a DOS-based, emergency boot device.



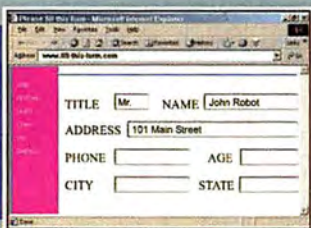
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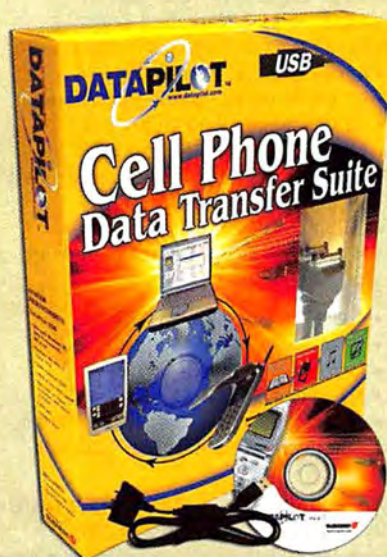
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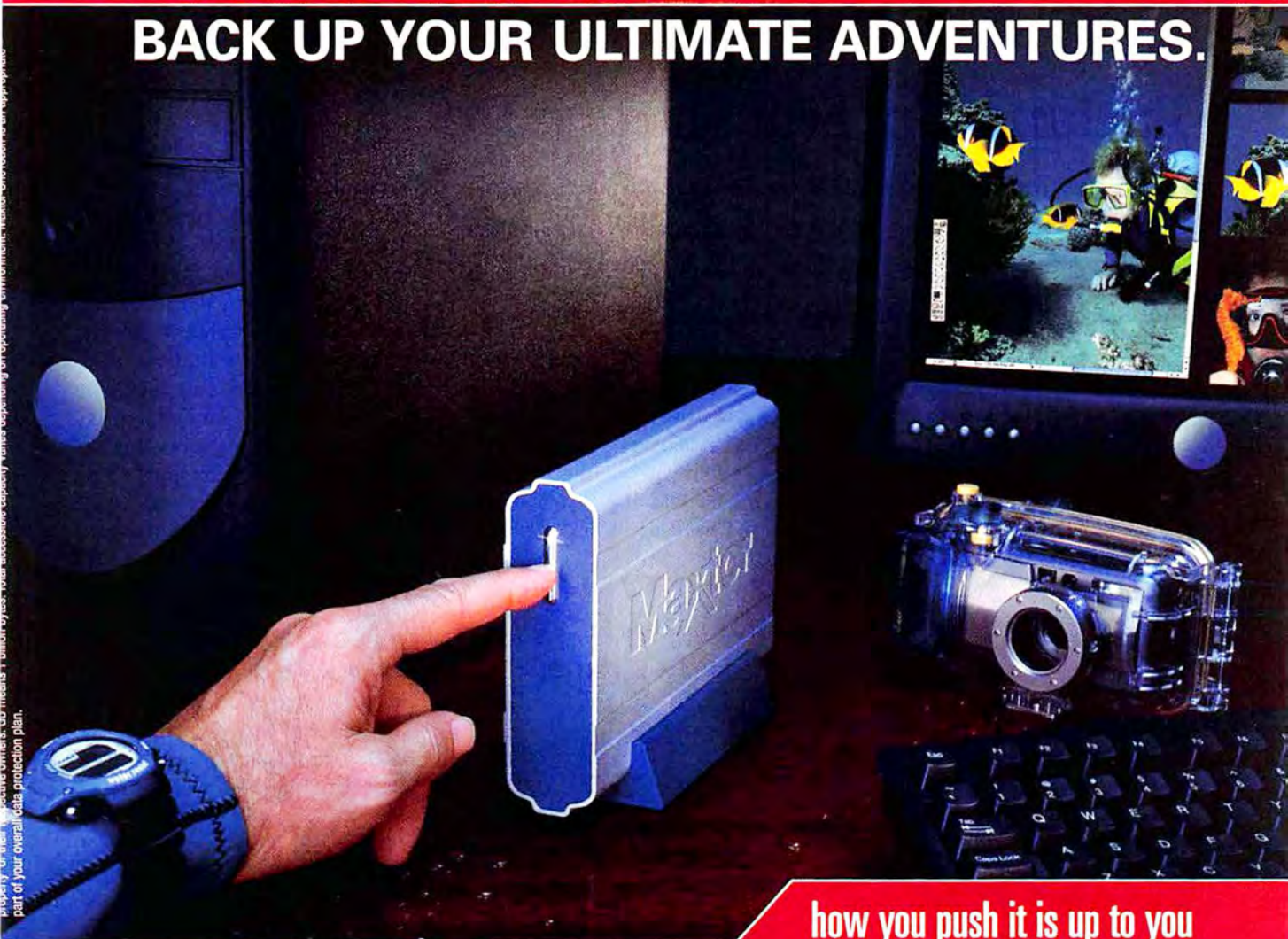
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BenQ America Corp.	www.BenQ.com	6	LG Electronics USA Inc.	www.lgeus.com	35
BenQ America Corp.	www.BenQ.com	31, 33	MA Labs	www.malabs.com	152
Best Buy	www.bestbuy.com	63	Maxtor Corporation	www.maxtor.com	185
Brother International	www.brother.com	75	Memorex	www.memorex.com	65
Buffalo Technology	www.buffalotech.com/pcworld	14	Microsoft Home	www.microsoft.com	56, 57
CDW Corporation	www.cdw.com	10-12	NEC-Mitsubishi Electronics Display of America, Inc.	www.necmitsubishi.com	133A
Cisco Systems	www.cisco.com	50-51, 53	NewEgg.com	www.newegg.com/pcworld	110-111
COMDEX	COMDEX.com	123A	Oki Data Americas, Inc.	www.okidata.com	60
Corel	www.corel.com	27	PC America	www.pcamerica.com	154
Creative Labs	www.creativelabs.com	116	PC Power & Cooling Systems	www.pcpowercooling.com	135
Crucial Technology	www.crucial.com	58, 156	Pioneer Business Solutions Division	www.pioneerelectronics.com	121
CTX	www.ctxintl.com	81	Primera Technology	www.primeratechnology.com	125
Dell, Inc.	www.dell.com	28-29	Rayovac	www.rayovac.com	158
Dell, Inc.	www.dell4me.com/pcworld	86-87	Register.com	www.register.com	67
Dell, Inc.	www.dell.com/pcworld	C5-C8	R-Tools Technology	www.r-tt.com	140
eBay	www.ebay.com	42, 43	Samsung Electronics America Inc.	www.samsungusa.com/monitor	19
eMachines, Inc.	www.emachines.com	165	Serious Magic	www.seriousmagic.com	99
Envision Peripherals, Inc.	www.AOCmonitor.com	109	Siber Systems	www.siber.com	175
Epson America, Inc.	www.epson.com	44	Sony Electronics Inc.	www.sony.com	46-47
Evoluent	www.evoluent.biz	172	Sony Electronics Inc.	www.sony.com	54-55
ewiz	www.ewiz.com	160	Sunbelt Software	www.sunbelt-software.com	171
FujiFilm	www.fujifilm.com	48	Toshiba America	www.toshiba.com	115
Fujitsu PC Corporation	www.fujitsupc.com	79	Tripp Lite	www.tripplite.com/promo/pcw	113
Fujitsu PC Corporation	www.fujitsupc.com	137	Verbatim	www.verbatim.com	71
Garmin	www.garmin.com	8	Verizon Wireless	www.verizonwireless.com	20
Gateway	www.gateway.com	16-17	ViewSonic Corporation	www.ViewSonic.com	95, 97
Gateway	www.gateway.com	37-40	Wacom Technology	www.wacom.com	82
GigaFast Ethernet	www.gigafast.com	18	Xerox Office Group	www.xerox.com/officeprinting/bird1916	25
GoToMyPC by Expertcity, Inc.	www.gotomypc.com	83	Yahoo!, Inc.	www.yahoo.com	127A
Hewlett Packard	www.hp.com/go/wksfinance6	127	ZT Group	www.ztgroup.com	147
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Backing Up: Still Hard to Do

BACKING UP YOUR COMPUTER has always been a maddening process—which is why so few people do it. Not that many years ago, I stored precious data on “state of the art” tape cartridges even though the lousy hardware, media, and software assured absolutely nothing. Colleagues would

scream in desperation on discovering that their backup tapes were unreadable.

Things are only slightly better now. The culprits are much the same: slow hardware, media that don't hold enough data, and baffling, untrustworthy software. One program I recently sampled reported that a backup to CD-R would require eight discs—even after I reduced the backup set to a single file. That didn't make me feel warm and fuzzy—or secure.

Microsoft still gives backup the back of its hand. Backup software is supposedly buried on the Windows XP Home CD, but you may not find it if your hardware vendor gives you the usual “recovery” disc instead of a full-blown copy of the OS. The Windows Registry's very existence complicates backing up, and Microsoft's applications don't help: Outlook Express opens every one of its files whether you use it or not, and Outlook creates an endlessly growing data file. You end up wasting time and media by backing up data that isn't really new.

But as important as backing up is, there's no one right strategy. Various utilities let you create an image of your entire drive, but that takes so long you won't do it often. Quicker incremental backups involve only files that have changed, but they generally won't restore a dead drive. With backups that are bigger than the capacity of removable media, you have to hang around to feed extra discs into the

drive. Hard-drive mirroring seems smart until a disk controller fails and writes bogus data to two places at once.

Nontechnical issues are just as crucial. How carefully will you label your ever-growing backup of precious digital photos? What happens in a catastrophe

(your home or office going up in flames)?

My strategy: Focus on making sure that truly important stuff—documents and e-mail—gets backed up daily. Every time I shut down my machine, an incremental backup automatically travels the Net to Connected.com's system at the other end of the country. True, home connections are generally far slower at uploading than downloading, but after the first upload, Connected is smart about transferring only what's new or different. And it lets my notebook retrieve files that I forgot to take with me on the road.

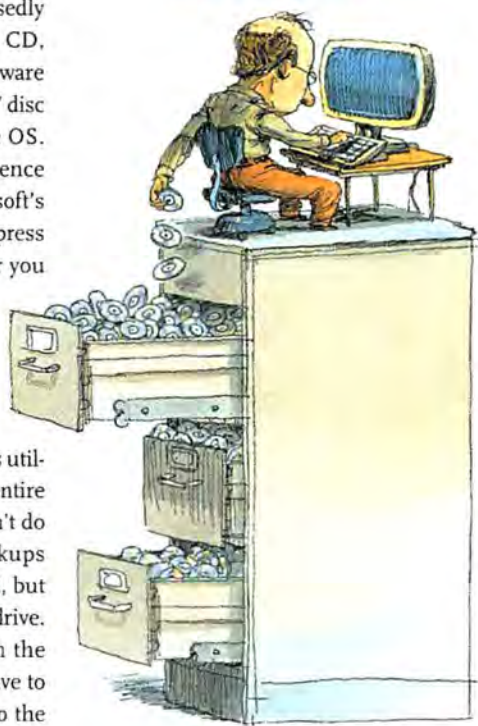
Connected doesn't want you to store giant audio or video files on its system. And if you use its password encryption and forget your code, you won't get your data back. Still, over the past couple of years, Connected has saved me far more than the \$15 a month it charges.

But when it comes to system and application software, I work without a net. If the disk dies, I'll probably spend a day or two downloading patches and resetting preferences, and I might even have to shell out a few bucks for lost software upgrade codes. Nevertheless, by the time the Big Crash occurs, I might just decide to go out and buy a new machine. My gamble insures that I don't waste time and money up front.

Your gamble may be different. I repeat: When it comes to backup, there are no right answers. But not doing anything about it is definitely the wrong one. ■

Visit find.pcworld.com/31595 to see additional columns by Contributing Editor Stephen Manes. He has been writing about technology for two decades.

Everybody needs a
backup strategy.
Here's mine.



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- 17" (16.0" v.i.s., 27dp) E773 Monitor
- 64MB DDR NVIDIA® GeForce4 MX® Graphics Card with TV-Out
- 48x CD Burner (CD-RW Drive)
- Integrated 5.1 Audio with Dolby® Digital Capability*
- Altec Lansing® ADA215 Speakers
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- 30GB Ultra ATA Hard Drive
- 24x CD-RW/DVD Combo Drive
- 16MB DDR ATI® MOBILITY® RADEON® 7500 AGP 4X Graphics
- Integrated Stereo Sound
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- 24x CD-RW/DVD Combo Drive
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- Integrated Stereo Sound
- 96Whr Li-Ion Battery (12-Cell)
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- Speakers Not Included
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