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# Trouble-Free Computing



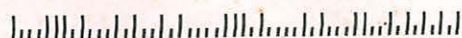
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**Lexmark C510n  
Network-ready Color Laser Printer**

- Print speed: up to 30 ppm black, 8 ppm color
- Resolution: 2400 dpi Image Quality
- RAM: 128MB std., 320MB max.
- Duty cycle: 35,000 pages per month
- 1-year limited LexOnsite warranty

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CDW 645554  
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AVAILABLE<sup>2</sup>

**OKI**

**OKI C5400n Network-ready  
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- Print speed: up to 24 ppm black, 16 ppm color
- Resolution: 1200 x 600 dpi
- RAM: 64MB std., 320MB max.
- Duty cycle: 50,000 pages per month
- Parallel, USB 2.0 and 10/100BASE-TX ports
- 1-year limited warranty with Overnight Exchange



**Ricoh Aficio® CL2000N  
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- Print speed: up to 16.9 ppm black and color
- Resolution: 1200 x 1200 dpi
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CDW 570441  
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SPECIAL OFFER AVAILABLE<sup>3</sup>

**brother**

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- Resolution: up to 2400 x 600 dpi
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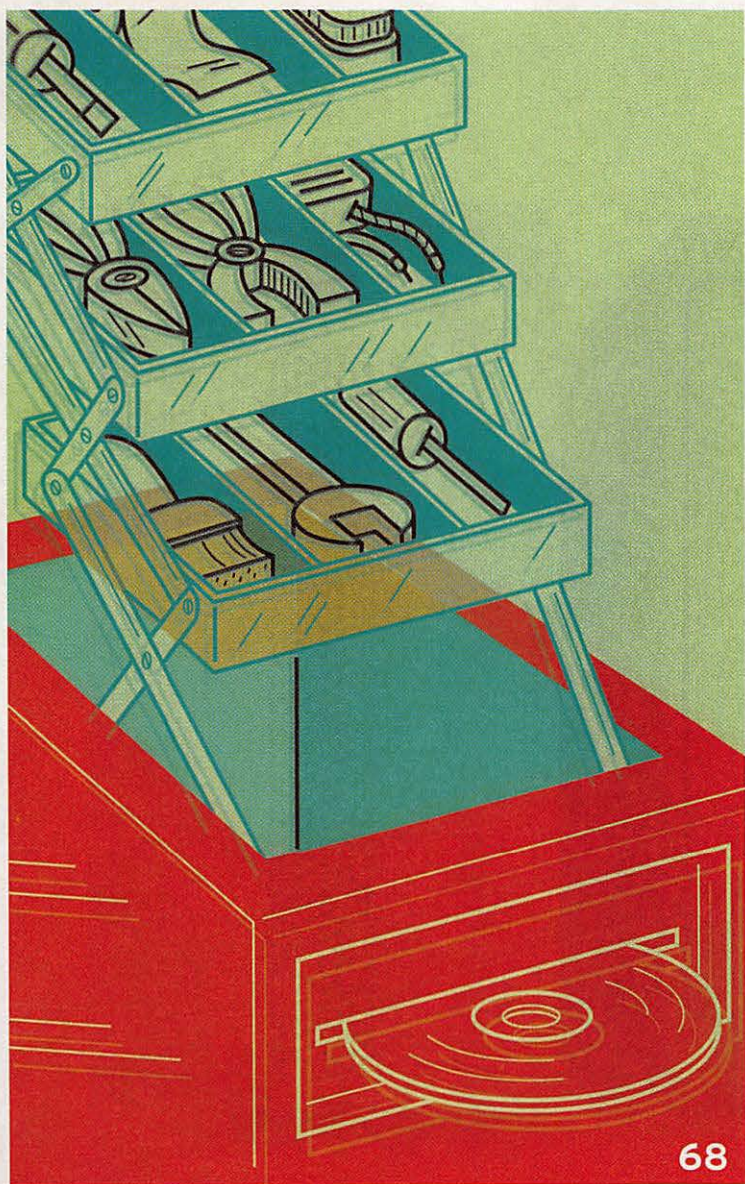
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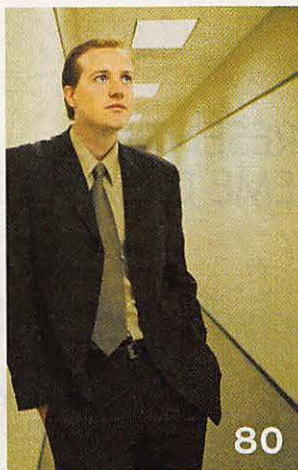


## COVER STORY

### 68 The Trouble-Free PC

As hardware and operating systems have evolved, so have the utilities you need to keep everything running at optimum efficiency. The PC World Test Center sorted out what four competing suites offer; we also appraise 18 specialized utilities for data and file recovery, security, system management, and more. Plus: tips on Windows' own utilities.

Cover illustration by Joe Zeff.



# PC WORLD

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## FEATURES

### INTERNET SERVICE PROVIDERS

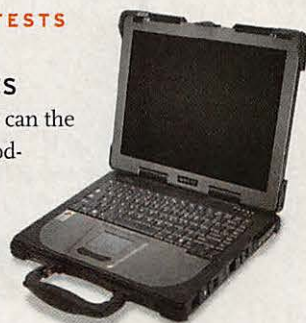
#### 80 The Best (and Worst) ISPs

Is your Internet service fast and reliable? Do you get spam-blocking protection, online storage, and other features? And when you run into trouble, is your provider ready and willing to help? Discover what 6000 *PC World* readers said about their cable, DSL, and dial-up providers, and learn how to get a great deal on your service.

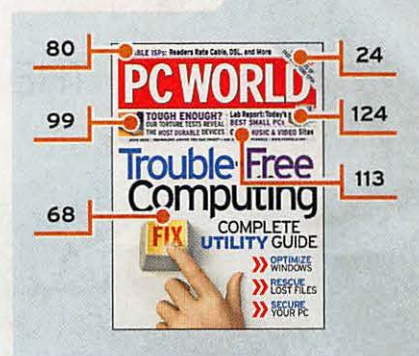
### DURABILITY TESTS

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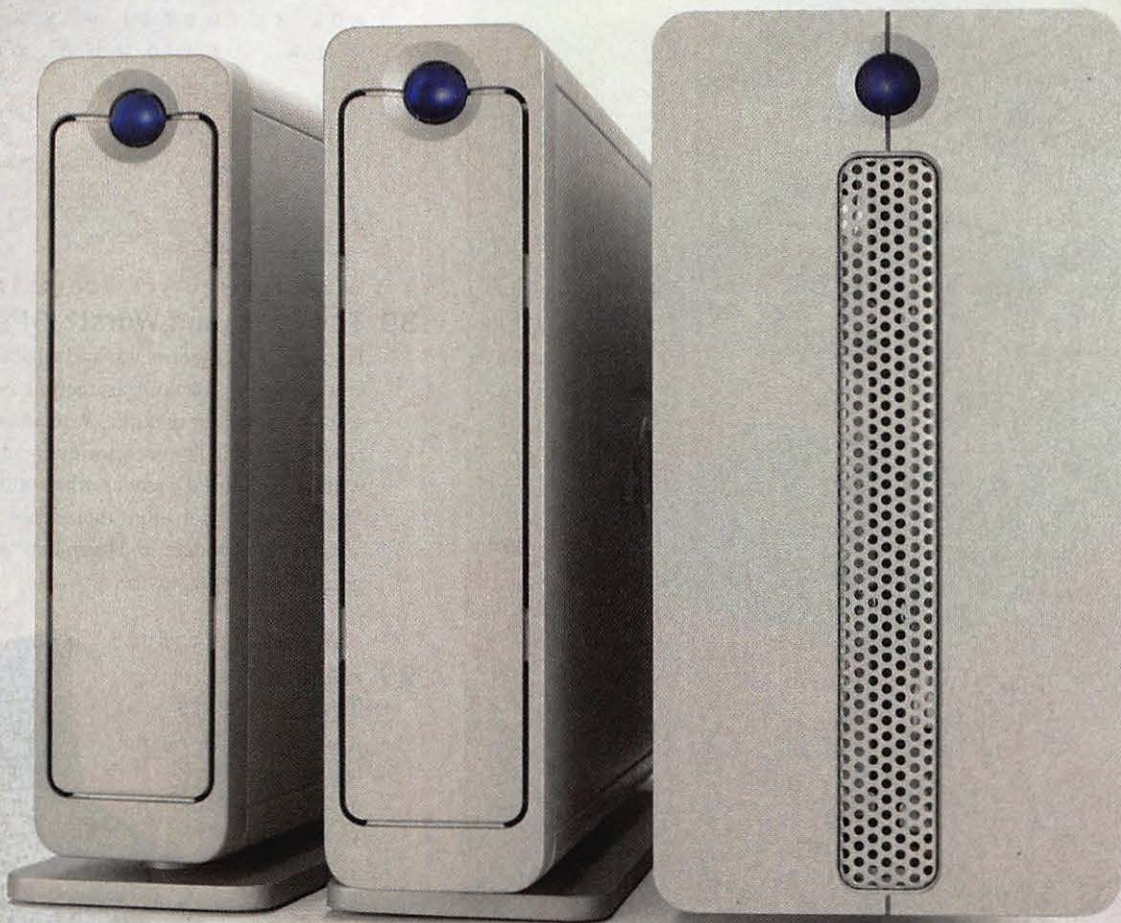
How much abuse can the typical mobile product withstand? To find out, we took a laptop, a digital camera, an audio player, a cell phone, a PDA, and a memory card, and really let loose: We swung them, dropped them, dumped coffee on them, ran them over, and then sent them through the wash. Find out which survived.



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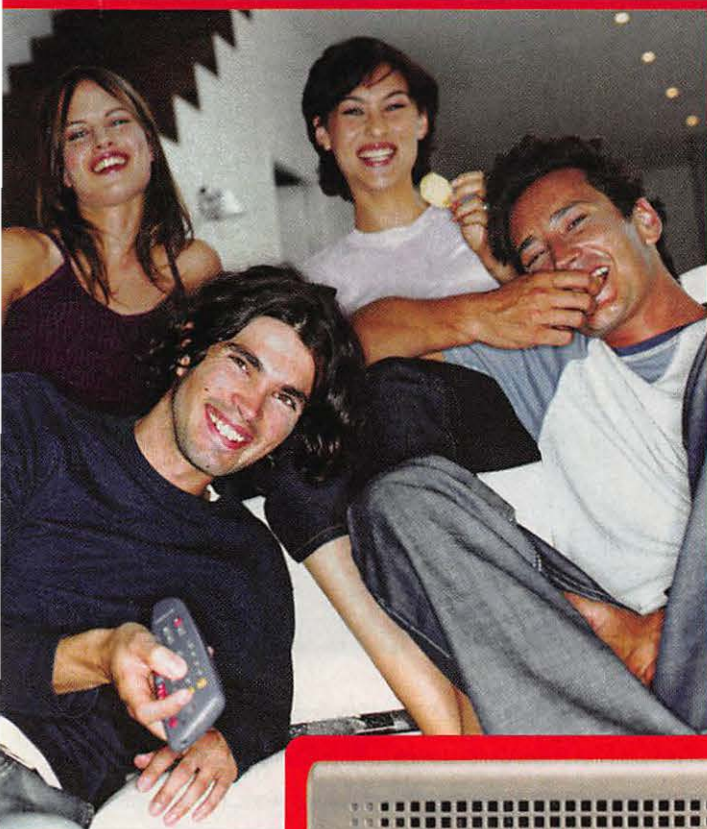
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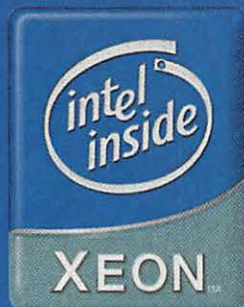
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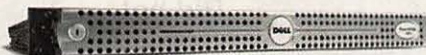
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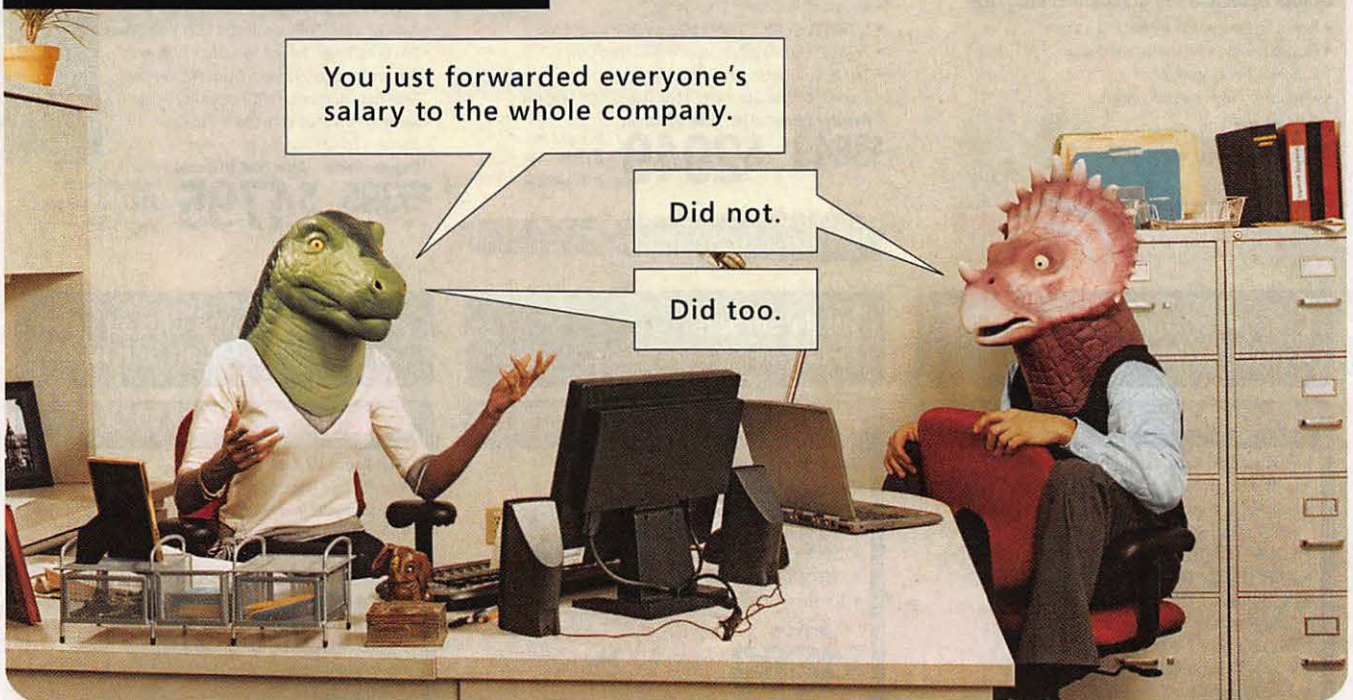
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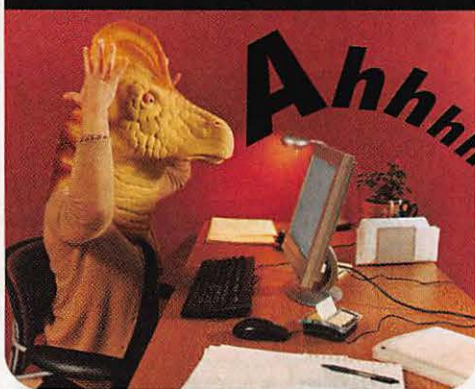
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# UP FRONT

HARRY MCCrackEN

## Multiple Platforms, Infinite Possibilities

How to thrive in two (or more) computing worlds. Plus: two new PCW offerings.

WHEN TRACEY CAPEN, our executive editor for reviews, went hunting for a new computer for his home network, he knew what he wanted: an affordable, secure, compact machine with enough hardware muscle and software savvy for demanding jobs like video editing. He found all of the

above in a Mac Mini. And while some people might consider a Macintosh a counterintuitive choice for a *PC World* reviews guy, the most startling thing about Tracey's decision was that it *wasn't* all that startling.

Nor was I dumbstruck to learn that *PCW* Web Producer David Lake's home office includes a Windows PC, a Linux system, and a machine that dual-boots between the two operating systems. "I'm not a Linux zealot," says David. Still, he loves the open-source OS's "tinkerability," not to mention its unbeatable price tag: \$0.00.

Time was when it seemed like everything from file formats to user interfaces conspired to discourage folks from adopting more than one computing platform. But lately we're hearing from more and more readers who lead happy, productive multiplatform lives. Herewith, a few tips



LINUX USER David Lake (left) and Mac Mini fan Tracey Capen.

from Tracey and David on doing just that.

**Buy a KVM switch:** Starting at around \$50, these gizmos let you use one keyboard, display, and mouse combination with two or more PCs. KVMs are invaluable, especially in crowded quarters. However, configuring them can be tricky, warns Tracey, who uses one with his Mini and with a Windows system: "You may

have to be patient and persistent—[setup] took me a good part of a morning."

**Try multemachine multitasking:** Even a potent PC may sputter if you throw too many jobs at it at once. So Tracey often starts the Mini going on a single grueling task (such as burning a DVD), and then switches to his Windows box for word processing, e-mail, and other less demanding work.

**Look for multiplatform software:** The Mozilla Organization's free Firefox browser and Thunderbird e-mail client, for example, perform like champs on Windows, Linux, and Mac. (Did I mention they're free?) Then there are Adobe's Creative Suite applications, such as Photoshop, all of which

come in feature-identical, file-compatible versions for Windows and Mac.

**Don't force a square OS into a round hole:** Top-quality business apps and cutting-edge games aren't plentiful in the Linux world. David says that he could resort to second-string substitutes or futz with tools that let you run Windows programs in Linux. But he finds it smarter simply to work in Windows when it's the right tool.

**Seek help:** Both Tracey and David marvel at the free expert advice available at forums and other online destinations. Don't know where to turn? Try entering "mac help," "linux help," and similar queries in your search engine of choice.

Speaking of multiplatform advice, look for more of it in these pages. (For instance, this issue's roundup of supercompact PCs on page 124 compares the Mini to its pint-size Windows brethren.) No, we're not de-emphasizing Windows, ►

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the platform that most of the world uses most of the time. But as *PC World* readers continue to investigate other environments, so will *PC World*.

Speaking of evolutionary developments, on page 113 of this issue you'll find a new section called *Digital World*. Well, not entirely new—it's actually an expanded version of our popular *Next Gear* section. And it takes the name of *Digital World*, the *PCW* companion publication that appeared four times in 2004 and 2005.

*Digital World* will cover the ever-evolving universe of new entertainment technology devices, including HDTV sets, networked media players, and digital video recorders—all of which talk to the PC in one way or another.

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# NEWS & TRENDS

EDITED BY EDWARD N. ALBRO

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## TV Limits Copies

THE FCC'S NEW BROADCAST FLAG WILL RESTRICT YOUR ABILITY TO COPY AND SHARE YOUR FAVORITE DIGITAL TELEVISION SHOWS AND MOVIES. **BY LAURIANNE McLAUGHLIN**

AIMING TO PREVENT mass piracy of digital TV programs, especially over the Internet, the Federal Communications Commission has mandated a new copy-protection scheme called the "broadcast flag." The FCC's ruling, which goes into effect this July, lets you make a backup copy of flagged shows, but no further copies.

The flag will be attached to "over the air" digital content—both network and local station programs, such as movies or prime-time series on NBC. Any device with a digital TV tuner can grab that content, whether it comes over an antenna or through a cable or satellite set-top box. The flag, basically a piece of code, will travel with any show that the broadcaster wants to protect.

In July, new consumer electronics devices—including



tuner cards for computers—that receive digital TV signals must ship with the ability to recognize the flag and to respect its copy restrictions.

Without the flag's protection, television networks ar-

gue, Hollywood won't license its blockbusters to them as broadcasts go digital. Unlike copies made on analog media, a digital copy retains the quality of the original, whether it's a first-generation copy or a

thousandth; digital copies are also simpler to make and far easier to distribute, as peer-to-peer networks have shown.

Media companies hope the flag will help alleviate the content piracy problem, which



costs the industry about \$3.5 billion each year, according to the Motion Picture Association of America's calculations.

A legacy clause will let current products continue to work as usual, ignoring the flag. But questions about how future DVD technologies will allow you to make copies of shows and whether these technologies will interoperate remain unsettled.

At press time, several consumer groups were attempting to block the FCC plan in court (see "Fighting FCC's Copy Controls," on page 22). Nevertheless, broadcast flag-compliant devices are rolling off production lines now.

### WHO SETS THE FLAG

A PROGRAM'S owner decides whether to flag it. If it's an ABC series, ABC makes the call. If it's a locally produced show—a newsmagazine, for instance—the local station can flag it, says Dennis Wharton, senior vice president of communications for the National Association of Broadcasters.

When will the flagged content appear? "I think there's a likelihood the network content will be flagged immediately [in July]," Wharton says. "The networks have a long-standing interest in protecting programming from mass distribution on the Internet."

### PRODUCTS AFFECTED

EXISTING EQUIPMENT will simply ignore the flag code and continue to work. But as

## WHAT'S CHANGING

### BROADCAST FLAG: THE BASICS



IN JULY broadcasters can begin sending digital TV signals with a "flag"—a piece of code that restricts copying—

to prevent mass piracy of TV shows or movies. New devices that receive over-the-air digital TV signals, like some HDTV sets and tuner cards, must recognize the rules. Here's what you need to know.

**1. The flag affects** digital content from broadcast networks like ABC, not cable networks like HBO (which have other content protection). But cable and satellite boxes must respect the flag on any show.

**2. A legacy clause** lets your existing products continue to work as usual.

**3. VCRs won't change**, since they are analog devices.

**4. Today's TiVo devices** won't change, but the next-generation HD TiVo will add encryption technology. The same is true for other hard disk-based recorders.

**5. Recordable DVD devices** will change when high-definition blue-laser recorders hit the U.S. market in 2006.

of July, any newly shipped device with an ATSC tuner (aka "off-air digital TV tuner") must have a demodulator chip that recognizes the flag. This includes some HDTV sets and tuner cards for both consumer electronics devices and PCs.

For a while, flag-compliant and -noncompliant products will coexist on store shelves, but buyers will have no easy way to know which is which.

All of Dell's HDTV products shipping from July on will be compliant, says Dell spokesperson Colleen Ryan.

But if you're shopping for a Media Center PC, you probably won't find many changed

products in July. While Microsoft's recent Windows XP Media Center Edition 2005 supports recording of over-the-air digital TV, some major PC makers have not yet added that capability. HP, for example, says its Media Center PCs and Extender products (which stream content around the house) work with regular TV only—not with digital—so they will be unaffected by the flag initially. You can expect things to change over the course of the year, however; consult prospective manufacturers to find out what their schedules are.

### TIME-SHIFTING AND BACKUPS

REGARDING your recording rights, remember a few key points. First, this FCC plan applies only to over-the-air digital programs, like a prime-time series or a movie shown on ABC, CBS, or NBC. It doesn't relate to pay-per-view or premium cable channel movies, or to original programs from the likes of HBO and Showtime.

Cable companies already may impose their own content restrictions, under the terms of an earlier FCC agreement. For example, you can record content obtained from HBO channels only once: You can burn it to a DVD, or save it to your TiVo or similar hard-drive recorder and then burn it to a disc. But once you make that DVD, the program gets erased from the TiVo. HBO's on-demand programming cannot be recorded at all; ►

## IN BRIEF

### Product Pipeline

**64-BIT WINDOWS DESKTOP OS SHIPS:** Microsoft's first 64-bit operating system for mainstream desktop PCs—Windows XP Professional X64 Edition—is shipping now. Owners of 64-bit systems can order the OS on CD by going to [find.pcworld.com/47780](http://find.pcworld.com/47780), and the first 64-bit systems with Windows XP X64 pre-installed should be available by the time you read this.

Meanwhile, Microsoft is encouraging software developers to submit their 64-bit applications to the Designed for Windows logo program, which will certify applications that should easily install and run on the new OS.



**COMPACT SECURITY:** For added Internet and network protection, look into ZyXel's ZyWall P1 Personal Internet Security Appliance. This small plug-and-play hardware firewall and VPN device for notebook users is about the size of a PDA and weighs only 4.5 ounces. The \$299 unit uses ethernet to connect to your laptop and is powered through your machine's USB port or the included power adapter. It can be used with Windows, Mac, and Linux systems. [find.pcworld.com/47775](http://find.pcworld.com/47775)



the company argues that since you choose the time the program plays, you don't need to record the show to view later.

Second, VCRs won't change, since they are analog-only devices: They record to analog videotape, and they have analog inputs like RCA and component ports. The FCC plan is strictly about digital copies.

Today's TiVo and hard disk-based or recordable-DVD devices won't receive hardware makeovers either, since they don't record in high-def yet and lack fully digital inputs.

Right now, TiVo users have three options: Save a recorded program to VHS tape, burn it to DVD, or use TiVoToGo to move it to a PC. Those rights will remain for current users, says Jim Denney, director of product marketing for TiVo. (TiVo already warns users that some shows may have copy protections that prevent their transfer via TiVoToGo.)

But TiVo has announced that its first HD device, expected to ship in early 2006, will be broadcast-flag compliant, Denney adds. And it will use a new security approach, called TiVo Guard Digital Output Protection Technology; it's one of 13 FCC-approved technologies to allow consumers to copy "flagged" content.

TiVo Guard will encrypt the content on the HD TiVo drive and play back the show using keys administered by TiVo. The process will be invisible to the average TiVo user but will prevent uploading of shows to the Net, Denney says.

The FCC says consumers will retain the right to make a backup copy of flagged content. But the way a particular device—whether it's TiVo or another recorder—handles

## LEGAL CHALLENGE

## FIGHTING FCC'S COPY CONTROLS

DON'T LIKE WHAT YOU hear about the broadcast flag? Neither do various consumer advocacy organizations, including the American Library Association, the Electronic Frontier Foundation, and Public Knowledge. At press time in April, these groups were fighting the FCC ruling in the Washington, D.C., circuit court of appeals.

Until the court renders a decision, expect flag plans to go forward as scheduled and flag-aware products to arrive in stores in July.

Disagreement over what the FCC can mandate lies at the heart of the case.

"Our contention is, the FCC can regulate broadcasts, but they can't regulate consumer electronics without express consent from Congress," says Art Brodsky, communications director for Public Knowledge. The V-Chip, for example, which lets consumers block some TV shows, required U.S. congressional approval, he says.

And because of the FCC plan's legacy clause,



the piracy loophole won't really be closed anyway, says Wendy Seltzer, an EFF attorney who is working on the case. "Anyone determined to pirate HDTV content already has the equipment."

The EFF further argues that the open-source community could be shut

out of future digital TV-related products due to the FCC plan's "Demodulator Robustness Requirements." The plan states that devices must be "robust" in preventing user modifications that allow access to the full digital TV stream, Seltzer says. This stipulation raises questions of how and whether open-source drivers—which are modifiable to some extent—could be used with flag-aware products, she says.

What happens if the advocacy groups win and the FCC plan is killed or stalled? The networks wouldn't broadcast the flag code. And the updated devices would simply have an unneeded, unused capability in the demodulator chip.

encryption to make such backups possible without allowing further distribution of the digital show will vary by manufacturer. How they'll all work together remains unclear.

## DVD COMPATIBILITY

TODAY, MOST INPUTS into recordable-DVD devices are analog, says In-Stat senior analyst Michelle Abraham. That means these products do not yet have to be modified to conform with the flag.

But next-generation blue-laser DVD recorders, like HD-DVD and Blu-ray devices, will record digital TV broadcasts and will have to recognize the flag. Blu-ray recorders are currently shipping in Japan and should hit the United States in

the next few years, while HD-DVD recorders are expected to ship in the U.S. in the second half of 2006, Abraham says.

Pioneer didn't have to modify its current lineup of DVD recording products, says Andy Parsons, the company's senior VP of product development.

But Pioneer is planning for future DVD recorders—high-def or with DTV tuners—and these will have to understand flag technology, he says. As with the next-generation TiVo devices, you'll be able to record and make a copy, but the content will be encrypted on the optical disc to prevent redistribution online, he adds.

"A lot of people expect that you're not going to be able to record anymore, but that's not

true," Parsons emphasizes.

As the industry finalizes standards for HD-DVD and Blu-ray recorders, one possible trouble spot looms: the encryption standard used. If multiple standards evolve, a recordable disc might work in your Blu-ray player, but not in your friend's player.

## ONLINE

## BUILD YOUR OWN HD DVR

IF YOU WANT to put together your own high-def digital video recorder without the controversial flag, go to [find.pcworld.com/47784](http://find.pcworld.com/47784) to see our step-by-step guide.





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 **TEXAS INSTRUMENTS**



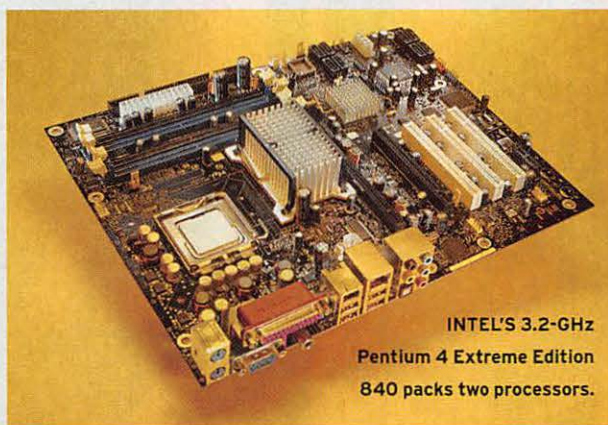
## PROCESSORS

# Intel's Dual-Core Chip Aces First Test

DESKTOP CPU WITH TWO BUILT-IN PROCESSORS DOES WELL AT JUGGLING MULTIPLE TASKS.

INTEL'S FIRST dual-core desktop processors are ready to ship, and our tests show they'll deliver some real benefit when you run software on them that's designed to take advantage of the two cores, or when you're performing multiple tasks simultaneously—running a virus check while surfing the Web, for instance.

As the name implies, dual-core processors incorporate two physical processors and two L2 memory caches into one piece of silicon, functioning, in theory, like two separate processors. Intel's first dual-core chip, the 3.2-GHz Pentium 4 Extreme Edition 840 (which carries 1MB of L2 cache per core), goes one step further by including Intel's Hyper-Threading technology in each core, which theoretic-



INTEL'S 3.2-GHz Pentium 4 Extreme Edition 840 packs two processors.

cally brings you a "virtual" second processor per core.

Intel's chips are part of a wave of dual-core processing. AMD has already released its dual-core Opteron chips for workstations and servers, and its dual-core Athlon desktop CPUs are due at midyear. Unlike Intel's dual-core chips, the new AMD dual-core pro-

cessors will not require new chip sets or motherboards, just a BIOS upgrade.

Like AMD's Athlon 64 chips and other new high-end Pentium 4 chips, the dual-core CPU has 64-bit support. Other dual-core desktop processors from Intel's new Pentium D line will arrive in May; the Pentium Ds will use mother-

boards with the forthcoming 945 chip set. Dell has already announced its first system with the dual-core P4 EE 840 CPU: its Dell Dimension XPS Gen5 gaming and multimedia PC. Other vendors should also have systems available by the time you read this.

PC World tested a preproduction reference system from Intel with engineering samples of the P4 EE 840 and the new 955X Express chip set (it contained an 800-MHz front-side bus, but alternatively it can support a 1066-MHz bus); 1GB of DDR2-667 memory; and a Sapphire Radeon 850XT graphics card. The system ran Windows XP Professional.

The dual-core unit showed a slight improvement overall on WorldBench 5 versus the same system equipped with a ▶

## TEST REPORT

## DUAL-CORE P4 SHINES ON MULTITASKING TEST

GAINS VARY BY TEST, but overall a system with Intel's Pentium 4 Extreme Edition 840 CPU beats a same-speed single-core P4 machine.

PROCESSOR	WorldBench 5 score <i>Faster</i>	TIME (IN SECONDS) TO RUN					
		Windows Media Encoder 9	Roxio VideoWave 1.5	Multitasking test <sup>1</sup>	Ahead Nero Express 6.0	Adobe Photoshop 7.0.1	Adobe Premiere 6.5
3.2-GHz Pentium 4 EE 840 (dual-core, HT <sup>2</sup> on)	95	340	274	590	457	357	479
3.2-GHz Pentium 4 EE 840 (dual-core, HT <sup>2</sup> off)	95	318	267	599	469	370	482
3.73-GHz Pentium 4 EE (HT <sup>2</sup> on)	102	338	269	581	477	331	441
3.2-GHz Pentium 4 (HT <sup>2</sup> on)	92	389	300	705	475	374	487
Average of four 2.4-GHz Athlon 64 FX-53 PCs <sup>3</sup>	104	370	316	615	540	311	401

**TEST CENTER** FOOTNOTES: <sup>1</sup>In the multitasking test, systems load various Web pages while encoding video with Windows Media Encoder. <sup>2</sup>HT = Hyper-Threading technology. <sup>3</sup>Average of previously tested systems. **HOW WE TEST:** All systems were tested with WorldBench 5 and ran Windows XP; for test suite details see [www.worldbench.com](http://www.worldbench.com). Application tests are part of WorldBench 5. All rights reserved. We used a reference system from Intel for all Pentium 4 tests, first running benchmarks with the dual-core processor, then replacing it with a 3.2-GHz P4 CPU, and then again with a 3.73-GHz P4 EE. **CHART NOTES:** For WorldBench 5, higher is better; elsewhere, lower is better. Bold denotes best score. Systems in italics are comparison units.





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3.2-GHz P4 (both with Hyper-Threading on). However, it trailed the 3.73-GHz P4 EE configuration and the averages of four previously tested 2.2-GHz Athlon 64 3400+ PCs and of four 2.4-GHz Athlon 64 FX-53 systems (see chart; for additional test results go to [find.pcworld.com/47804](http://find.pcworld.com/47804)).

But the new system truly showed its mettle in certain portions of WorldBench 5—specifically our multitasking test and our media tests with Roxio VideoWave Movie Creator and Windows Media Encoder. Both applications are multithreaded, which means

they can recognize and use the two cores as if they were two separate processors. On the multitasking test, the dual-core CPU produced its best result: It took just 9 minutes, 50 seconds to open numerous Web pages while converting video and music files to Windows Media format, whereas the single-core 3.2-GHz Pentium 4 took almost 12 minutes. It beat the Athlon systems' averages, too, and was a scant 9 seconds slower than the 3.73-GHz P4 EE unit.

The dual-core PC also performed well in the Windows Media Encoder test, in which

four WAV files and one AVI file are converted to Windows Media format: It shaved 49 seconds off the single-core 3.2-GHz P4's time of 6 minutes, 29 seconds, and essentially tied the 3.73-GHz P4 EE PC. In the VideoWave test, in which several AVI files are edited and converted to different video formats, the dual-core PC was 26 seconds faster than the 3.2-GHz P4 configuration (which took exactly 5 minutes) and 5 seconds slower than the 3.73-GHz P4 EE PC.

Interestingly, we found that the dual-core unit performed better on the multithreaded

applications with Hyper-Threading turned off than with the technology enabled.

### NOT TOPS YET

DON'T EXPECT dual-core to be the top performer today for games and other demanding single-threaded applications, says Kevin Krewell, editor in chief of *Microprocessor Report*. But that will change as applications are rewritten. For example, by year's end, Unreal Tournament should have released a new game engine that takes advantage of dual-core processing, Krewell says.

—Anush Yeghazarian

## SECURITY

# Rootkits: Invisible Assault on Windows

## THESE CLEVER ATTACKS ARE NOT NEW, BUT THEY POSE A GROWING THREAT TO WINDOWS PCs.

ACCORDING TO Microsoft, a type of malware common to Unix-based computers is now becoming more common and more sophisticated in the Windows world. The Trojan-horse-like programs—called rootkits—are extremely hard to detect and can grant a hacker complete control over your PC. Microsoft first warned of them at a security conference in February. Then utility vendor Sysinternals released a rootkit detector called RootkitRevealer, and antivirus vendor F-Secure launched a beta of Blacklight, a rootkit detector and remover that it plans to build into upcoming versions of its security products.

Like Trojan horse programs, rootkits install themselves by exploiting flaws in your PC's network security or by piggybacking onto e-mail messages or downloaded programs. They often open back doors for their remote puppet masters, who may be looking for credit card numbers, a broadband-connected spamming platform, or the simple thrill of the hack. But unlike standard Trojan horses, rootkits infiltrate the operating system at a deeper level, using security privileges to better hide themselves.

### DETECTION WORK

LIKE DETECTING viruses and worms, trapping rootkits is a cat-and-mouse game. Shortly after F-Secure released Blacklight, the author of a rootkit called Hacker Defender posted a video demonstrating a



new version of his rootkit defeating Blacklight and several other defensive tools, including RootkitRevealer.

Since rootkits can work with spyware, viruses, and other malware in blended threats, security vendors are sharpening the tools they'll need for detecting them. According to Russ Cooper, who founded and moderates the *NTBugtraq* newsletter, looking for the kinds of techniques that rootkits use is a good idea. But

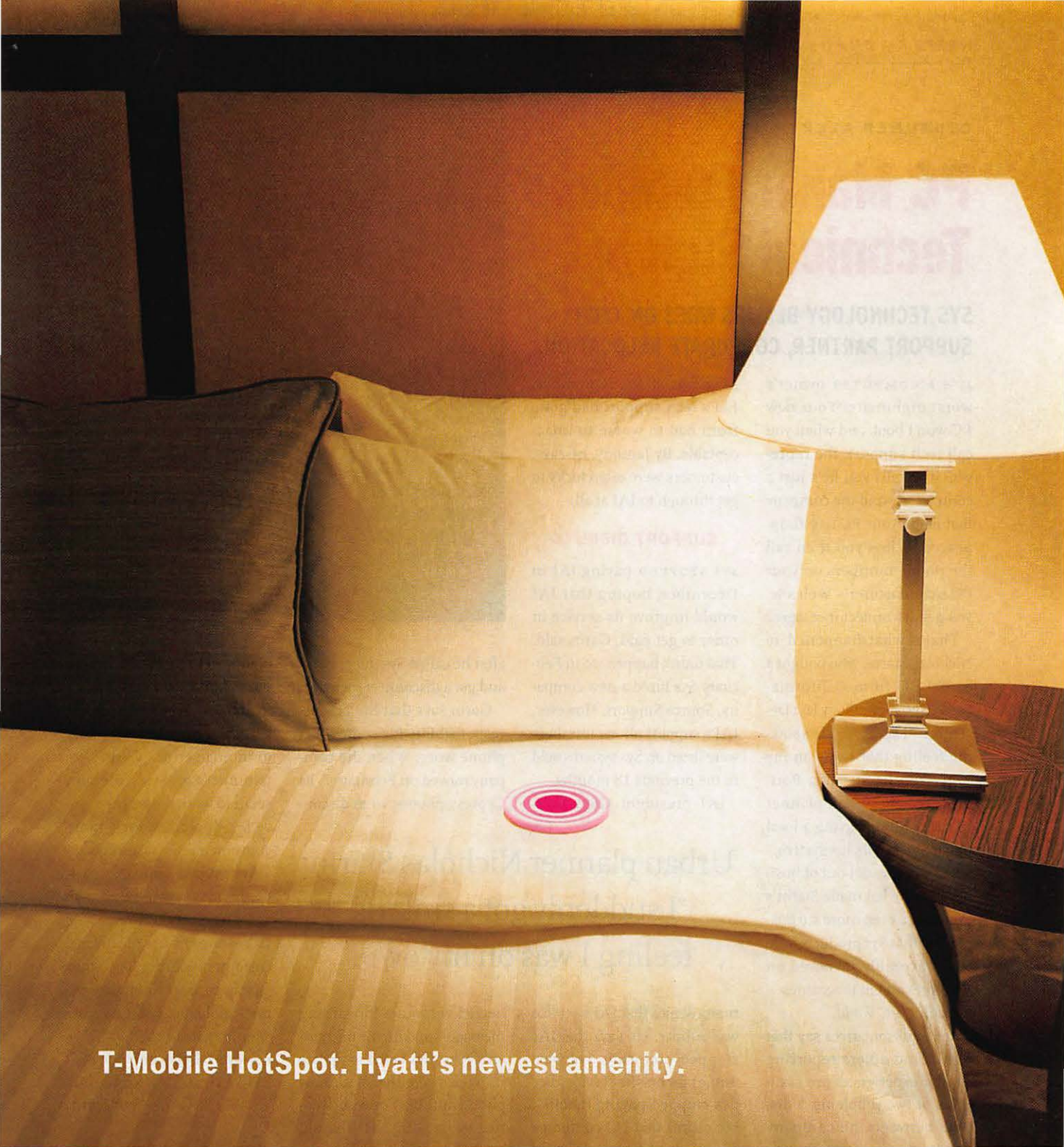
Cooper doesn't think that rootkit infections are on the rise. "Rootkits are no more prevalent now than they've ever been," he believes. And as for rootkit removal tools, Cooper remarks that "only a person with very little knowledge would try to remove a rootkit," adding that the one certain cure is to wipe the hard disk and reinstall the OS. Mikko Hypponen,

F-Secure's director of anti-virus research, mostly concurs with Cooper, but points out that Blacklight can address situations where no known good backup is available.

Rootkit detectors and anti-virus programs will continue to look for ways to outhack the hackers. But for now, standard security tools such as a good firewall and up-to-date antivirus protection are the best defense against rootkits.

—Scott Spanbauer





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## CONSUMER ALERT

# PC Maker Fumbles Technical Support

**SYS TECHNOLOGY BLAMES WOES ON TECH SUPPORT PARTNER, CORPORATE RELOCATION.**

IT'S A COMPUTER OWNER'S worst nightmare: Your new PC won't boot, and when you call tech support, the representative tells you he's just a contractor—and the company that made your PC has disappeared. When you then call the phone numbers on your PC manufacturer's Web site, you get disconnect messages.

That's what happened to Nicholas Starin, who bought a \$1300 PC from California-based Sys Technology last December. "I suddenly got a sinking feeling that I was on my own," recalls Starin, a Portland, Oregon urban planner who wound up paying a local repair shop to fix his system.

But Sys was not out of business. And what made Starin's experience even more surprising was that Sys products have been favorably reviewed on Web sites and in magazines—including *PC World*.

Sys representatives say that Starin and others reporting similar experiences are casualties of two problems: a dispute between the company and its third-party tech support firm, Integrated Automation International (IAI), and phone difficulties following the company's relocation from Cypress, California, to City of Industry, California, after its merger with computer parts maker Axper Technology.

Sys spokesperson Ace Garin

says that since September, IAI's tech support had gone from bad to worse to unacceptable. By January, he says, customers were often lucky to get through to IAI at all.

## SUPPORT DISPUTE

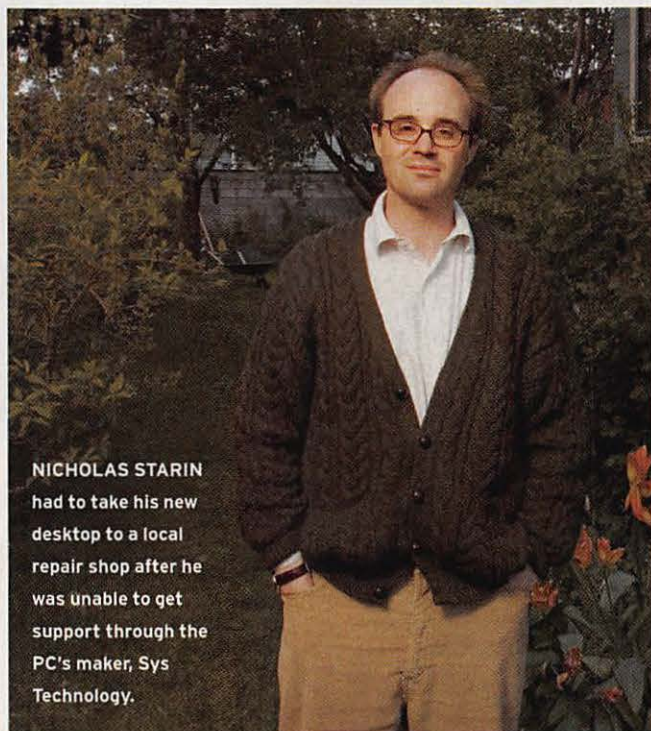
SYS STOPPED paying IAI in December, hoping that IAI would improve its service in order to get paid, Garin said. That didn't happen, so in February Sys hired a new company, Source Support. However, IAI's support phone numbers were listed on Sys systems sold in the previous 18 months.

IAI president Glen Sim-

**Urban planner Nicholas Starin:**  
*'I suddenly got a sinking feeling I was on my own.'*

mons denies that IAI's service was subpar. He says that IAI stopped honoring Sys warranties for on-site service after Sys stopped paying its bills, but claims that IAI continues to provide phone support for minor software problems.

"If a company stops paying the bills, we simply can't afford to continue offering tech support for them," Simmons says. He says that he directed his tech support staffers to tell Sys customers that the company had gone out of business



**NICHOLAS STARIN**  
 had to take his new desktop to a local repair shop after he was unable to get support through the PC's maker, Sys Technology.

after he called Sys in February and got a disconnect message.

Garin says that Sys accepts responsibility for some of its phone woes. When the company moved on February 7, its Cypress phones were discon-

equipped to handle calls from the public, Garin says. Failing to explain the problems on the site was a mistake attributable to "human error," Garin says. (Numbers on Sys's site now seem to work properly.)

"We apologize for any inconveniences," Garin says.

Sys's phone support issues, Garin adds, should diminish as its warranty contracts with IAI expire. In the meantime, customers who don't get satisfactory support when they call the supplied support number should instead call Sys Technology's toll-free number, 866/834-9155, and ask for Garin.

—Tom Spring

nected without a forwarding message—and for the next seven weeks, Sys failed to update its Web site either with new phone numbers or with a notice explaining that the old ones had been disconnected.

On February 21, Garin says, Sys sent e-mail with new contact information to 18,000 customers who had sent the company their addresses during registration. But Sys didn't post its new numbers on the Web immediately because its new telephone system was not

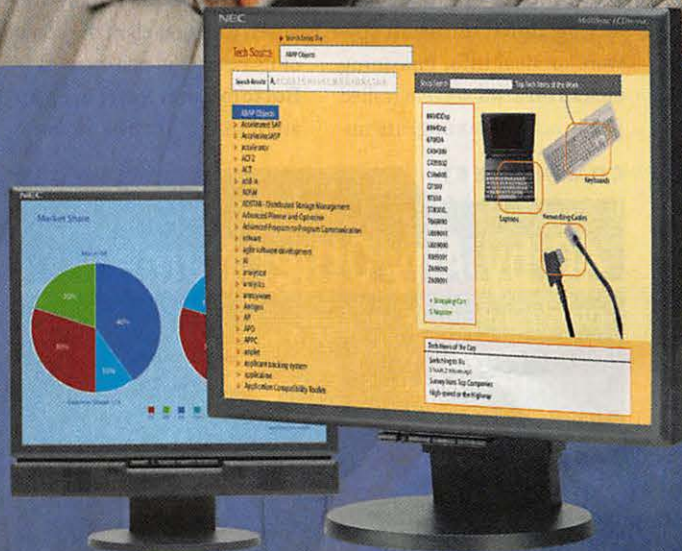
*Editor's note: In response to the support problems at Sys Technology, PC World has suspended coverage of Sys products in our Top 15 Desktop PCs rankings. Sys products may become eligible again if the company demonstrates that it has resolved the service issues discussed here.*



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**NEC**  
NEC Display Solutions



# PLUGGED IN

STEVE FOX

## Here Comes Phishing on Steroids

PLUS: YAHOO GETS EXCITING AGAIN, AND CELL PHONES GET MUSICAL.

### HARM ON THE PHARM

**The Buzz:** By now, we are all too familiar with phishing attacks, those phony e-mail messages that direct users to spoofed sites in an attempt to steal passwords and account information. Well, *pharming* is like phishing with a really big net—redirecting users even though they have typed a legit URL into their browser. Pharmers inject malicious code into a PC or even a DNS server on the Net. Then if you type a URL like the address of your bank, your compromised machine or server may redirect you to a bogus site designed to install spyware or steal info. Pharming attacks on DNS servers (called DNS-cache poisoning) are un-



common, according to Shawn Eldridge, chair of the Trusted Electronic Communications Forum, but “the greater concern is pharming of individual computers with Trojan [horses] and worms.” Users who innocently open an e-mail attachment can easily infect their machine with such malware, which can then plant the seeds of its nefarious pharm work.

**Bottom Line:** Never open an attachment from someone

you don't know. Always keep your antivirus software up-to-date. And floss regularly.

### YAHOO GETS ITS GROOVE BACK

**The Buzz:** Suddenly, Yahoo is on fire. In the last few months, the search giant bought ground-breaking photo-sharing app Flickr, launched Yahoo 360 (a blogging and social networking service), and introduced two new search engines (FareChase for travel and Creative Commons Search for material with “flexible copyright protections”). It has also struck deals with video and TV producers for exclusive content, debuted a Yahoo Research Labs page, and even rolled out a slick news redesign. And since Yahoo has opened up many of its search interfaces to third parties, you can expect some cool third-party Yahoo-based apps as well.

**Bottom Line:** Watch your back, Google. Yahoo is gaining on you.

### YOUR MP3 PLAYER IS RINGING

**The Buzz:** In a further attempt to establish the phone as a Tolkienesque One Device to Rule Them All, vendors are now pushing music

### HERE\NOW

**1 ROCKETBOOM.COM** Offbeat and fun, this daily 3-minute video blog skewers tech, news, and more.

**2 TRUMBA ONECAL-ENDER** You can sync this well-designed, easy-to-share Web calendar with Outlook ([trumba.com](http://trumba.com)).

**3 FILANGY.COM** This useful service indexes every Web search you run or page you visit, for one-click retrieval later.

**4 ANSWERS.COM** Like it says. Plug in a topic; get well-groomed information from multiple sources.

**5 ENERGY STAR MONITORS** Look for the label. A monitor built around the new spec could save you \$10 to \$40 per year.

phones—hybrid devices with integrated music players, digital rights management support, and removable memory for holding downloaded tunes. Models like Motorola's E725 (and its announced iTunes phone), Nokia's 6230 and 7610, and Sony Ericsson's coming W800 Walkman all offer higher fidelity than your garden-variety cell, but their minimal battery life (9 to 12 hours or so) will hardly impress the iPod set.

**Bottom Line:** I'm going to wait for the next generation—with built-in hard drives and streaming audio—to arrive before ponying up.



Contact PC World Contributing Editor Steve Fox at [steve\\_fox@pcworld.com](mailto:steve_fox@pcworld.com); visit [find.pcworld.com/31643](http://find.pcworld.com/31643) to read additional Plugged In columns.

### COMING TECH

## 4G by Any Other Name

EV-DO (Evolution Data Optimized), the zippy wireless broadband currently in U.S. trials, gets all the press. But HSDPA (High-Speed Downlink Packet Access) will be just as big a deal when it starts rolling out for phones and laptops late this year. A major step up from today's third-generation (3G) services, which typically push data at about 300 kbps, HSDPA-like Ev-Do should deliver up to 2 mbps, roughly equivalent to wired DSL. Which 4G should you go for? That depends on your carrier. Ev-DO is an upgrade of today's CDMA-based networks (like Verizon's and Sprint's); HSDPA works with GSM-based systems (like those from Cingular and T-Mobile).





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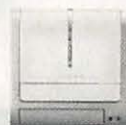
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# LETTERS

LETTERS@PCWORLD.COM

## INTUIT ACTION ANGERS USERS

## THE UNSUBSCRIBE OPTION DEFENDED

## PAPER SOLUTIONS HAVE THEIR PLACE



### FIGHTING SPYWARE

THANKS FOR APRIL'S "Spyware Stoppers." I had tried for months to remove a particular spyware program. Neither Lavasoft's Ad-Aware nor Safer Networking's Spybot Search & Destroy could get rid of the dozens of Registry keys and files that plagued my PC. After reading your review of Sunbelt Software's CounterSpy, I tried it. It quickly deleted all the spyware's files.

*J.W. Button, via the Internet*

SPYBOT SEARCH & Destroy is indispensable. I ran tests with Ad-Aware, CounterSpy, Webroot Software's Spy Sweeper, and Spybot. They all found the same spyware, but Spybot discovered and corrected 49 items—mostly tracking cookies—that the first three did not. It pays to use two or three different spy catchers.

*Jack Allen, via the Internet*

I'D BEEN USING Ad-Aware and Spybot daily, so imagine my surprise when CounterSpy found close to 100 instances of spyware. However—and this is the unanswered question—if CounterSpy found 100 items, what else is on my PC

that it couldn't find? What new and improved spyware program awaits us a week from now? I'm almost willing to return to my abacus.

*Harold Verdun, via the Internet*

COUNTERSPY WORKS well, except for one big problem: If you keep your PC running constantly, after a few days CounterSpy will use up *gobs* of memory. Recently it used over 100MB of RAM on one of mine!

Sunbelt Software's suggestion was to stop and restart CounterSpy every few days. Not acceptable in my book.

*John P. Kotuby, via the Internet*

### CRIPPLING QUICKEN

RE "INTUIT CRIPPLES Older Quicken Versions" [News and Trends, April]: I was recently forced to upgrade to the new version so as not to lose my online services. Discontinuing support of such a key feature in older versions is not just annoying, it should be illegal. Can you imagine the class-action lawsuit if a car maker were to build in the automatic disabling of a model's air conditioning unless the owner "upgraded" to the next model for oh, about the cost of a new car?

*William Korn, Newton, Massachusetts*

ANOTHER QUICKEN feature that Intuit disabled is the ability to download stock and mutual fund transactions to its sister software, TurboTax. I had to buy the new

Quicken for this reason. You can be sure that next year I'll claim the cost of my Quicken 2005 as a tax-filing expense.

*Mike Curran, Chagrin Falls, Ohio*

### ON-CALL TECH SERVICES

READING APRIL'S "PC Support on Call," I was perplexed at the so-so ratings for GeeksOnTime. I have over 30 calls logged with them during the past 90 days, and consider the service completely satisfactory. It has come to this overworked IT professional's rescue more than once.

*Arlene Sander, Total Computer Group  
Melville, New York*

THE HOUSTON, Los Angeles, and Boston guys all missed a good name for their companies: "Techs in the City."

*George Vacca, Danville, Pennsylvania*

### PHOTO PRINTER COSTS

THANK YOU FOR the analysis of ink and paper costs in April's "Photo Printers: The Price of Great Pictures." Since most printers are really just conduits for ink sales, printing performance is only half the story for consumers. My first printer had decent print quality, but tremendous ink cost. I switched to a sub-\$100 model and have been happy with its significantly improved ink economy.

*Eric Lobdell, via the Internet*

### DON'T BLOCK, UNSUBSCRIBE

IN APRIL'S *Hassle-Free PC*, Steve Bass explains how to blacklist unwanted e-mail messages by blocking them as spam or junk, and then blithely adds that "this trick also works for e-mail lists that you've subscribed to and no longer want."

That statement is irresponsible. Clicking *Unsubscribe* in my newsletter removes a person from my database, never to

### TELL US WHAT YOU THINK

VISIT [www.pcworld.com/pcwininput](http://www.pcworld.com/pcwininput) and rate this issue—you could win a \$500 gift certificate from Amazon.com. You'll need to provide the subscriber number from your mailing label to take this survey online. The site explains the official rules and also describes how you can participate in the drawing if you're not a *PC World* subscriber.



## ATTENTION IBM 75GXP Deskstar Hard Disk Drive Owners

If you purchased in the United States for your own use a new IBM Deskstar 75GXP hard disk drive either as a stand-alone hard disk drive or as part of a pre-assembled computer system, this Notice is to inform you of a proposed Class Action Settlement that could affect your legal rights.

Please read this Notice carefully. However, this is only a summary of the full Class Notice. You can obtain a full Class Notice, which explains the Settlement and your right to participate in it, by calling toll-free (866) 206-6428, or going online at [www.ibmdeskstar75gxplitigation.com](http://www.ibmdeskstar75gxplitigation.com).

**The Lawsuit:** A lawsuit is pending in the District Court of Burleson County Texas ("the Action") that may affect your rights. That lawsuit alleges that a family of hard disk drives manufactured by IBM, the "Deskstar 75GXP" suffers from a defect or defects that negatively affects the reliability of these hard disk drives. IBM denies plaintiffs' allegations and admits no wrongdoing. The parties have reached a proposed Settlement of the lawsuit. The purpose of this Notice is to explain the Settlement and advise you of your legal rights.

**The Settlement:** Subject to Court approval, the parties have agreed to a Settlement under which you may be entitled to receive either (a) a direct monetary payment, or (b) your choice of 25 blank CD-ROMs (with jewel cases) or a discount certificate for a future purchase at IBM.com.

1. The Class is defined as: "All persons and entities in the United States who, during the period March 15, 2000 through the date of Preliminary Approval purchased for their own use and not for resale or distribution (a) a new Qualifying 75GXP from IBM or from any entity authorized by IBM to sell such Qualifying 75GXP, or (b) a pre-assembled computer system that contained as a component a new Qualifying 75GXP. Excluded from the Class are IBM employees and those persons who have executed releases releasing IBM from liability concerning or encompassing any or all claims that are the subject of the Action."

2. Class Members are eligible to claim a check for \$100.00 if they can provide valid proof of purchase and can demonstrate that they have: experienced a Hard Disk Drive Failure (as defined in the Settlement); have not received a non-75GXP replacement hard disk drive or a monetary credit (whether from IBM or any other entity or person); and have not received a 75GXP as a warranty replacement, or did but can document that he or she reported to IBM a failure with the 75GXP warranty replacement hard disk drive and did not seek, or was not offered, another warranty replacement.

3. Class Members who can provide valid proof of purchase but are not eligible to claim a cash award may receive their choice of either (a) twenty-five (25) blank CD-ROMs (with jewel cases), or (b) a 15% Discount Certificate for a future purchase at IBM.com.

**What Are Your Rights?:** As a Class Member, you have three options:

1. **You Can Accept the Settlement.** If you wish to claim benefits under the Settlement, you **MUST** fill out and submit a Claim Form by **August 29, 2005**. You can obtain a Claim Form by either: (a) Phone--call the Settlement Administrator at (866) 206-6428, (b) Mail--send a written request for a Claim Form including your name and mailing address by regular mail to: IBM Deskstar 75GXP Litigation, c/o Berdon Claims Administration LLC, P.O. Box 9007, Jericho, NY 11753-8907, or (c) Internet--download the Claim Form and information at [www.ibmdeskstar75gxplitigation.com](http://www.ibmdeskstar75gxplitigation.com). If you fail to timely submit a Claim Form and do not exclude yourself from the Settlement, then you will be bound by the Settlement but will not receive any benefits of the Settlement.

2. **You Can Object to the Settlement.** If you believe the Settlement is unsatisfactory, you must file a written objection with the Clerk of the Court for the District Court of Burleson County Texas, 21st Judicial District and send copies to the following Class Counsel representing plaintiffs and defendant:

**Plaintiffs' Counsel:**

Kelly Puls  
Puls Taylor Woodson LLP  
2600 Airport Freeway  
Fort Worth, TX 76111

--or--

Jonathan Shub, Esq.  
Sheller, Ludwig & Bader  
1528 Walnut Street, 3rd Floor  
Philadelphia, PA 19102

**Defendant's Counsel:**

Stephen Gleboff  
Hughes & Luce  
1717 Main Street, Suite 2800  
Dallas, TX 75201

--or--

Shon Morgan  
Quinn Emanuel Urquhart Oliver & Hedges  
865 S. Figueroa Street, 10th Floor  
Los Angeles, CA 90017

Your objection must be filed no later than **June 17, 2005**. Please be advised that if the Court rejects your objection, you will still be bound by the terms of the Settlement.

3. **You Can "Opt-Out" of the Settlement.** If you do not wish to participate in this Settlement, you must provide written Notice so indicating. Such Notice shall include your name and current address, the statement "I DO NOT WANT TO BE A PART OF THIS SETTLEMENT. I UNDERSTAND THAT IF I AM EXCLUDED, I WILL BE INELIGIBLE TO RECEIVE ANY BENEFITS OR PROCEEDS OF THE SETTLEMENT. PLEASE EXCLUDE ME," and should be postmarked not later than **June 17, 2005**. Your written Notice should be sent to: IBM Deskstar 75GXP Litigation, c/o Berdon Claims Administration LLC, P.O. Box 9007, Jericho, NY 11753-8907.

Please be advised that if you "opt out" of the Settlement, you will not receive any money or benefits under the Settlement and will be responsible for any attorney's fees and costs should you pursue your own lawsuit.

**Settlement Hearing:** The Court will hold a hearing in the District Court of Burleson County Texas, 21st Judicial District, on **July 1, 2005 at 10 a.m.**, Burleson County Courthouse, 100 W. Buck, Caldwell, TX 77836 to determine: (a) whether the proposed Settlement is fair, reasonable and adequate and should receive final approval; and (b) whether the application of plaintiffs' attorneys' fees and expenses should be granted. Objections to the proposed Settlement by Class Members will be considered by the Court, but only if such objections are filed in writing with the clerk before **June 17, 2005**. Class Members who support the proposed Settlement do not need to appear at the hearing or take any other action to indicate their approval.

**Further Proceedings:** If the Settlement is approved by the Court, and unless delayed by appeals or unforeseen events, distribution of benefits will be made within 90 days of final approval by the Court of the Settlement. If the Settlement is not approved, the case will continue to be prepared for trial or other judicial resolution of the claims and defenses.

**Additional Information:** You may seek the advice and guidance of your own attorney if you desire. A complete copy of the proposed Settlement Agreement, may be examined during regular office hours at Office of the Clerk of the Court, Burleson County Courthouse, 100 W. Buck, Caldwell, TX 77836.

INFORMATION IS ALSO AVAILABLE AT [www.ibmdeskstar75gxplitigation.com](http://www.ibmdeskstar75gxplitigation.com).

PLEASE DO NOT CONTACT THE COURT OR CLERK FOR INFORMATION.

Dated: April 29, 2005

BY ORDER OF THE DISTRICT COURT OF BURLESON COUNTY TEXAS,  
21st JUDICIAL DISTRICT

hear from me again. And any legitimate e-mail newsletter will do the same.

Eric V. Orange, Founder/Developer  
Local Wine Events.com

## MORE IN PRINT, PLEASE

THE APRIL *Up Front* editorial discusses your online columns. But the dead-tree version of *PC World* has its place: I spend 75 percent of my day behind a computer screen; the other 25 percent has gaps that need filling by your print columns.

Rusty Ball, Kinnelon, New Jersey

## A LOW-TECH SOLUTION

APRIL'S *Answer Line* question on saving BIOS settings has an alternative solution: I just wrote the settings into a paper binder using a pencil. Very useful when my PC wouldn't work—I entered the magic numbers for my disk, and it booted.

Harry Laudie, Pierrefonds, Quebec

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

## CORRECTIONS

MAY'S "Podcasts Go Mainstream" (*News and Trends*) should have identified the audience size of EnduranceRadio.com's podcast as 15,000.

In May's "PC Drive Reaches 500GB" (*News and Trends*), we should have said Toshiba's current largest 1.8-inch (iPod-size) hard drive holds 60GB of data.

April's "Stretching Wi-Fi" (*News and Trends*) should have explained that the typical bandwidth of most broadband hookups is 1 to 1.5 megabits per second.

The April *Digital World* article "Plasma HDTV Upstarts Go Head-to-Head" should have noted that the ViewSonic VPW4255 does allow you to adjust red, green, and blue color levels individually.

In January's "Readers Rate the Manufacturers," the desktop and notebook ratings charts had mislabeled columns. In each chart, the third column from the left should have been labeled as "Failed Core Component," and the fourth column as "Failed Component."

PC World regrets the errors.



1984

2004



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# CONSUMER WATCH

ANNE KANDRA

**BUNDLING INTERNET, TV,  
AND PHONE SERVICES**

**PRIVACY WATCH: NEW  
SPAMMING TECHNIQUES**

**ON YOUR SIDE: FIXING  
A BROKEN KEYBOARD**

## One Stop for TV, Phone, and Internet

What are the pros and cons of letting a single company handle multiple services?



**HAPPIER NOW:** Dan McDermott dumped Verizon, his landline company, and signed up for VoIP phone service with Comcast, his cable TV and broadband provider.

A BATTLE IS BREWING in the communications industry, and it's headed straight for your home. I'm talking, of course, about the Cable Conglomerates versus the Telephone Titans, two heavyweights who are duking it out for control of your Internet access, TV, and telephone.

Cable companies, including Comcast and Cox Communications, are leading the charge by aggressively rolling out low-cost Voice-over-IP phone service as an alternative to standard phone company arrangements, packaging it with television and Internet service.

In response, traditional telephone companies such as Verizon and SBC are scrambling to prevent you from jumping ship. To beef up their services, they're rolling out digital networks that can handle VoIP service, and they're offering better deals than they used to on wireless plans. They're also partnering with satellite companies such as DirecTV to add entertainment options. A few companies are even developing their own fiber-optic networks for digital TV service. Verizon, for example, plans to launch its TV offering in some suburban Boston markets

later this year, and other traditional phone companies are likely to follow suit.

As telephone and cable companies start to look more and more alike, consumers face a whole new set of questions. Should you opt for an Internet service and cable TV combo or for a three-in-one situation (TV, phone, and Internet service)? What are the benefits of merging multiple services with one source? Or should you just stick with what you have and deal with a handful of companies separately?

Chances are, you'll save at least a few bucks a month by bundling services, but keep in mind that a particular company's offerings and prices may vary considerably, depending on where you live.

### ALL-IN-ONE SERVICE

FOR MANY PEOPLE, bundling services is the right move. For example, Dan McDermott, a 33-year-old marketing writer in Tewksbury, Massachusetts, was unhappy with his monthly bills from Verizon, his landline phone company: "I started noticing that my phone bills were increasing at an alarming rate," he recalls. "So when I got an offer from Comcast, my cable company, for digital phone service at a lower cost, I decided to give it a try."

McDermott pays Comcast about \$130 a month for local and long-distance calls, Internet access, and cable TV. Previously, his bills for the same services averaged closer to \$150. So far, McDermott says that he is happy with the arrangement and describes the quality of his VoIP service as "virtually indistinguishable" from Verizon's. His one gripe? "The monthly cable bill seems to have inherited the same habit of creeping up in price." ►



McDermott is referring to those niggling surcharges and rate hikes that monthly service bills seem to attract.

Bundling does have potential pitfalls. For starters, bundling telephone service through your cable company usually requires you to switch to VoIP service, which may not be the option you prefer. Some VoIP services still don't handle 911 calls directly (or at all); most don't provide features for the hearing-impaired or for faxing; and depending on how congested the provider's network gets, some VoIP services can suffer sound quality or connection lapses. Consider your current customer service experiences, too: If you're less than thrilled with the quality of the support from a service provider, think twice before giving that company more of your business.

Drawbacks aside, McDermott likes the convenience of consolidating services and reducing his number of monthly bills. "The phone is billed separately from the TV and Internet service," he explains, "but it's still a lot easier to keep track of the phone charges, since all the calling features—like call waiting and caller ID—are included [in the VoIP monthly fee]."

## PLANS FROM THE BIG DOGS

A TYPICAL NO-FRILLS plan that includes basic cable TV, phone, and broadband service may run between \$100 and \$150 a month. Examples: Comcast's all-in-one service plans will be somewhere around \$130 a month (rates vary depending on location). Cox Communications offers a

You'll save some cash by bundling services, but not as much as you'd like.

basic plan in Orange County, California, for about \$125 a month. Also, many cable companies offer incremental discounts: The more services you buy, the greater the discount. McDermott says he receives a \$5 discount on his cable bill for having added phone service. Similarly, BellSouth offers monthly discounts of between \$2 and \$10 for added services such as DSL and DirecTV for the first year of service.

For their part, traditional phone companies are working feverishly to put together competitive packages. Verizon, SBC, BellSouth, and Qwest offer bundles that include phone service, DSL, satellite TV entertainment packages, wireless phone service, and even features like home security systems. Combinations of unlimited local and long-distance calling, DSL, and multichannel DirecTV service cost less than \$150 a month in the areas I checked.

## SHOPPING AROUND

THINKING OF becoming a bundler? Here are a few tips to help you decide what's right for your scenario.

**Your Internet habits:** Start by prioritizing the services and features you want. If you spend a lot of time online or you need to upload large files on a regular basis, you'll probably want cable service rather than slower DSL service.

**Your phone requirements:** If you make a ton of long-distance or overseas calls, you'll save some money with a VoIP service. Find out whether you can make 911 calls. And ask what happens when the cable service goes down—and what you can do during a power outage. ▶

## PRIVACY WATCH

### How Spam Slips Past Your Defenses



ISPs ARE SMARTER than ever about eliminating spam before it gets to your inbox. And when a new ad for discount toner or prescription drugs does make it through, you quickly tell your spam filter that it's junk. So how come you're still getting so much of the garbage?

The answer is that as hard as the good guys are working to stop spam, spammers seem to be working even harder to create new armies of crafty, supervirulent messages that manage to slip through where they're least wanted. One technique involves simple trial-and-error. Spammers open their own e-mail accounts with the major ISPs and then send trial messages to their accounts to see what gets through. If one version gets caught by the ISP's spam filter, they tweak the wording—for example, with creative misspellings of keywords (V1@gr@ instead of Viagra, say), until they assemble a combination that bypasses many spam filters.

Spammers also try to manipulate the spam-filtering mechanism. One technique is to join community-based spam-filter networks.

These kinds of networks, used by antispam firm Cloudmark's SafetyBar and by AOL's built-in spam filter, create new filtering rules based on which messages the network's members block and which ones they allow into their inboxes. If most members label an e-mail as spam, the filters will stop it; but if lots of members say they want to see a message, the filter adjusts to let it through. So spammers sign up for hundreds of accounts, and when the spam messages they crafted are caught in the filter, they choose the "Deliver" button, signaling that the message wasn't spam.

Vipul Ved Prakash, Cloudmark's founder and chief scientist, says "We have 25,000 accounts trying to abuse the system." These tricks don't usually work, Prakash says. Users earn a "trust" score based on how well their judgments agree with those of the community as a whole, and spammers who try to game the system stick out like sore thumbs, he says.

Cloudmark may have largely shut down this particular trick, but there is no shortage of spammers trying new ones. When swarms of cockroaches look for ways to enter a well-stocked pantry, the chances are good that some will succeed. —Andrew Brandt



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**Wireless plans:** Don't neglect your cell phone. Many telephone companies (and some cable companies) will add wireless phone service, often with a discount.

**New provider:** Do your homework before you sign up with a new party. Call

or e-mail the support department to test its responsiveness. Seek feedback from relatives, friends, and colleagues who use the services. Sites such as Broadband-Reports.com offer great advice on customer support, service outages, and more.

**The fine print:** As always, don't sign up for any plan until you've read the fine print. Keep your eyes peeled for hidden fees or limited-time offers, and be aware of contracts (most satellite TV companies, in particular, require service contracts).

Sure, bundling services makes sense for many people. You'll certainly save some cash every month, though perhaps not as much as you'd like. And with the growing competition among providers, features should only get better and prices more attractive. So bundle up—but first, make sure that everything fits. ■

## ON YOUR SIDE

## Broken Keyboard Leg: Out of Luck?

**I** OWN A TWO-YEAR old Logitech Cordless Elite Duo keyboard. One of its foldable legs broke, so I contacted Logitech to order a replacement leg. To my surprise, the company informed me that it did not sell this part. I was told that I would either have to buy a new keyboard or do a search on Google to see if anyone had the part. What an atrocious policy! Replacing the leg would take, oh, about 5 seconds—if I could just get the part. Is this really Logitech's policy?

Lew Snyder, Jamestown, New York

**On Your Side** responds: Logitech explained that the Cordless Elite Duo is no longer being manufactured, so this part is unavailable for sale. The company offered Snyder a new keyboard or a replacement leg. Snyder requested the part. (Logitech located two parts in its offices.) Moving forward, customers who have problems like Snyder's will be offered parts (when available) or a replacement keyboard—as long as the product is still under warranty. Contact Logitech at 702/269-3457.

—Aoife M. McEvoy

Anne Kandra is a contributing editor, Andrew Brandt is a senior associate editor, and Aoife M. McEvoy is a senior editor for PC World. You can send them e-mail at [consumer-watch@pcworld.com](mailto:consumer-watch@pcworld.com). To read previously published Consumer Watch, Privacy Watch, or On Your Side columns, visit [find.pcworld.com/31703](http://find.pcworld.com/31703), [find.pcworld.com/31706](http://find.pcworld.com/31706), or [find.pcworld.com/31709](http://find.pcworld.com/31709), respectively.

PC WORLD

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# HASSLE-FREE PC

STEVE BASS

## Pack More on Your Screen and Desktop

These tips and free utilities will reduce your toggling, scrolling, and squinting.

IS YOUR MONITOR big enough? Right, mine isn't either. This month I'll show how to squeeze a few more pixels out of your display and add a spare monitor for a knock-your-socks-off productivity trick.

### SOFTWARE AND HARDWARE

**The Annoyance:** You buy a new 19-inch LCD monitor, but after setting it up you still don't have enough room to see all your open applications. Heck, even your spreadsheets are as cramped as they were on the old 17-incher.

**The Fixes:** If this gripe sounds all too familiar, I have an adjustment you can try and a couple of tools that you can experiment with.

- **Resolution Solution:** The first step is to bump up your monitor's resolution. (My 19-inch LCD is set to 1152 by 864 pixels.) But the hassle now is that the fonts are too small, right? To fix that problem, right-click the desktop, choose *Properties*, select the *Settings* tab, and use the 'Screen resolution' control. At the new resolution, the desktop icon font size might be too small, so crank that up a notch, too: Right-click the desktop, select *Properties*•*Appearance*•*Advanced*, press I to select 'Icon' in the Item drop-down list, change the font size, and click *OK*•*Apply*. Click *Advanced* again to fiddle with other screen elements in the Item list, but be careful to look at the results after making each change, and write down the original font size, because there is no easy way to revert to the default setting.

- **Go Virtual:** You can maximize your screen real estate by using virtual desktops. Virtual desktop programs let you place your open applications onto separate desktops and then quickly switch

among them. I place each of my current projects on a different virtual desktop, and because I see only a few apps on each one, my view stays as clear as an azure sky. For instance, I have Microsoft Word and Excel on one desktop, Eudora and my browser on another, and my file manager and Outlook on a third.

Your graphics board may have come with a virtual desktop tool. If not, you can use Microsoft's free Virtual Desktop Man-



ager ([find.pcworld.com/47509](http://find.pcworld.com/47509)), part of PowerToys for Windows XP; it does a decent job, but it's limited to four virtual desktops at one time. To launch the utility, right-click the taskbar and select *Tools*•*Desktop Manager*.

- **Double Vision:** There's a good chance that your graphics board includes both an analog output and a digital one. If so, try connecting two monitors to one PC. Setting mine up took me under an hour, and I swear it's made a huge difference here at Bass International. On a typical day I'll keep a Word document open on one monitor and a browser on the other.

Other times I'll run Eudora on one monitor and Maxthon, my IE browser plug-in, on the other. And the first time I expanded a big spreadsheet across two monitors, it brought tears of joy to my eyes.

My ATI video card easily handles two monitors (more on that in a sec), but if you'd rather not crack open your PC's case to replace the graphics board, here's a quick, easy device that does the trick: Tritton's \$80 See2 USB 2.0 SVGA Adapter ([find.pcworld.com/47511](http://find.pcworld.com/47511)) delivers instant display gratification by letting you connect the second monitor through a USB 2.0 port. Just install Tritton's driver, plug the second display into the See2 box, connect the device to a USB 2.0 port, and you're in business. See2 works fine with most programs—say, e-mail software, Web browsers, and word processors. Unfortunately, the performance is slower than what you'd get using a graphics card, which can cause trouble with applications such as Photoshop that require intricate pointer moves. And don't even try See2 for gaming—the lag will drive you bonkers.

If your existing graphics board has dual display outputs, simply connect the second monitor to the open port; Windows XP will recognize it automatically. If the board has only one port, and you're willing to spend some quality time inside your PC's case, ditch your current card and install one that has dual ports. My ATI AGP Radeon 7500 is almost three years old, works perfectly, and now costs about \$50 ([find.pcworld.com/47512](http://find.pcworld.com/47512)). ■

*Contributing Editor Steve Bass is the author of PC Annoyances, published by O'Reilly ([find.pcworld.com/43818](http://find.pcworld.com/43818)). Contact him at [hasslefreepc@pcworld.com](mailto:hasslefreepc@pcworld.com).*





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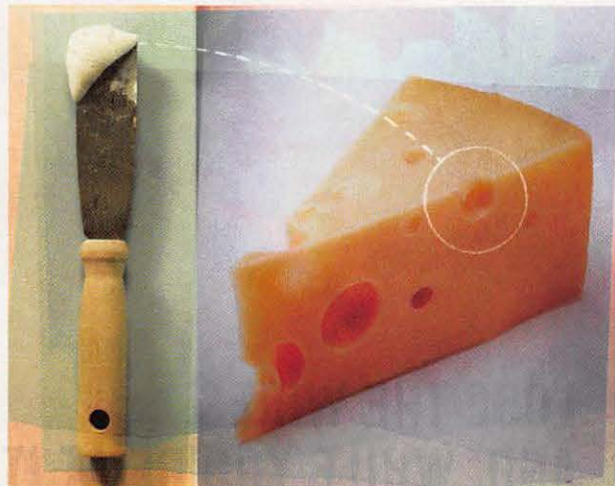




# BUGS & FIXES

## Serious Holes in Antivirus Software

McAfee, Symantec, Trend Micro, and F-Secure antivirus apps are affected.



WHAT IF THE bad guys found ways to infiltrate your computer through the very antivirus software that you thought was protecting you? Recent discoveries suggest that this scenario isn't so far-fetched.

If you have the latest antivirus definitions, aren't you protected? Not necessarily. Most programs have an automatic update feature that's turned on by default, but the tool may update only the definitions, not other software modules such as the scanning

engine. The good news: Several antivirus software companies have patched their programs to fix this vulnerability.

McAfee, for example, updated the scanning engine of its VirusScan software to block a hole that could let a cracker control your PC while the engine appears to be scanning for viruses. The vulnerability affects all versions of VirusScan and Internet Security Suite that run on all versions of Windows from 98 through XP.

McAfee says that most users

should have received its fix via automatic updates. But to be sure, confirm that you have VirusScan engine 4.4.00 or later. For more on the patch, visit [find.pcworld.com/47692](http://find.pcworld.com/47692).

At about the same time, Symantec fixed a similar hole in its Norton AntiVirus scanning engine. (For further information on the vulnerability, go to [find.pcworld.com/47693](http://find.pcworld.com/47693).) The scanner is included in such Symantec products as Norton AntiVirus 2004 for Windows, Norton Internet Security 2004 Professional for Windows, and Norton System Works 2004 for Windows (the 2003 and 2005 versions of these products aren't at risk because they lack the code that has the vulnerability). You can obtain the updated antivirus engine at [find.pcworld.com/47694](http://find.pcworld.com/47694).

Finally, Trend Micro and F-Secure have fixed a similar hole in their antivirus scanning engine. If you use Trend Micro programs, such as PC-cillin Internet Security, you need scanning engine 7.510 (for details, go to [find.pcworld.com/47696](http://find.pcworld.com/47696)). If you use an F-Secure product, such as AntiVirus 2004 or 2005, visit [find.pcworld.com/47697](http://find.pcworld.com/47697) to pick up the most recent version. ■

*Stuart J. Johnston is a contributing editor for PC World. Visit [find.pcworld.com/31580](http://find.pcworld.com/31580) to see more Bugs and Fixes columns.*

### IN BRIEF

#### Firefox Fix

MOZILLA patched a hole in its Firefox browser that, if left open, could let a rogue take over your PC. To find trouble, you'd need to click a link in a booby-trapped site or HTML e-mail. You're vulnerable if you have Firefox 1.0.1 or earlier. Head to [www.mozilla.org](http://www.mozilla.org) and get version 1.0.2.

#### Problem With a Microsoft Patch

SOME WINDOWS 98 and Me users who installed Microsoft patch MS05-002 (details at [find.pcworld.com/47698](http://find.pcworld.com/47698)) experienced crashes or slower performance in the aftermath. There's no patch for the patch yet, but Microsoft is studying the problems. For now, the workaround is to uninstall the patch—thereby reopening the original hole.

#### RealPlayer Update

REALNETWORKS fixed RealPlayer to block a hole that let attackers send poisoned .smil or .wav files. For details, visit [find.pcworld.com/47700](http://find.pcworld.com/47700).

### BUGGED?

FOUND A hardware or software bug? Tell us about it via e-mail at [bugs@pcworld.com](mailto:bugs@pcworld.com).

### WINDOWS MEDIA PLAYER 9 STILL VULNERABLE

AS I REPORTED IN APRIL, Microsoft said it was working on a Windows Media Player update to fix a security glitch that PC World's staff had found in versions 9 and 10 (for details, head to [find.pcworld.com/47698](http://find.pcworld.com/47698)). So far, the company has patched WMP 10, which runs on Windows XP only, but not version 9. Microsoft says that upgrading to version 10 is one fix for the flaw in version 9—but if you don't use XP, you're out of luck. The company is working on a patch but says it can't yet give an availability date.



ThinkPad recommends Microsoft® Windows® XP Professional.



**LOSE THE WIRES.  
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Intel® PRO/Wireless 2200BG (802.11b/g)<sup>(11)</sup>  
Microsoft® Windows® XP Professional<sup>(12)</sup>

14.1" XGA TFT Display (1024x768)

256MB DDR SDRAM<sup>(1)</sup>, 30GB Hard Drive<sup>(2)</sup>

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ThinkPad Carrying Case –  
Leather Attache

**\$130** (P/N 73P3600)

### ThinkPad T42 with Integrated Fingerprint Reader

Embedded Security Subsystem 2.0 –  
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Intel® Pentium® M Processor 725 (1.60GHz)  
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Microsoft® Windows® XP Professional<sup>(12)</sup>

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**Access Connections:** Switch between wired and wireless connections easily.<sup>9</sup>

**Embedded Security Subsystem 2.0:** Protect data and keep it private with our combined hardware and software solution.<sup>10</sup>



### ThinkPad T42

Perfect balance of performance and portability.

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Microsoft® Windows® XP Professional  
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Only .94" thin

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Accessories Included:

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Inside you'll find SafePORT Air Cushion Protection which adjusts to cradle X, T, R or G Series notebook computers.

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(monitor not included)

#### ThinkCentre A50

Sleek tower design.

Intel® Pentium® 4 Processor with HT Technology 3GHz

Microsoft Windows XP Professional

512MB DDR memory at 400MHz

Combo Drive, 80GB 7200rpm drive

6 USB 2.0 Ports (2 frontside)

3-yr limited warranty with 1-yr limited onsite service<sup>12</sup>

#### THINK EXPRESS MODEL

**\$899** (P/N 814723U)

#### ThinkCentre A50<sup>1</sup>

Sleek tower design.

Intel Pentium 4 Processor with HT Technology 3GHz

Microsoft Windows XP Professional

256MB DDR memory at 400MHz

40GB 7200rpm Hard Drive, CDRW

6 USB 2.0 Ports (2 frontside)

1-yr limited warranty with 1-yr limited onsite service<sup>12</sup>

#### THINK EXPRESS MODEL

**\$669** (P/N 814822U)

#### 17" ThinkVision L170 Flat Panel Monitor

This affordable monitor is ideal for worksheets, multi-tasking, and general business applications. Plus its small footprint is great for saving space.



**\$359** (P/N 6734AC0)



(monitor not included)

#### ThinkCentre A51P

Affordable performance.

Intel Pentium 4 Processor with HT Technology 3GHz

Microsoft Windows XP Professional

256MB DDR2 memory at 400MHz

40GB 7200rpm Hard Drive, CD-RW

8 USB 2.0 Ports (2 frontside)

1-yr limited warranty with 1-yr limited onsite service<sup>12</sup>

#### THINK EXPRESS MODEL

**\$799** (P/N 842721U)

#### ThinkCentre A50

Ultra Small form factor.

Intel Pentium 4 Processor with HT Technology 2.80GHz

Microsoft® Windows® XP Professional

256MB DDR memory at 333MHz

40GB 7200rpm Hard Drive, CD-ROM

6 USB 2.0 Ports (2 frontside)

1-yr limited warranty with 1-yr limited onsite service<sup>12</sup>

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(monitor not included)

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**Embedded Security Subsystem 2.0:** Protect data and keep it private with our combined hardware and software solution.<sup>10</sup>

**Rescue and Recovery:** Recover previously saved data in minutes with our one-button solution.

# ThinkCentre | ThinkPad®



# NEW PRODUCTS

EDITED BY TOM MAINELLI

## Big Monitors, Shrinking Prices

Dell and ViewSonic roll out more-affordable, giant-size LCDs—is it time to pull the trigger?



### LCD MONITORS

WHETHER YOU'RE PORING over spreadsheets or viewing DVDs, everything looks better on a gigantic wide-screen flat panel. Unfortunately, prices on 23- and 24-inch stunners

**DASHING DUO:** Dell's UltraSharp 2405FPW (left) carries a category-busting price; ViewSonic's VP231wb offers excellent image quality.

have traditionally been as jaw-dropping as their output (our November 2004 Editor's Pick cost a whopping \$2240, and

even the bargain-basement 23-incher cost \$1599). Now Dell is shaking things up with its **UltraSharp 2405FPW**, a 24-inch beauty that sells for an industry-quaking \$1199.

We examined the Dell along with ViewSonic's dazzling new 23-inch \$1749 **VP231wb**, comparing each model with our previous favorite, the 24-inch Samsung SyncMaster 243T (now priced at \$1699). Neither

newcomer quite measured up to the Samsung's overall still-image quality, but each surpassed it in other respects.

### BIG AND BEAUTIFUL

WITH ITS THIN black bezel and silvery half-moon stand, the 2405FPW looks every inch a Dell. The inches of most intense interest, of course, are the ones defined by the 24-inch display, with its 1920 by 1200 native resolution.

On test screens, our shipping 2405FPW showed sharp text and crisp, colorful images. The unit performed particularly well on our Web page test screen, producing easily legible text and subtle distinctions in shading. However, the brightness, which the vendor specified at 500 nits (units of luminance), seemed excessive at default settings, causing our test screen of several different brilliantly colored fruits to look a bit washed out.

The thin-bezeled ViewSonic VP231wb looks just a tad more businesslike; this model's understated, monochromatic, two-footed design is the display equivalent of a pinstripe

#### UltraSharp 2405FPW

Dell

★★★★☆

Displays text well, offers many extras, and sells for a song; but video playback falls a bit short.

Street: \$1199

[find.pcworld.com/47564](http://find.pcworld.com/47564)

#### VP231wb

ViewSonic

★★★★☆

Razor-sharp images in rich colors, plus a pivoting screen, make it a graphics pro's dream.

Street: \$1749

[find.pcworld.com/44040](http://find.pcworld.com/44040)



**52 LCD MONITORS**

Dell UltraSharp 2405FPW, ViewSonic VP231wb, Eizo MultiEdge L778

**54 ANTI-SPYWARE SOFTWARE**

Microsoft AntiSpyware, PC Tools Spyware Doctor 3.2, Sunbelt Software CounterSpy

**56 DVD BURNING SOFTWARE**

Roxio Easy Media Creator 7.5

**BUSINESS SOFTWARE**

Adobe LiveCycle Designer 7



**58 DIGITAL CAMERA**

Canon PowerShot SD500 Digital Elph

**OFFICE SUITE**

OpenOffice.org 2

**60 BACKUP SOFTWARE**

NovaStor NovaBackup Professional 7.2, StompSoft BackUp MyPC 6 2005 Edition

**62 NOTEBOOK**

IBM ThinkPad T43

**OCR SOFTWARE**

Iris Readiris Pro 10

suit. At its native resolution of 1920 by 1200, this 23-inch LCD monitor shows remarkable color and sharpness.

The shipping VP231wb we tested outperformed the Dell by a slim margin on our two real-world text screens: a Microsoft Word document and an Excel spreadsheet. On our photo test screens of a group portrait and fruit, the ViewSonic outdid even the reigning Samsung, showing vivid colors and natural-looking flesh tones with equal aplomb.

One clear business advantage to the ViewSonic is that the screen pivots on its axis. Accompanying the VP231wb is Perfect Pivot, ViewSonic's branded version of Portrait Displays' \$40 Pivot Pro software, which rotates the image accordingly. Vertical viewing gives a better picture of full document pages, Web sites, and some specialized business applications. Pivoting the screen also makes reaching the four USB 2.0 ports located on the unit's back easier.

Dell came up with the better idea for USB port placement, however, setting two of its monitor's four USB 2.0 ports on the left side of the bezel. The 2405FPW's nine-in-one media card reader, situated next to the bezel-mounted ports, could be a major boon

**QUICK TAKE**

**Eizo LCD Offers Listenable Speakers**

EIZO'S \$850 19-INCH **MultiEdge L778** LCD combines gorgeous color, great contrast, and smooth 12ms response with the best built-in speakers you're likely to find on a monitor.

Most integrated speakers are weak, but these are loud and bass-enhanced, and they actually sound pretty good. And while the L778 is far from inexpensive, it costs only \$50 more than Eizo's comparable speakerless unit.

Eizo calls the L778 a gaming LCD, but most gamers will probably turn up their noses at this corporate-looking display and its integrated



speakers. The space-saving design makes more sense for someone with a little extra cash who needs great sound and graphics in an exceptionally snug space, like a metropolitan live-work loft. [find.pcworld.com/47566](http://find.pcworld.com/47566) —L.B.

for a digital photographer.

The 2405FPW's numerous inputs should especially endear it to the entertainment-minded buyer. The monitor accepts analog and digital output from a PC in addition to composite, component, and S-Video from devices such as DVD players and camcorders. Each input is clearly labeled and numbered on the back; when you select an input, the corresponding number located on the front bezel lights up.

**SILVER-SCREEN DISAPPOINTMENT**

SCREENS THIS SIZE practically demand a movie viewing, so we watched a scene from *The Lord of the Rings: The Return of the King* on all three displays. Unfortunately, none

thrilled us. The Dell in particular showed slightly fuzzy images and somewhat dull colors when we played the DVD through our test computer's digital output.

When we connected a high-quality DVD player that uses component inputs, the colors improved but the image still lacked crispness. However, detail was impressive in dark areas, particularly the highlights on a black velvet cloak.

The ViewSonic has just analog and digital PC inputs—no entertainment inputs—so we tested it only with the digital output from the PC. Images appeared sharper and colors looked richer, but the subtle texture of the velvet didn't come through. As in our previous tests last November, the

SyncMaster 243T fared poorly at video playback. With its 25-millisecond response time (the Dell and ViewSonic offer a 12ms spec), the Samsung simply isn't made for motion. In short, if you seek a cinematic experience, don't toss out your TV just yet.

If you're an amateur digital photographer, the easy-access media card slot and USB ports of the Dell 2405FPW make it a great pick. If you're a graphics professional, the ViewSonic VP231wb will better suit your needs. If you're a spreadsheet wrangler, either will do, though the Dell's price is easier to swing. Or try a less costly, but less elegant, option: two smaller LCDs, from either vendor, placed side by side.

—Laura Blackwell



# Spyware Doctor Fails to Beat Favorites in Latest Tests

## SECURITY

PC TOOLS' \$30 **Spyware Doctor 3.2** promises to snuff out the most elusive adware and spyware applications, so we pitted the software against the latest versions of two *PC World* favorites, Microsoft's free **AntiSpyware** and Sunbelt Software's \$20 **CounterSpy**. Our results show that both AntiSpyware and CounterSpy re-

We expected our shipping version of Spyware Doctor to excel at this test, because its OnGuard feature monitors application behavior to stop this type of threat. However, Spyware Doctor failed to detect the keylogger during the infection stage, and then a system scan also missed it.

Neither the beta AntiSpyware nor the shipping CounterSpy (version 1.0.29) purport to detect such infections behaviorally, but each program ferreted out one of the Trojan horse's files. On the other hand, each failed to detect the in-memory process and the core file responsible for loading the keylogger. Evidently, all three apps have work to do in this area.

## THE BIG TEST

USING PROCEDURES WE established during April's "Spyware Stoppers" (see [find.pcworld.com/47716](http://find.pcworld.com/47716)), we tested all three tools on a PC we had infected with 45 adware and spyware programs.

In our previous tests, Microsoft AntiSpyware detected and removed 91 percent of infectious agents. Unfortunately, the current version does not detect or remove the controversial Hotbar and WhenUSearch adware programs, which caused its overall aver-



THE STILL-BETA VERSION of Microsoft AntiSpyware offers an intuitive wizard that helps make installation and setup a breeze.

age detection rate to drop to a still-impressive 89 percent.

For its part, CounterSpy continues to detect both Hotbar and WhenUSearch—and its detection rate in this latest round of tests increased from an 85 percent overall average to an excellent 92 percent.

Tests of Spyware Doctor proved time consuming. First, the app consistently stopped responding when the scan reached the 23 percent mark.

After some time we narrowed the problem down to ad software from Bulls-Eye Network; and once we used that program's own uninstaller, we were able to continue with the scan. (A few days after we contacted PC Tools about the BullsEye software glitch, the company issued a fix.)

Eventually we successfully completed a scan, and the end result was a respectable removal rate of 79 percent.

Subsequent scans with Spy-

ware Doctor proved less troublesome, although we disliked the app's repeated attempts to access the Internet. PC Tools says the software is performing a "license code validity check" to monitor the active copies of the software.



SPYWARE DOCTOR'S OnGuard components can be configured for customized protection.

main top choices, while Spyware Doctor has promise but needs some fine-tuning.

To start off our latest round of tests, we infected a system with a newer variant of the Banker Trojan horse, a key-stroke logger commonly used alongside phishing scams.



COUNTERSPY'S status window provides a quick overview of the most recent scan results.

And that is just one more reason why we recommend that you stick with either Microsoft's AntiSpyware or Sunbelt Software's CounterSpy over Spyware Doctor. Though the application shows real potential, right now it isn't in the same league as these two less-expensive competitors.

—Mary Landesman

### AntiSpyware

Microsoft

Beta software, not rated

High detection rates, along with outstanding ease of use, make this beta easy to recommend.

Free

[find.pcworld.com/47714](http://find.pcworld.com/47714)

### CounterSpy

Sunbelt Software

★★★★☆

Still our favorite, this highly customizable tool offers top-notch protection at a reasonable price.

Street: \$20

[find.pcworld.com/46684](http://find.pcworld.com/46684)

### Spyware Doctor 3.2

PC Tools

★★★★☆

App shows promise and offers decent detection rates, but it isn't yet at its competitors' level.

Street: \$30 to download

[find.pcworld.com/47715](http://find.pcworld.com/47715)

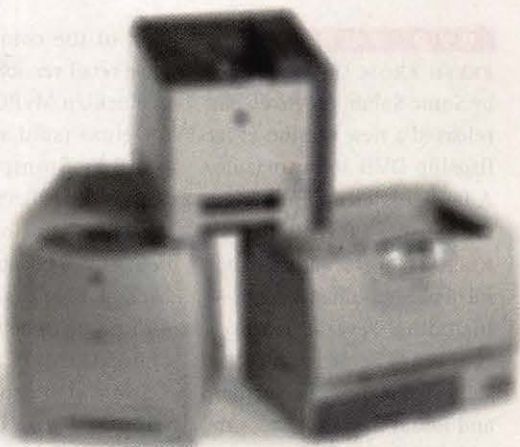


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# New Easy Media Creator Adds Tools, Offers Better Backup

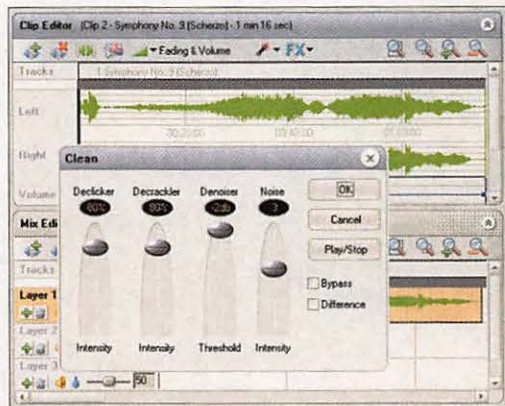
## DVD BURNING

FRESH FROM ITS acquisition by Sonic Solutions, Roxio has released a new version of its flagship DVD software suite. A fairly major upgrade from the capable 7.0 version, **Easy Media Creator 7.5** adds a handful of needed enhancements—including several features courtesy of Sonic products.

I tested a shipping version, and found the most welcome addition by far to be the inclu-

sion of the complete retail version of BackUp MyPC 6 Deluxe (sold at retail by StompSoft), which alleviates EMC's prior deficiencies in data backup. (See page 60 for our review of BackUp MyPC.)

Sonic also contributes MyDVD Slideshow—a limited version of the MyDVD authoring program optimized to produce photo slide-show discs. It's more focused and a bit easier to use than the suite's existing DVD Builder application, which remains. Roxio also replaces its crash-prone media playback module with



**EASY MEDIA CREATOR 7.5** provides numerous new features, including a tool for cleaning up digital audio.

the more capable and dependable Sonic CinePlayer.

Among the improvements to Roxio EMC's original modules are better audio editing—with features like automatic silence detection for separating tracks—and such helpful

upgraded restoration features as de-crackling, dehis-sing, declicking, and denoising.

There is also a new app for quickly converting DivX movies into burnable DVD files.

If you're an Easy Media Creator 7 fan, the new back-up utility alone is worth the \$30 upgrade fee, and the

other added features are compelling as well. While version 7.5 remains a bit ponderous to navigate and threatens to overwhelm users with choices, this solid update pulls EMC even with Nero 6.6 Ultra Edition.

—Jon L. Jacobi

## Easy Media Creator 7.5

Roxio

★★★★☆

The addition of a capable backup module means this suite does it all—albeit ponderously at times. List: \$100, \$30 upgrade for owners of version 7.0

[find.pcworld.com/47720](http://find.pcworld.com/47720)

# LiveCycle Automates PDFs

## BUSINESS SOFTWARE

AT FIRST GLANCE, Adobe **LiveCycle Designer 7** appears to be simply an easy-to-use tool for designing PDF forms that replace the paper ones you currently use. But it's actually capable of much more, and it may change the way you run your small business.

LiveCycle Designer (\$349

stand-alone; \$449 as part of Adobe Acrobat Professional 7) can help small companies participate in the automated trading networks that big corporations already use to manage orders, optimize warehouse inventory levels, and organize logistics services.

I tested a shipping version of the product and quickly mocked up a purchase order form, positioning boxes and lists onto a grid by dragging and dropping. Then I opened the XML schema definition of a purchase order specified by RosettaNet (a consortium of high-tech manufacturers), and dragged the appropriate data definitions to bind them to the fields in the form. Working in



**LIVECYCLE DESIGNER 7** lets you build e-business-friendly forms.

JavaScript, I added rules to ensure a completed form.

To use the resulting XML documents, I would need to exchange them with trading partners, using a protocol like Web Services or EDI. Adobe falls short of supplying the full solution here, but the company is courting outside pro-

viders to fill the service gap.

Mapping your company's business practices to the outside world's view of a standard document is tricky, even with LiveCycle. But the program is a major step toward bringing the benefits of e-business to smaller companies.

—Paul Jasper

## LiveCycle Designer 7

Adobe

★★★★☆

Buy this powerful form-design tool to help automate your business processes.

List: \$349 stand-alone, \$449 as part of Adobe Acrobat 7 Professional

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## Digital Elph Jumps to 7.1 Megapixels

### DIGITAL CAMERA

CANON'S \$500 **PowerShot SD500 Digital Elph** camera brings a slimmer profile and new frills to this popular line of point-and-shoot models. By borrowing the 7.1-megapixel sensor and Digic II image processor from the highly rated Canon PowerShot G6, the latest Elph gets a boost in resolution and performance.

The size reduction is partly due to a switch from CompactFlash storage to the smaller SD memory card. The camera's metal body has gained some sexy curves, too, but it still manages to accommodate a large (2-inch) LCD screen.

In my informal tests of a

preproduction model, I shot some sharp and highly detailed snaps. Even photos taken in low-light conditions came out looking bright, though I noticed some noise in the darkest areas. The camera powers up fast, and has no perceptible shutter lag.

A new stop on the mode dial gives you quick access to nine

scene modes that can help you with common subjects such as portraits and fireworks.

While not providing full manual control of shutter speed and aperture, most Digital Elph cameras (including the SD500) have a mode that lets you set white balance, ISO sensitivity, and exposure compensation. In addition, the SD500 provides a My Colors setting that allows you to adjust the way it captures colors. Some of these features, such as substituting one color for another, are essentially gimmicks, but I achieved some pleasant results by adjusting



**CANON'S DIGITAL ELPH SD500** features a slimmer profile but gains some sexy curves.

the balance among red, green, blue, and skin tones.

Like its predecessors, the SD500 is tough enough and small enough to carry everywhere you go. This upgrade makes getting top-quality photographs even easier.

—Paul Jasper

### PowerShot SD500 Digital Elph

Canon

Preproduction model, not rated

A new processor and higher resolution help ensure great-looking photos.

Street: \$500

[find.pcworld.com/47666](http://find.pcworld.com/47666)

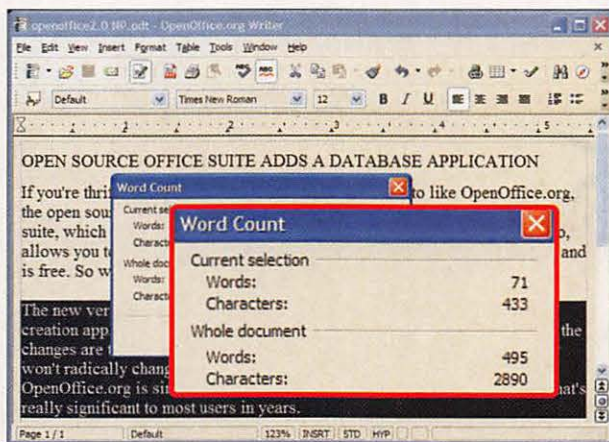
## OpenOffice.org Offers a Suite Alternative

### OFFICE SUITE

IF YOU'RE THRIFTY and you use an office suite, it's hard not to like OpenOffice.org. Version 1 does most things Microsoft Office can do. Plus, it's free. So what's to improve?

**OpenOffice.org 2**, still in beta, adds a database-creation application similar to Microsoft Access. Otherwise, many of the changes are small tweaks that probably won't radically alter the way you work.

In addition to Base, the database app, OpenOffice.org 2 includes Writer (a word processor), Calc (a spreadsheet application), Impress (a presentation program), Math (a tool for creating mathematical formulas), and Draw (a nifty drawing program). The beta is available for Windows, Linux, and Mac operating systems. I



**WRITER FEATURES AN easier-to-find word-count tool that will tell you the number of words in the document and in a specific selection.**

tested the Windows version; for our take on the Linux one, see [find.pcworld.com/47643](http://find.pcworld.com/47643).

The suite's developers seem to have tried to make Base look and act just like Access—unfortunate, since Access is so frequently baffling. A better

plan might have been to create a database application similar to FileMaker Pro—that is, not like Access but much easier to use.

As for the tweaks, Calc now supports as many rows of data as Excel does, eliminating one

problem for serious number crunchers. And if, heaven forbid, you're a fan of transitions and sounds in between your slides, you'll love that Impress now has buckets of them.

While OpenOffice.org 2 certainly includes features worth having, the version I tested remains a work in progress. I experienced several crashes, and the file-recovery system had some glitches.

But once a final edition of version 2 is released (there's no firm schedule), you may doubt the wisdom of paying \$300+ for Microsoft Office.

—Edward N. Albro

### OpenOffice.org 2

OpenOffice.org

Beta software, not rated

Offers everything you need in an office suite—including a database application—for free.

Street: Free to download

[find.pcworld.com/47560](http://find.pcworld.com/47560)





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# Even Better Backups

## BACKUP SOFTWARE

I RECENTLY TESTED the latest shipping versions of two popular backup packages: NovaStor's **NovaBackup Professional 7.2** and StompSoft's **BackUp MyPC 6.0 2005 Edition**. Both have undergone minor face-lifts and feature lots of small, worthwhile improvements. But NovaBackup goes one step further by adding disaster recovery features, and now this application is barking with the big dogs.

NovaBackup 7.1's lack of a disaster recovery feature left it an also-ran in our September 2004 "Better Backups" roundup (see [find.pcworld.com/47710](http://find.pcworld.com/47710)). Version 7.2 takes care of this oversight, enabling you to restore the contents of your hard drive—even when you can't boot into your operating system—if you use Windows 2000, Windows Server 2003, or Windows XP.

Kudos to NovaBackup's visual makeover, too: The new

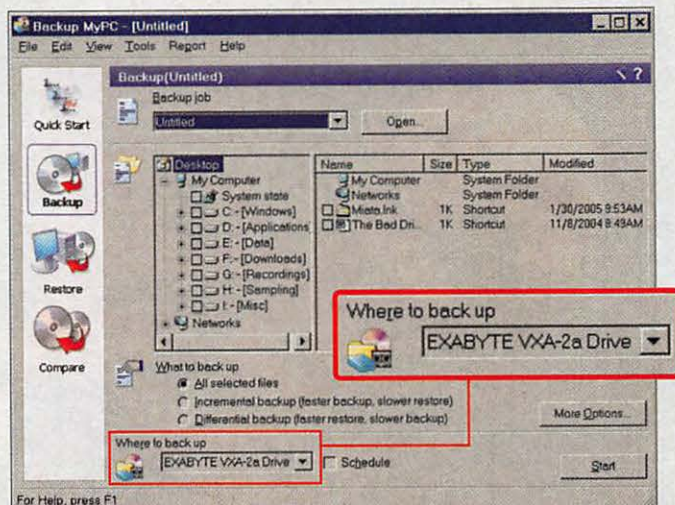
graphics are classier than the old HTML look, yet the interface retains its predecessor's intuitive overall design and workflow. It's as easy to use as BackUp MyPC and far easier than the powerful but occasionally challenging Dantz Retrospect Professional 6.5 (see [find.pcworld.com/47712](http://find.pcworld.com/47712)). It supports an array of storage devices, too: tape drives, hard drives, optical media, and now double-layer recordable DVDs and Iomega's Rev drive.

My only complaints about NovaBackup are decidedly mild: It can't perform uncompressed native file backups, and you have to manually edit (using Windows Notepad) the lists that include or exclude files from a backup.

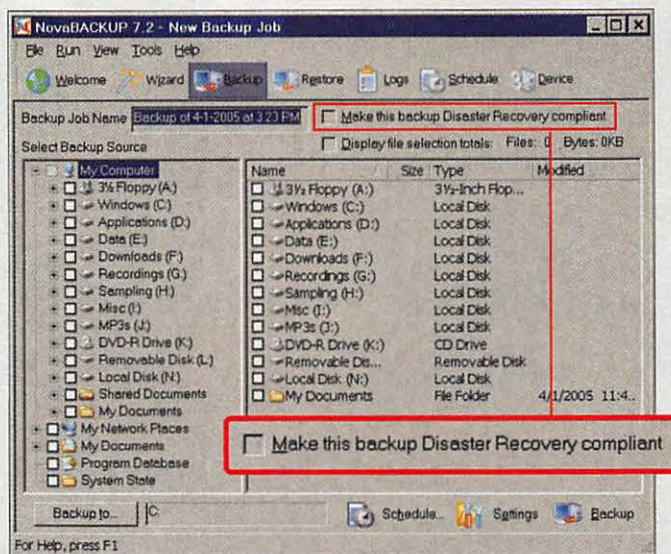
## MINOR UPGRADES

THE CHANGES TO StompSoft's BackUp MyPC are less far-reaching. BackUp MyPC 6 also features a new look; but while first-time users may appreciate the friendly icons and the direct access to wizards on the new startup screen, I'm left wondering why the program's designers (StompSoft publishes the product for Sonic) chose to mess with a good thing. In handling the utilitarian task of backing up, the old tabbed interface worked virtually to perfection. Now, reaching the backup page entails performing an extra step, and your options are needlessly restricted to the task at hand.

All told, the tweaks to the interface make the new version of BackUp MyPC marginally easier to learn—yet slightly more difficult to use—than previous versions were;



**BACKUP MYPC 6** supports new devices such as dual-layer DVDs, and offers the option to create backups that span multiple hard drives.



**NOVABACKUP 7.2** adds a disaster recovery feature, allowing you to restore the contents of your hard drive even when your OS won't boot.

## BackUp MyPC 6 2005 Edition

StompSoft

★★★★☆

Intuitive backup program gets a minor face-lift but still lacks uncompressed native file backup. List: \$69 download, \$79 boxed, free upgrade for current users [find.pcworld.com/47667](http://find.pcworld.com/47667)

## NovaBackup Professional 7.2

NovaStor

★★★★☆

Lower price plus new disaster recovery features make NovaBackup a good value. List: \$70, \$25 upgrade for current users [find.pcworld.com/47668](http://find.pcworld.com/47668)

still, it's far better than Dantz's Retrospect on both counts.

Beyond the altered interface, this is a relatively modest upgrade of version 5, contributing support for new devices such as dual-layer 8.5GB DVD burners as well as improved disaster recovery for PCs running on Windows XP (with Service Pack 1 or SP2) or Windows 2000 (with SP4). Other new perks include the ability to resume DVD backups interrupted by a bad disc, and the option to create backups that

span multiple hard drives.

Alas, there's still no uncompressed native file backup for hard-drive users, though the company says it will address that shortcoming in a future version. But BackUp MyPC now has a more-than-worthy competitor in NovaBackup 7.2, which offers broader support for storage devices and costs about the same. Most users will be fine with either application, but NovaBackup 7.2 is the one I'll be using.

—Jon L. Jacobi



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# IBM's Pricey, Powerful ThinkPad

## NOTEBOOK

IBM'S THINKPAD T series notebooks are popular with business users, and with good reason: They're thin and light, have loads of features, and deliver swift performance. The line's latest addition, the **ThinkPad T43**, is no exception. I examined a shipping unit and found it a pleasure to use.

Like its predecessor, the T42, the T43 comes with a biometric fingerprint slide reader. The T43's sensor requires that

you slide your finger three times; those three readings are combined into one image that the system uses to identify you. Getting the hang of swiping my finger in the exact same manner for it to register properly took me a few tries, but after that it worked well.

At just 5.5 pounds on its own (6.4 pounds with its AC adapter), the T43 is well suited for travel. It's outfitted with a multipurpose bay (which housed a multiformat DVD drive in our test unit), gigabit ethernet, and 802.11g Wi-Fi. However, it lacks a FireWire port and a media card slot.

The T43 carries the usual great ThinkPad keyboard, accompanied by both touchpad and eraserhead pointing devices. For this notebook,

**IBM'S THINKPAD T43 is lightweight and features impressive battery life.**

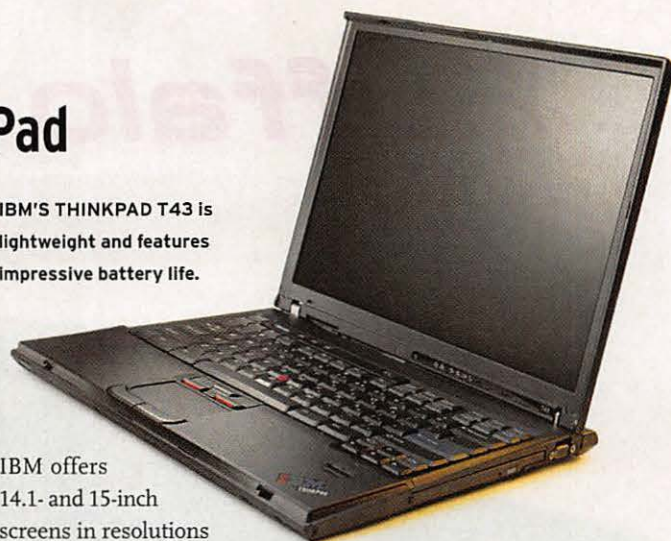
IBM offers 14.1- and 15-inch screens in resolutions of 1024 by 768 or 1400 by 1050, plus a 1600-by-1200-resolution 15-inch screen. Our test unit had the 1400-by-1050 14.1-inch screen, which supplied plenty of real estate.

In our tests the T43 managed an impressive 5 hours on one battery charge. Our unit came equipped with a 1.86-GHz Pentium M 745 processor and 512MB of RAM, and its WorldBench 5 score of 84

proves that it is zippy enough to handle most tasks.

Pricing for the ThinkPad T43 starts at \$1499, but our test unit topped out at \$2199. The T43 is not for the price-conscious, but if I had to take a trip tomorrow, I would bring it along. It's secure and light, and its long battery life makes working on the go a breeze.

—Kalpana Ettenson



## ThinkPad T43

IBM

★★★★☆

Expensive notebook provides plenty of features that business users will appreciate.

List: \$2199

[find.pcworld.com/47669](http://find.pcworld.com/47669)

# OCR Upgrade Fast but Not Foolproof

## PRODUCTIVITY

TRANSFORMING PRINTED documents into editable text requires an optical character recognition program. The basic OCR apps that come

with most scanners are fine for simple tasks, but more-complicated documents require a full-featured package like Iris's **Readiris Pro 10**.

The most notable improve-

ments in version 10 of this \$130 application are two new recognition engines—one for hand-printed text and the other for bar-code reading. The latest Readiris also supports a wider variety of output formats; has a simple, wizard-driven interface; and offers extensive PDF support.

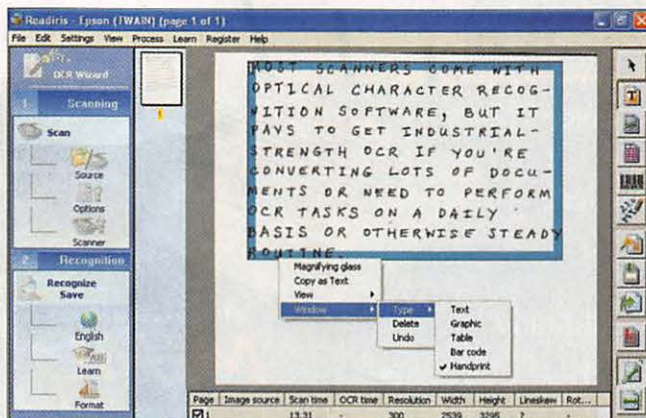
The big letdown in the shipping version I evaluated was Readiris's hand-printing recognition feature. It can decipher only separated characters (block letters), not cursive text. Even when I followed these rules, I got lackluster results. In its best test run, the accuracy rate was only 88 percent.

Readiris's speed and accuracy in the other standard OCR

tests I conducted (including bar-code reading), however, were exemplary. It took a scant 31 seconds to convert a ten-page document into a text file, with very few errors.

With its easy interface and speedy OCR conversion, I'd recommend Readiris to anyone who needs to convert documents to electronic form. But I'd advise new users to lower their expectations about transforming hand-printed notes into editable text.

—Richard Jantz



**READIRIS PRO 10's** hand-printing recognition engine can identify numbers and punctuation marks, but not lowercase letters.

## Readiris Pro 10

Iris

★★★★☆

Easy, proficient OCR for most documents; hand-printing recognition remains limited.

Street: \$130

[find.pcworld.com/47558](http://find.pcworld.com/47558)



# Light **in** Shining Armor

*AG Neovo brings ergonomic leadership to LCDs*

>> If you think all LCD displays or the companies that make them are pretty much the same, then think again. With AG Neovo's patent-pending NeoV Optical Filter technology, there is finally a premium LCD monitor solution.

Because its core mission is to design visual displays that are ergonomically solid, with dazzling clarity and superb features, AG Neovo ([www.neovo-usa.com](http://www.neovo-usa.com)) has set itself apart from the pack. For customers, the innovation and careful thought behind AG Neovo's displays translate into reduced eye fatigue and greater ease of sharing information on screen, among other benefits. Discover ... light in shining armor!

A truly global technology company, AG Neovo has brought its customer-focused display technology to markets around the world. One notable symbol

of AG Neovo's leading-edge designs is the company's NeoV Optical Filter technology. This unique AG Neovo technology features specially hardened glass with an antiglare coating that enhances color definition and image sharpness, while protecting the very sensitive underlying screen from damage. The filter is built on top of the internal LCD panel in AG Neovo's E-Series and X-Series displays.

For users—particularly the many professionals who read on screen throughout their work day—this latest advance

in display technology allows for greater eye comfort during extensive use.

The AG Neovo M-Series multimedia displays again showcase the company's focus on improving the user's experience, starting with a cutting-edge design featuring a perfectly positioned



**AG Neovo's M-Series:**  
Innovative design and special features.

front-access USB port and oversized control buttons. Beyond great looks and smart design, the M-Series' Smart avMode automatically adjusts brightness, contrast, and audio to changing user environments, while the iRelax eye reliever sends friendly reminders to users that it is time for an eye break from the screen. It is AG Neovo's careful attention to the human side of computing that makes the company a stand-out from the rest of the vendor crowd.

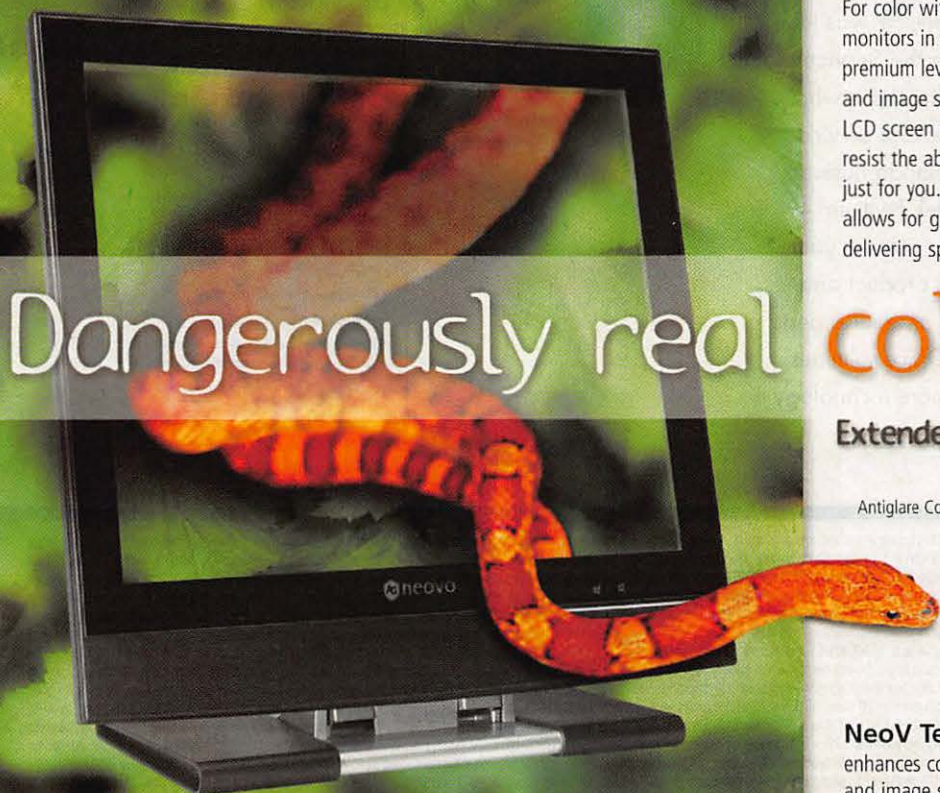
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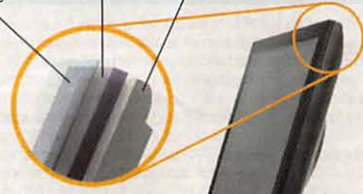
colors...

## E-Series Exceptionally Elegant

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- 48X CD-RW Drive<sup>5</sup>
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**Top-Seeded Husbands to Meet Louisville**  
The Washington Huskies got an early start on preparing for another year. The Huskies flew to Albuquerque, N.M., the site of their regional semifinal against Colorado, on Tuesday to get accustomed to the city's 5,314-foot altitude. The team normally would have left en route a day later to prepare for Thursday's game, but coach Lorenzo Romo wanted his players to build up their endurance.

**Artisan St. Shocks Nets**  
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Atlanta's stellar aggressive defense, smart shooting and great rebounding earned the Sun Devils that courtship home for the Tennessee Regional.

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**Architectural highlights along Paris and Paris France must be the French president's official complemented by a series of constructed in the Belle Époque which the Champs-Élysées is want to see and be seen. No commercial boutiques, the offices of international art**

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Wind: 2 mph	Wind Direc: NW
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1&1 WebStatistics	✓	✓

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PDF2Web Converter	✓	✓
DynamicSiteCreator	✓	✓
Graphic archive	✓	✓
WebsiteCreator	12 pages	12 pages
Software suite worth \$600	✓	✓
FrontPage extensions	✓	✓
CGI library	✓	✓
Active Server Pages	—	✓

#### DOMAIN NAMES

Included Domains	1	1
Subdomains	10	10
Run multiple independent sites	✓	✓
Full DNS management	✓	✓

#### E-MAIL

E-mail accounts w/ 1 GB space each	200	200
Aliases, auto-responders, forwarding	✓	✓
1&1 WebMail	✓	✓
Spam filtering for all accounts	✓	✓
Virus protection for all accounts	✓	✓

#### SECURITY FEATURES

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Daily backups	✓	✓
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Dedicated SSL Certificate	optional	optional

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— Linux packages



— Microsoft packages

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# The Trouble-Free

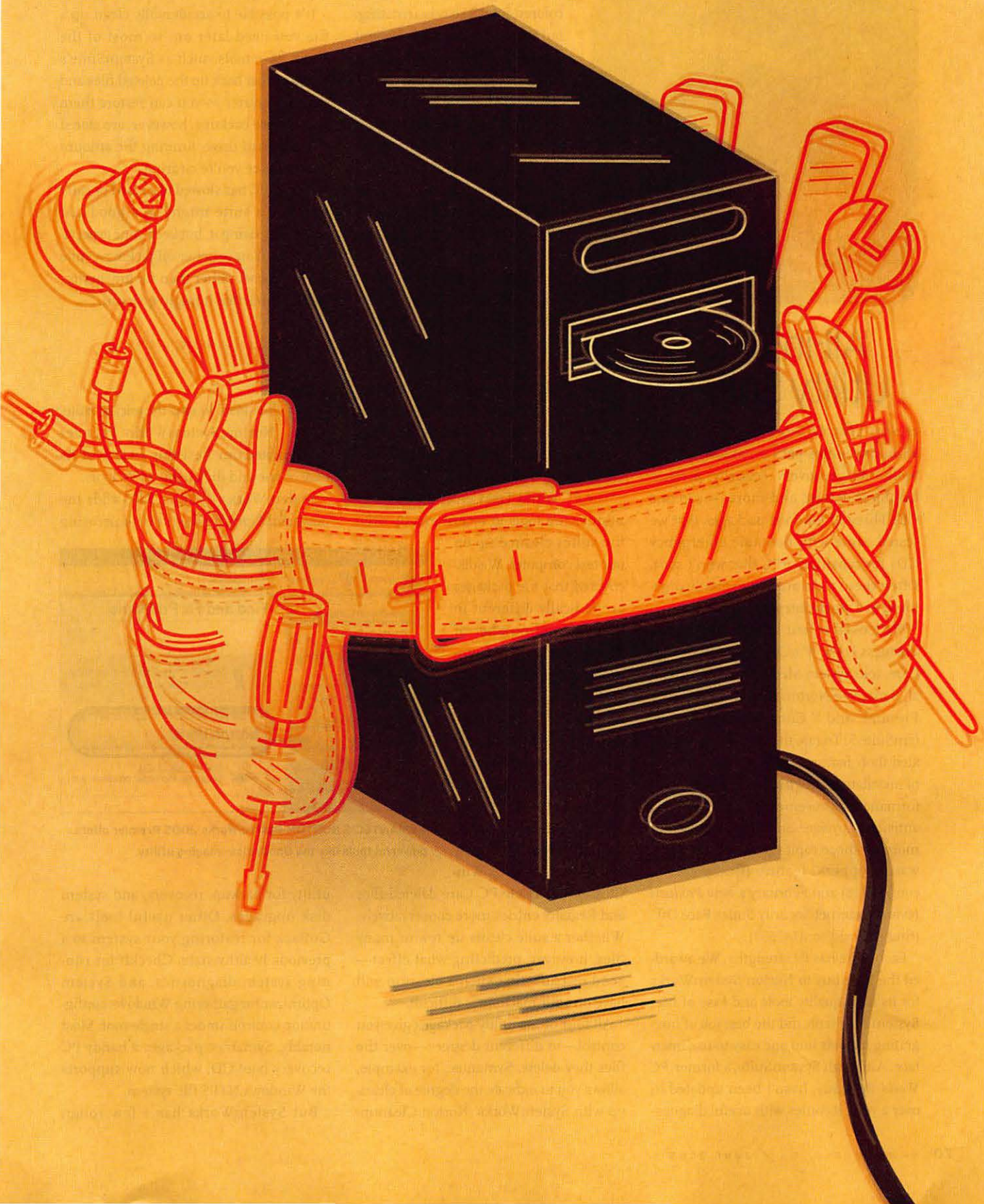
# PC

WHEN THINGS GO WRONG with Windows—and they inevitably do—add-on utilities may help where Windows' built-in tools can't. The question is, which ones do you need? Utility suites offer the convenience of multiple tools on one CD. Plus, there are hundreds of specialized utilities that can fill in the gaps or, in the proper combination, substitute for suites altogether.

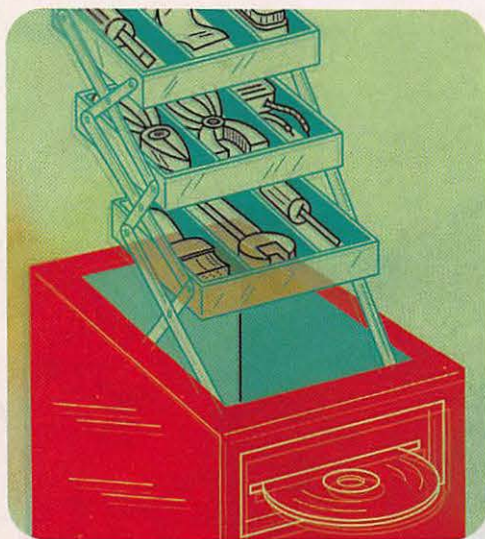
We tested four all-in-one suites and 18 less-known utilities to find the right mix that will keep your PC productive and secure. ►

BY MICHAEL DESMOND  
ILLUSTRATIONS BY HARRY CAMPBELL









## All-in-One Utility Suites

IF YOU LIKE TO DO one-stop shopping, all-in-one suites pack an assortment of tools—data recovery, security, privacy, troubleshooting, and more—onto one CD. Three of the four packages that we tested came with bootable emergency CDs for repairing a PC that won't start. Often these tools are conveniently organized in a single integrated interface.

We looked at four leading packages—Business Logic WinCleaner Complete PC Care, Iolo System Mechanic 5 Professional, Symantec Norton SystemWorks 2005 Premier, and V Communications SystemSuite 5. To rate these suites, we evaluated their features, ease of use, and ease of installation, and tried to detect any performance improvements. We did not test antivirus, spyware, and firewall tools. For more on those topics, read April's "Spyware Stoppers" feature ([find.pcworld.com/47118](http://find.pcworld.com/47118)) and February's *New Products* review "Internet Security Suites Face Off" ([find.pcworld.com/47657](http://find.pcworld.com/47657)).

Each suite has its strengths. We awarded the Best Buy to Norton SystemWorks for its high-quality tools and ease of use. System Mechanic did the best job of integrating its tools into one easy-to-use interface. Although SystemSuite, a former *PC World* Best Buy, hasn't been updated in over a year, it comes with useful diagnos-

tic tools. WinCleaner's brightly colored interface was irritating, but the utility has a convenient one-click cleanup routine that you can launch from the CD.

If you're looking to use any of these packages to improve your system's performance, however, you'll probably be disappointed. Over time Windows accumulates hundreds of unnecessary files such as old application installers, temp files, and remnant Windows Registry entries. These files could, in theory, slow down your computer. To help

counter this effect and to free up disk space, all four packages that we tested include tools that remove unneeded files and delete and repair Windows Registry entries. While using such programs can recover disk space, you aren't likely to see significant gains in performance.

The PC World Test Center used system monitoring tools to record exactly what the suites cleaned up on our test computer. We discovered that the packages are radically different in the type and number of files they remove. V Communications' SystemSuite and Symantec's Norton SystemWorks were at the most aggressive default settings; SystemWorks deleted more than 12,000 Registry entries, for example. On the other hand, Iolo's System Mechanic and Business Logic's WinCleaner Complete PC Care deleted files and Registry entries more conservatively. Whether a suite cleans up few or many files, however, predicting what effect—good or bad—that such a cleanup will have on your machine is difficult.

All four of the utility packages give you control—to different degrees—over the files they delete. Symantec, for example, allows you to indicate the degree of cleanup with SystemWorks' Norton Cleanup,

CleanSweep, and WinDoctor utilities.

It's possible to accidentally clean up a file you need later on, so most of the suites have tools, such as SystemSuite's Undo It, that back up the deleted files and Registry entries so you can restore them later. These backups, however, are stored on your hard drive, limiting the amount of disk space you're clearing.

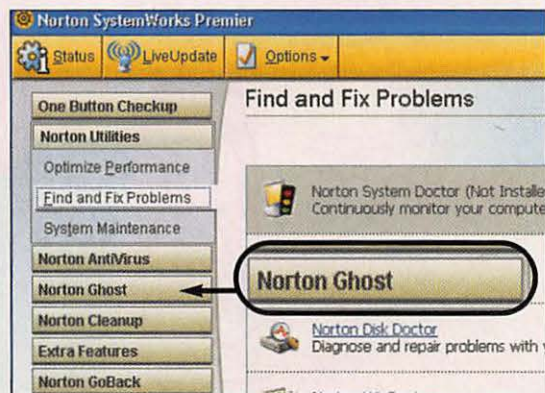
If your PC has slowed to a crawl or can't boot up, a suite might be a good last resort at reviving it, but keep your expectations low. You're better off picking a suite for its tool set rather than for any performance gains that it might give you.

### Symantec Norton SystemWorks 2005 Premier

★★★★☆

**Best Buy** DESPITE BEING the priciest suite, Norton SystemWorks Premier 2005 earned our Best Buy award for its ease of use and the quality of its tools.

SystemWorks Premier 2005 adds the powerful Norton Ghost disk-mirroring



SYMANTEC'S NORTON SystemWorks 2005 Premier offers powerful tools like the Ghost disk-imaging utility.

utility for backup, recovery, and system disk upgrades. Other useful tools are GoBack for restoring your system to a previous healthy state, CheckIt for running system diagnostics, and System Optimizer for gathering Windows configuration controls under a single roof. Most notably, Symantec packages a handy PC recovery boot CD, which now supports the Windows NTFS file system.

But SystemWorks has a few rough



edges. It's a bit of a space hog. Its modules can consume copious amounts of memory—a potential issue for machines equipped with minimal RAM. A review of running processes in the Windows Task Manager revealed that SystemWorks' components consumed more than 87MB of system memory. The installation routine is long and requires multiple reboots and program update downloads. And SystemWorks 2005 lacks a startup manager for controlling applications that launch with Windows. \$100, [find.pcworld.com/47618](http://find.pcworld.com/47618)

#### Iolo System Mechanic 5 Professional

★★★★☆

Iolo SYSTEM MECHANIC 5 Professional is the only utility suite we tested that neatly integrates all of its modules—cleanup, fix-up, maintenance, optimization, and data protection—in one window. The package's installation was quick and smooth; and in breadth of features, System Mechanic is second only to Nor-



Iolo's SYSTEM MECHANIC 5 PROFESSIONAL provides the easiest-to-use interface of all the utility suites tested here.

ton SystemWorks 2005 Premier. The suite provides superior file-search and recovery tools—even permitting you to resurrect deleted e-mail messages from Eudora, Netscape, Outlook, and Outlook Express. System Mechanic does have one significant omission: It fails to provide system recovery tools on a bootable disc. \$70, [find.pcworld.com/44720](http://find.pcworld.com/44720)

#### V Communications SystemSuite 5

★★★★☆

V COMMUNICATIONS SystemSuite 5 covers the basics of system diagnostics,

system optimization, file repair, and file recovery. The former PC World Best Buy winner hasn't been updated since July 2003, however, and its age shows.

SystemSuite 5's interface is visually consistent, but its unintuitive top-level design can make specific functions difficult to find. The installer loads a handful of third-party applications onto your system before installing the main program. Some of the tools are impressive. Modules such as PCDiagnosics and SystemExplorer are useful for reviewing your system's configuration and for performing low-level tests. But the suite's rigid text-based displays are hard to slog through. An application mover module can not only shift installed programs from one folder to another on the PC, but also pack them up for transfer to a different system—a nice touch. SystemSuite's application disc also doubles as a bootable rescue CD with some limited disk and file functions.

V Communications says that the ▶

## TEST REPORT

### HOW THE SUITES STACK UP

THE FULL-FEATURED NORTON SYSTEMWORKS tops our list of all-in-one packages, which is ranked by star rating.

UTILITY SUITE	Setup	Design	Features	Application startup manager	Registry clean and fix	File cleanup	Undelete and disk wipe	Catastrophic recovery	Comments
Symantec Norton SystemWorks 2005 Premier Best Buy \$100 (★★★★☆) <a href="http://find.pcworld.com/47618">find.pcworld.com/47618</a>	Average	Good	Excellent	n/a	Aggressive	Moderate	Very Good	Very Good	Norton SystemWorks 2005 Premier provides the best balance of features and usability, but it is also expensive and resource hungry.
Iolo System Mechanic 5 Professional \$70 (★★★★☆) <a href="http://find.pcworld.com/44720">find.pcworld.com/44720</a>	Excellent	Very Good	Very Good	Good	Conservative	Moderate	Good	Fair	System Mechanic is easy to use with its accessible interface. Features were second only to Norton SystemWorks.
V Communications SystemSuite 5 \$60 (★★★★☆) <a href="http://find.pcworld.com/37922">find.pcworld.com/37922</a>	Poor	Fair	Good	Poor	Aggressive	Moderate	Poor	Good	This aging version of SystemSuite has some good tools but is clunky to install and use.
Business Logic WinCleaner Complete PC Care \$70 (★★★★☆) <a href="http://find.pcworld.com/47620">find.pcworld.com/47620</a>	Excellent	Fair	Fair	Very Good	Moderate	Moderate	Fair	Poor	Capable clean-and-fix product suffers from a disjointed user interface, a limited feature set, and a hard-to-use boot disc.

n/a = Not available. **HOW WE TEST:** We tested the all-in one utility suites under Windows XP Home on a Dell Dimension XPS R450 with an upgraded 1.4-GHz Celeron processor, 384MB of PC100 SDRAM, and a 14GB hard drive. We monitored the suites' file and Registry cleaners with the Filemon, Regmon, InstallRite, and Filewatch utilities. Star ratings are based on performance, breadth and quality of features, ease of use, and ease of installation. Price is taken into consideration for Best Buy honors only.



upcoming version of SystemSuite (available soon) will include a new installation routine, better hardware diagnostics, a revised program interface, and a better boot-disc interface. A new Professional version, which will be priced at about \$70, will add system backup software and a pop-up blocker to the basic package. \$60, [find.pcworld.com/37922](http://find.pcworld.com/37922)

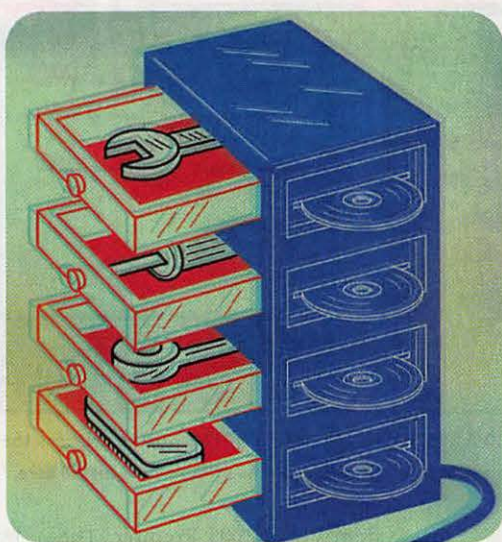
### Business Logic WinCleaner Complete PC Care

★★★★☆

WINCLEANER COMPLETE PC CARE has good tools, but it lacks some of the system diagnostics included in the other suites. The product also has a garish, unintuitive interface that makes finding and using some features difficult.

On the bright side (literally, it's orange), WinCleaner boasts a quick setup routine and a nicely organized top-level interface that makes it easy to zero in on components—something sorely lacking in other packages. Too bad this level of organization doesn't carry through to all the sub-components. It's here that the interface falls apart. Many modules open in separate program windows that bear no thematic resemblance to the suite as a whole. There are other wrinkles, too. The WinReg Optimizer guides you into Registry tuning actions without warning you that a system reboot is required. (Business Logic says it is working to fix this.) Also, you should avoid defragmenting very large folders—if you try, WinFile Defragmenter drops suddenly into a lengthy prescan operation without giving you any way to cancel the routine.

The suite provides quick access to its WinSmart tool, useful for moving installed programs, and to a well-crafted startup manager. We also liked being able to launch the OneClick Cleanup routine directly from the CD without having to install the program. Though we weren't sold on the need for file and Registry cleaners, the detailed reporting of WinCleaner's tool is quite impressive. \$70, [find.pcworld.com/47620](http://find.pcworld.com/47620)



## Small Utilities

THERE ARE TIMES WHEN one specialized tool can be better than a CD full of general ones. We've handpicked 18 little programs that find lost files, secure data, manage files, tune up your PC, customize Windows Explorer, and more.

### FILE AND DATA RECOVERY

#### Undelete Files for Free

★★★★☆

WHEN YOU ACCIDENTALLY erase your most precious photos or documents, you

want to recover those files fast. Usually you can recover a deleted file from Windows' Recycle Bin, but if it's too big or if you held down <Shift> while deleting, it won't be in there. In such cases, **Free Undelete** offers an efficient solution tuned for the NTFS file system used on most Windows XP systems. Windows deletes files not by erasing the file from your hard disk but by designating areas of the disk occupied by deleted files as available for new files to occupy. Free Undelete searches these areas for recognizable data. If you act quickly after a mistaken deletion, you should see a list of your dearly departed files. Don't delay, though. If Windows writes over your file data, even Free Undelete will be powerless. Free, [find.pcworld.com/47626](http://find.pcworld.com/47626)

#### Disk Image for Data Recovery

★★★★☆

YOU MAY BACK UP your data religiously, but if your hard drive tanks or becomes irretrievably corrupted, you face the burdensome task of reinstalling and tweaking scores of applications. Acronis **True-**

### WINDOWS TIP

## TROUBLESHOOTER'S TIME MACHINE

SYSTEM RESTORE for Windows Me and Windows XP takes a snapshot of your system settings and data files and stashes it on the hard disk for later retrieval. System Restore can whisk your PC back to the moment before disaster struck, though it won't always fix the problem. To use System Restore, click *Start•All Programs•Accessories•System Tools•System Restore*, and then follow the wizard either to load a previous Restore Point profile or to save a new one to the drive manually. No, System Restore won't magically repair hard disks or make a dead Windows installation work, but it can eliminate many application- and driver-borne conflicts.

### Create a Restore Point

Your computer automatically creates restore points at regularly scheduled times or before certain programs installed. However, you can use System Restore to create your own restore points at times other than those scheduled by your computer.

Type a description for your restore point in the following text box. Ensure that you choose a description that is easy to identify in case you need to restore your computer later.

Restore point description:

BCE (Before Cataclysmic Event)

The current date and time are automatically added to your restore point.

**TIME MACHINE:** Use System Restore in Windows Me or Windows XP to take your computer back to a point before system conflicts cropped up.

load a previous Restore Point profile or to save a new one to the drive manually. No, System Restore won't magically repair hard disks or make a dead Windows installation work, but it can eliminate many application- and driver-borne conflicts.



**Image** doesn't just back up your data. This powerful tool takes a snapshot of your hard drive that you can store offline and then use to restore the drive to its earlier state, should disaster strike. TrueImage comes with a capable partitioning program that lets you create, resize, and remove partitions on a hard drive while preserving the files stored on them. You can partition an active disk and perform incremental backups as well. Its informative, streamlined interface and reliable operation enabled us to create multiple partitions and images without a hiccup. \$50, [find.pcworld.com/47628](http://find.pcworld.com/47628)

### The Ultimate Boot Disc

★★★★★  
EVEN THE BOOTABLE recovery CD that accompanies Norton SystemWorks is no match for **Winternals ERD Commander 2005**, a server-grade bootable CD that gives you access to a dead system's files, folders, and Windows XP restore points. It even bundles the Firefox Web browser so you can connect to the Internet to download software and transfer files over a network. The disc's Windows-like environment detects all your system hardware and includes look-alikes of the Registry Editor, the Windows Management Console (including Event Viewer and Disk Manager), and the System Restore tool. A file undelete application helps you recover vital data, while the Locksmith Wizard can restore access to a PC whose administrator password is lost or forgotten. Winternals ERD Commander 2005 provides things that a standard Windows boot disc can't. The product's only downside is its price—but hey, if you're locked out of your PC, it's cheap. \$149, [find.pcworld.com/47630](http://find.pcworld.com/47630)

### PREVENTIVE SECURITY

#### The Paranoid's Palliative

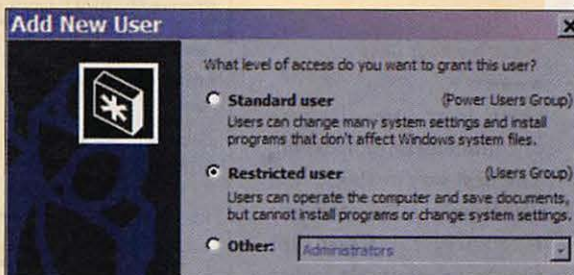
★★★★★  
IT'S HARD NOT TO BE paranoid when people and software may be tracking your

### WINDOWS TIP

## SETTING LIMITS ON SPYWARE

YOU CAN stymie spyware by using a restricted user account, which limits your (and the malware's) ability to alter the system and install applications. To create such an account, click **Start•Control Panel** and open **User Accounts**. Click **Create a new account**, enter a user name, and click **Next**. Select the

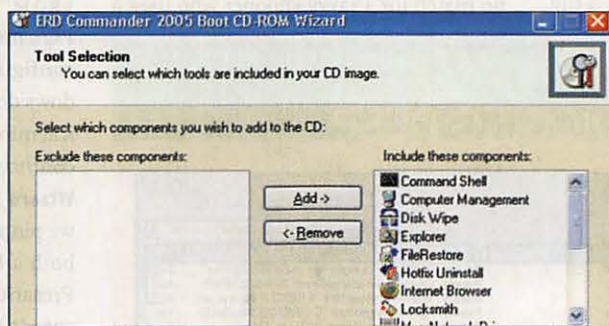
**Restricted user** radio button and click **Create Account**, and the new account will appear in the **User Accounts** window under 'or pick an account to change'. Click the new entry and make whatever changes you need to complete the account. Log on to Windows XP with this account for day-to-day Internet surfing and document editing. When you do need to install software, just log out and then log back in as an administrator. Also, confirm that the **Guest Account** is set to 'Off' (Windows should do this by default).



**SETTING UP A RESTRICTED USER** account can help prevent spyware from monkeying with your system.

every move. **Window Washer** erases file histories, browser cookies, cache contents, and other crumbs that applications and Windows itself leave behind. It works better than comparable features in any of

orous disk cleaning that meets Department of Defense specifications. The latest version erases the tracks of the Firefox, Netscape, and Internet Explorer browsers, as well. \$30, [find.pcworld.com/47632](http://find.pcworld.com/47632)



**WINTERNALS ERD Commander** lets you create a bootable recovery disc more sophisticated than what an all-in-one suite offers.

the suites we tested. Besides emptying Temp directories and browser caches, the tool will scrub open space on your disk. After we ran the 30-second scrub routine, our test system couldn't remember any deleted items; even an undelete program couldn't resurrect nuked files. The easy-to-use interface presents customization options, from scheduled washings to rig-

orous disk cleaning that meets Department of Defense specifications. The latest version erases the tracks of the Firefox, Netscape, and Internet Explorer browsers, as well. \$30, [find.pcworld.com/47632](http://find.pcworld.com/47632)

### Managing Password-Protected Information

★★★★★  
**RoboForm** automates the time-consuming task of entering personal, billing, and authentication information into Web site forms. Build your complete profile once—including Social Security number and credit card numbers, if you choose—and then use RoboForm's browser toolbar



(desktop and portable versions are limited to ten stored log-ins), \$30 (Pro version), [find.pcworld.com/47634](http://find.pcworld.com/47634)

### Scramble Your Data

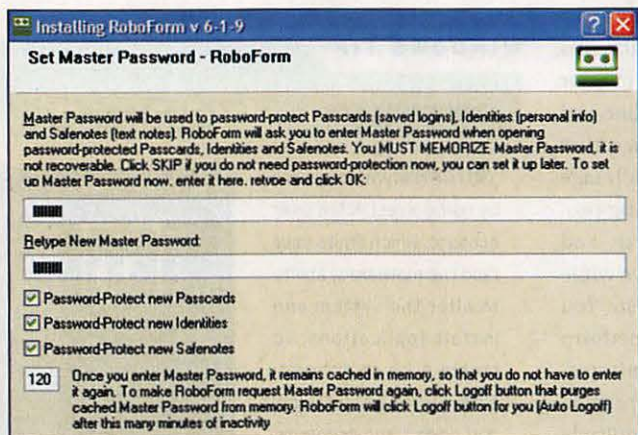
★★★★☆

YOUR PC IS A treasure trove of confidential information. The best way to shield that data from unauthorized eyes is to encrypt it. **BestCrypt** simply and effectively applies one of several powerful encryption schemes—including Blowfish, Twofish, and Rijndael—and lets you create one or several encrypted volumes, which you unlock by entering a password in the BestCrypt Control Panel. The program can also secure the contents of a rewritable optical disc or of any other storage media that is assigned a drive letter. BestCrypt can even secure your Windows swap file. \$60, [find.pcworld.com/47636](http://find.pcworld.com/47636)

### Hide in Plain Sight

★★★★☆

IF YOU SIMPLY WANT to protect file directories from casual busybodies, a full-



**ROBOFORM LETS YOU SET one master password to protect and remember all of your passwords and your profile information.**

fledged encryption program may be overkill. Baxbex **Folder Shield 2003** acts as a cloaking device for folders. Just assign a password and check the Enable Protection check box in the Folder Shield program window, and the targeted folders wink out of sight. My attempts using Windows Search and various undelete programs to find directories that were hidden all failed. Keyboard shortcuts to newly hidden folders produced error messages saying the target was likely moved or deleted. One warning: Folder Shield is no match for a savvy snooper who uses a

bit like Windows Explorer, can simultaneously display the contents of two folders, enabling you to compare and sync local folders as well as folders located on remote network servers or FTP sites. You can even establish watch lists to note changes once they occur—great for ensuring that a remote Web site has the freshest versions of your Web pages, for example. \$30, [find.pcworld.com/47640](http://find.pcworld.com/47640)

### PC Truth Serum

★★★★☆

FROM THE MAKE and model of your PC's motherboard to the exact speed and configuration of its system RAM, Windows doesn't conveniently report the critical information you need to troubleshoot conflicts or make upgrade decisions. **PC Wizard 2005** can help. Within minutes, we pinpointed the most esoteric details of both a laptop PC and an aged Compaq Presario desktop, from their frontside bus speeds to their CMOS contents. You can easily drill down to whatever information you need, and a benchmark suite lets you quickly compare your PC's performance to that of a series of stock profile systems. Free, [find.pcworld.com/47638](http://find.pcworld.com/47638)

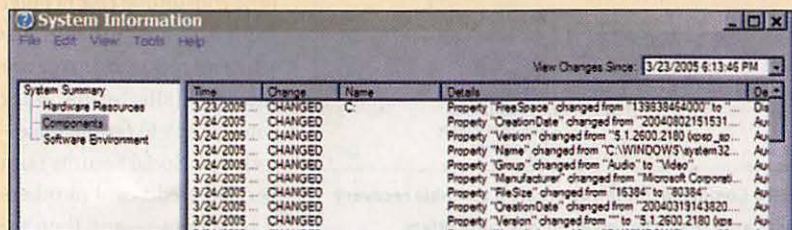
### All About Your Motherboard

★★★★☆

**Motherboard Monitor** peers into the low-level sensors built into most motherboards to display the board and processor temperatures. You can also monitor ►

## WINDOWS TIP

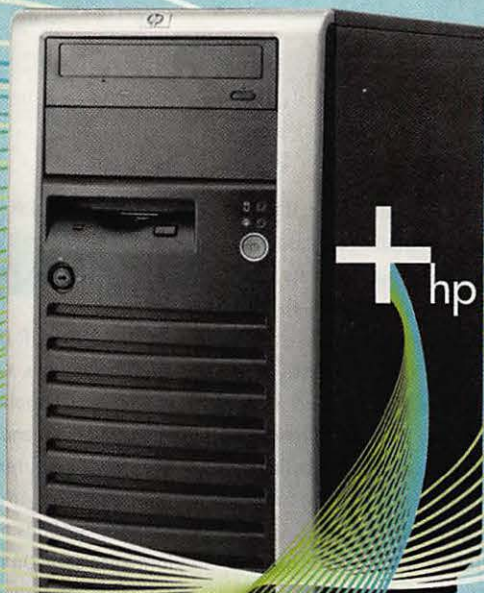
### DIAGNOSTICS: DIGGING DEEP



**WINDOWS' VERY OWN** System Information utility can tell you what's going on inside your PC.

BEFORE YOU BUY a system diagnostic tool, check out the System Information utility that comes with Windows XP. Click **Start>Programs>Accessories>System Information** for a wealth of details about your hardware, software, and system components. You won't get access to everything that the PC Wizard 2005 utility (at right) makes available, but the System History command under the Tools menu displays changes to such system resources as hardware memory addresses and Registry key locations. Use the Net Diagnostics tools in the Tools menu to test and troubleshoot your network connection.





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the speeds of various cooling fans, if your board keeps track of them. You can customize readouts and display formats, and set automatic alerts to notify you—in the Windows system tray or by e-mail—when temperatures or other characteristics pass thresholds you define. Motherboard Monitor is not for everyone, though. This utility was tricky to set up, and it exhibited some compatibility issues, failing to recognize the motherboards on an old Compaq Presario desktop and on a newer Sager laptop. We think it works best for overclockers and avid gamers, who push the performance limits of their computers. Free, [find.pcworld.com/47642](http://find.pcworld.com/47642)

### A Friendlier Registry Editor

★★★★☆

PC TROUBLESHOOTERS rely on the Registry Editor to tweak the all-important database at the heart of Windows, yet they grit their teeth in frustration at its interminable text searches and stark interface. **RegWorks** can rekindle a Registry romance. Within the utility's deceptively simple-looking interface is an invaluable undo feature, a much better search engine, a key comparison tool, and a Favorites function for quickly returning to oft-accessed keys or values—all great for troubleshooting. The most valuable part, however, may be the Tweaks section—a veritable gold mine of tricks for automating system tune-up tasks. \$15, [find.pcworld.com/47644](http://find.pcworld.com/47644)

### TUNE-UP TOOLS

#### Control Your Graphics Board

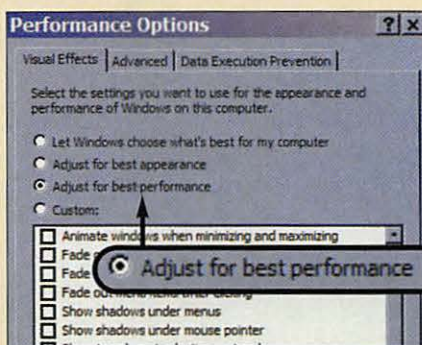
★★★★☆

**PowerStrip** lets you reach into the guts of your graphics subsystem to overclock your graphics chip, optimize memory timings, and fine-tune refresh rates to within a tenth of a hertz. Powerful gamma and color settings provide control over display output—you can even use hot-keys to bump up gamma output

### WINDOWS TIP

## RAMPING UP PERFORMANCE

INCREASE YOUR PC's pep by turning off Windows XP's desktop eye candy—for example, its translucent and animated menu elements. Right-click *My Computer*, select *Properties*, click the *Advanced* tab, and click the *Settings* button in the Performance area. On the Visual Effects tab of the Performance Options dialog box, click *Adjust for best performance*, or experiment by unchecking various animation and visual effects settings in the scrolling list box.



LIMITING WINDOWS' visual effects can speed up your system's performance.

during game play so you can see down dark halls. Choose from preset profiles or laboriously tweak your own settings. PowerStrip can be risky, however. Nudging the memory and chip clock on our system produced bad visual artifacts on screen and ultimately forced a reboot, though it did accelerate performance slightly. If you plan to connect a PC to your home theater

### Change Everything

★★★★☆

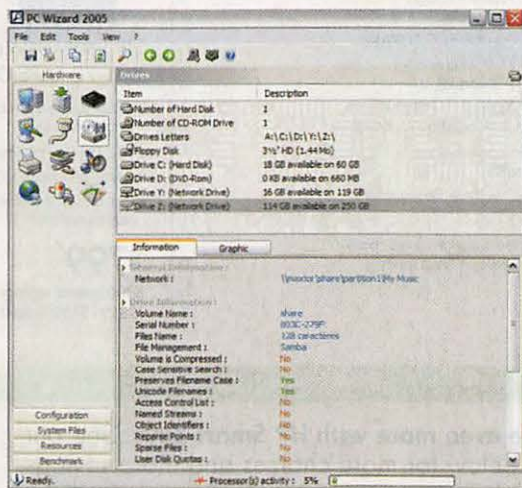
**X-Setup Pro** is an inexpensive yet exhaustive package of more than 1700 tweaks for hardware, software, and the Windows OS. Every area of your system is fair game. You can change the displayed name of the My Computer and My Network icons on your desktop. Link the Windows Media Player Media Guide button to a site other than WindowsMedia.com. Or change low-level system settings to harden the Windows network stack against Web-based attacks. The program collects Windows management utilities like the Registry Editor, Task Manager, and Disk Cleanup under a single menu heading to aid in troubleshooting. The sheer number of esoteric options in X-Setup Pro can be overwhelming, but the program warns of tweaks that could land you in real trouble. \$8, [find.pcworld.com/47647](http://find.pcworld.com/47647)

### EXPLORER ENHANCEMENTS

#### Find Folders Fast

★★★★☆

THE LAST TIME Microsoft bothered with a significant redesign of the Windows Explorer interface, the O.J. Simpson trial was in full swing. Whisk Explorer into the 21st century with **Direct Folders**, a compact utility that helps you jump to frequently used or otherwise important

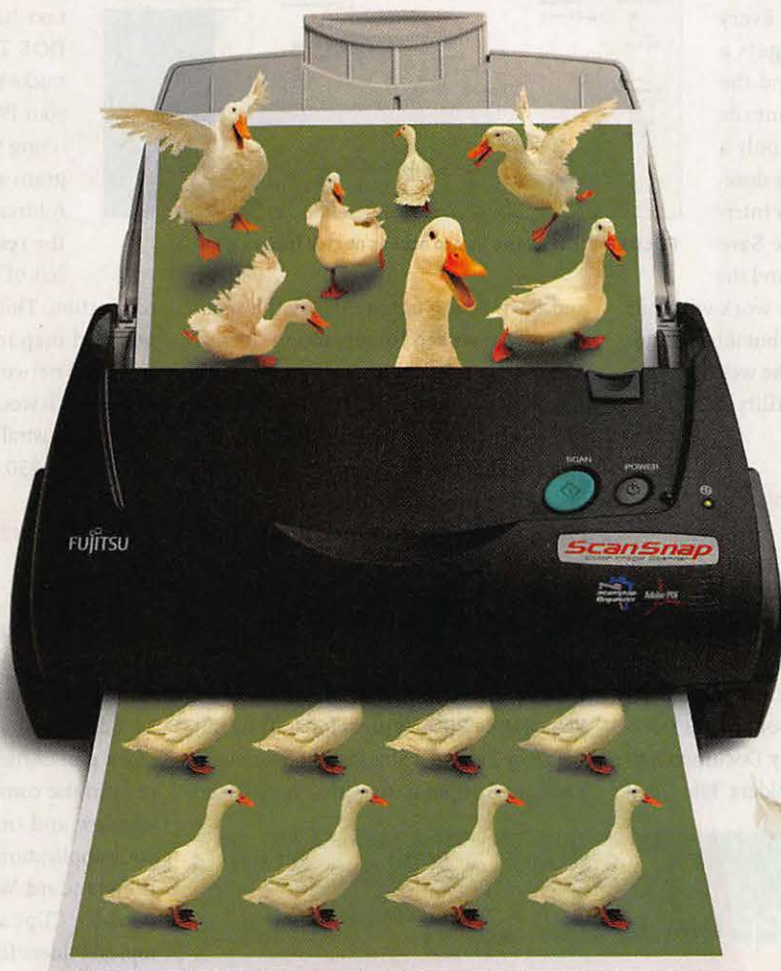


PC WIZARD 2005 makes it simple to unearth detailed information about every aspect of your system.

system, PowerStrip is terrific for tuning the computer's graphics output to your large-screen TV, matching the TV's resolution, refresh rates, and other characteristics. \$30, [find.pcworld.com/47645](http://find.pcworld.com/47645)



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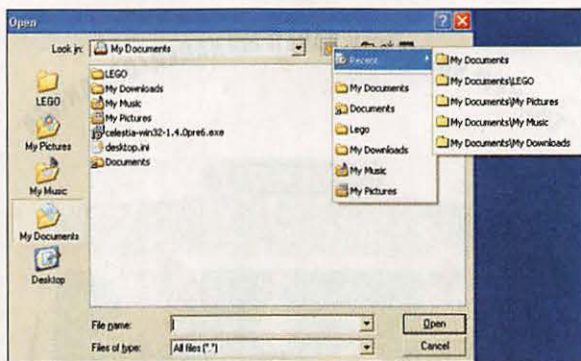


folders by using History and Filter icons arrayed along each Explorer program bar. Every program window also gets a roll-up icon: Click it, and the active window "rolls up" into its application bar, leaving only a thin, horizontal bar on the desktop. We experienced a few interface shortcomings in the Save and Open dialog boxes, and the roll-up feature failed to work with our Office 2003 applications, but those minor glitches don't outweigh the welcome convenience of this little utility. \$20, [find.pcworld.com/47648](http://find.pcworld.com/47648)

### Use Shortcuts to Access Folders

★★★★☆

**Folder View** helps you get to any directory fast—no matter how deeply buried—by adding useful shortcuts to Windows Explorer. Instead of trudging through tedious folder trees, you can click an icon and breeze through a fly-out menu selection of folders such as My Documents or other recently accessed folders. File Open



**FOLDER VIEW** allows you to access nested folders quickly.

and Save dialog boxes display the most recently accessed folders along the left edge, while another icon offers one-click access to key locations. The Toolbar feature—which plops folder icons into the space below the Explorer icon bar—can be both clumsy and space consuming. Fortunately, you can turn it off. Free, [find.pcworld.com/47650](http://find.pcworld.com/47650)

## OTHER MUST-HAVES

### Seeing Is Believing

★★★★☆

**VisualRoute 2005** is great for sniffing out the story behind a sluggish network connection. Simple to use, this Java-based

graphical trace-routing program puts a pretty face on the dull, text-based output of the old DOS TRACERT utility, which tracks the network path between your PC and the Web site you're trying to reach. Launch the program and type a URL into the Address box, and you'll receive the response times of the long list of servers involved in the

connection. This utility could use a more polished map interface and a display of top-level network nodes and backbone networks. It would also be nice if the continent of Australia weren't missing on the global map. \$50, [find.pcworld.com/47652](http://find.pcworld.com/47652)

### Better Clipboard Management

★★★★☆

THE WINDOWS CLIPBOARD is the junk drawer of the Internet generation. **Clip-Cache** transforms it into a virtual library for keeping frequently used tidbits such as a digital image of your signature or stock e-mail message closings. Click an item in the compact ClipCache program window and immediately paste it into your applications and documents using the standard Windows paste function (Ctrl-V). ClipCache also lets you set up topical folders for dragging and dropping copied objects and files. The text cleanup function removes indents, special characters, and hard carriage returns to turn munged e-mail threads into clean, pasteable text. \$20, [find.pcworld.com/47654](http://find.pcworld.com/47654)

### Beep This

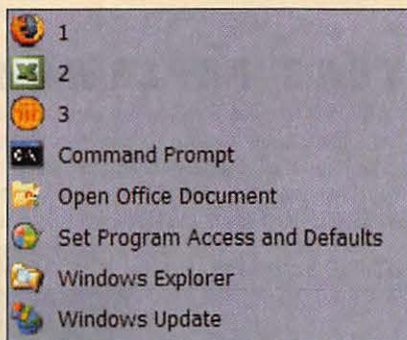
★★★★☆

SOMETIMES THE simplest things in life are the best. A boon for users of Microsoft Word and other text-based applications, **Insert Toggle Key** prevents you from typing over existing text after accidentally hitting the Insert key. Launch the application, and your PC beeps whenever you press the offending key. Donation requested, [find.pcworld.com/47655](http://find.pcworld.com/47655)

## WINDOWS TIP

### LAUNCH APPLICATIONS FAST

USE NUMBER KEYS to launch applications quickly through the Windows XP Start menu. Open *Start*, click *All Programs* (Programs in Classic Start menu mode), find one of your oft-used applications, and drag it to the top box of the Start menu. Before you let go of the mouse button, make sure the pointer is between two apps listed in that box (if there are any) so that a black line appears, and if you're using Classic mode, hold down the <Ctrl> key; now release the mouse



PRESS 1 to launch Firefox and 2 to run Excel.

button to place a shortcut to the program at the top of the Start menu. Let go of the <Ctrl> key, right-click the shortcut, and select *Rename* to add a number before its name (1 Firefox, 2 Excel, and so on, but don't use the same number twice). As a result of this trick, the next time you click the Start button (or press the <Windows> key) you can press a number key to launch the corresponding application. To remove a shortcut, simply right-click it and select *Delete from this list* (or *Delete* in Classic Start menu mode).

PC World contributor Michael Desmond is a freelance writer based in Vermont.



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# THE BEST (AND WORST)

# ISPs

uh oh...





# More than 6000 PC World readers told us how major providers rate for speed, tech support, and more. We reveal which broadband and dial-up services make the grade and which fall flat.

BY SUSAN SILVIUS ♦ ILLUSTRATIONS BY PETER AND MARIA HOEY



WHEN WE ASKED more than 6000 *PC World* subscribers to rate their Internet service provider, we got an earful, and a few surprises. Broadband users: You're happy with your provider, which you've probably

been using for years, and you're also likely to get television or telephone service from the same company that delivers Web access to your home. Dial-up users: You're less thrilled with your Internet service, but for the most part you're resigned to the technology's slow speed and aren't necessarily inclined to move up to broadband. And while all of you use the Internet every day, you're still more likely to be checking your e-mail and browsing text-heavy Web sites than streaming video and audio or using Voice over IP. We asked readers to rate their ISP's tech support, reliability, speeds, spam blocking, and more, to see which ones deliver the best experience. The *PC World* readers we surveyed had their favorites: EarthLink cable, Cablevision, and Time Warner's Road Runner service were ranked the best cable ISPs, while

Verizon got top honors for DSL. AT&T WorldNet was the favorite dial-up provider of our respondents. See the chart on page 82 for your ISP's ranking.

## CABLE AND DSL CHAMPS

NOT ONLY DID CABLE customers make up the largest proportion of our survey respondents—nearly 44 percent—they were also the most satisfied (along with their DSL counterparts; see "For Overall Satisfaction, Broadband Is King," page 84). More than 70 percent of subscribers to EarthLink cable, Cablevision, Time Warner's Road Runner unit, and Cox awarded their providers one of the two highest ratings for overall satisfaction. EarthLink cable and Cablevision also scored over 70 percent when we asked how likely readers were to recommend their ISP, and how satisfied they were with its download and upload speeds. By comparison, 61 percent of Comcast subscribers reported that they are satisfied with their service, and 58 percent would recommend it. Comcast is the largest cable access provider and the second-largest ►



consumer ISP in the continental United States, behind AOL.

When it comes to satisfaction, DSL customers are close behind their cable counterparts, and both camps are head and shoulders happier than dial-up and satellite Internet users. (Note that the survey recorded fewer than 50 respondents to any single satellite Internet service, so no satellite ISPs are included in the results.) Sixty-eight percent of DSL respondents said they were highly satisfied with their ISP, while only 43 percent of dial-up users did so.

More than half of the DSL customers of BellSouth, EarthLink DSL, Qwest, SBC Yahoo, and Verizon were content with their service and were highly likely to recommend it to others. Verizon subscribers were the most satisfied of the lot, with

## The shift to broadband continues, although it has not yet reached most U.S. households.

seven out of ten giving the company top marks in overall satisfaction, likeliness to recommend, and reliability. SBC Yahoo's customer rating was close behind: Two-thirds of SBC Yahoo users gave the service top marks in those three categories. (Visit [find.pcworld.com/47764](http://find.pcworld.com/47764) for the complete survey results.)

### AN INDUSTRY GROWS UP

THE SHIFT TO broadband continues, even though it has not yet hit the majority of U.S. households, according to Yankee Group analyst Patrick Mahoney. Even

so, three-quarters of the respondents to our survey enjoy high-speed Internet access from their homes. The overwhelming majority subscribe to a DSL or cable access service from one of the telephone or cable companies that are now the chief providers of broadband access across the continental United States.

The typical urban home has more choices for fast and reliable Internet access. Residents of the ten largest U.S. cities can select from at least two high-speed services, and sometimes more—often at a discount when bundled with the

### READERS RATE THE ISPs

## Cable and DSL More Satisfying Than Dial-Up

OUR SURVEY OF MORE THAN 6000 *PC World* subscribers shows that broadband users are more satisfied with speed, reliability, and overall service. Cable providers had much lower satisfaction scores in spam blocking than most DSL and dial-up companies.

ISP	Service type <sup>1</sup>	Percentage highly satisfied with						
		Overall service	Reliability	Tech support	Customer support	Download speeds	Upload speeds	Spam blocking
EarthLink	Cable	81	76	49 <sup>2</sup>	54 <sup>4</sup>	87	72	52 <sup>2</sup>
Cablevision	Cable	78	84	63	57	91	84	43
Road Runner	Cable	78	76	65	63	81	64	39
Verizon	DSL	72	71	53	54	63	53	48
Cox	Cable	72	66	58	58	76	64	34
Other <sup>3</sup>	All	67	64	61	60	48	42	47
SBC Yahoo	DSL	67	70	46	46	59	51	55
EarthLink	DSL	64	64	49 <sup>2</sup>	54 <sup>4</sup>	57	44	52 <sup>2</sup>
Charter	Cable	62	59	48	43	70	46	36
Comcast	Cable	61	67	48	48	74	58	33
BellSouth	DSL	61	65	56	54	58	49	33
AT&T WorldNet	Dial-up	58	64	53	56	25	27	48
Qwest	DSL	56	62	n/a	n/a	52	n/a	n/a
EarthLink	Dial-up	52	60	49 <sup>2</sup>	54 <sup>4</sup>	15	17	52 <sup>2</sup>
Adelphia	Cable	51	57	53	50	67	58	29
MSN	Dial-up	50	42	44	44	27	23	51
NetZero	Dial-up	49	49	32	36	13	9	37
PeoplePC	Dial-up	46	44	n/a	38	12	15	n/a
AOL	Dial-up	39	38	38	40	25	24	49

**SURVEY NOTES:** We asked subscribers to rate their satisfaction with their ISP on a scale of 1 to 7, with 1 being "extremely dissatisfied" and 7 being "extremely satisfied." The percentages show the number of respondents giving their service provider a rating of 6 or 7 ("satisfied" or "extremely satisfied"). **FOOTNOTES:** n/a = Not applicable. We received too few responses to rate this feature.

<sup>1</sup> Some ISPs offer more than one type of service. For ISPs other than EarthLink, service type listed is the type for which we received the most responses. <sup>2</sup> Composite rating by all EarthLink subscribers. <sup>3</sup> Totals for all services with fewer than 50 respondents.



customer's cable TV and/or telephone service. (See "Get Your Money's Worth" on page 86 to determine whether a discounted bundle makes sense for you.)

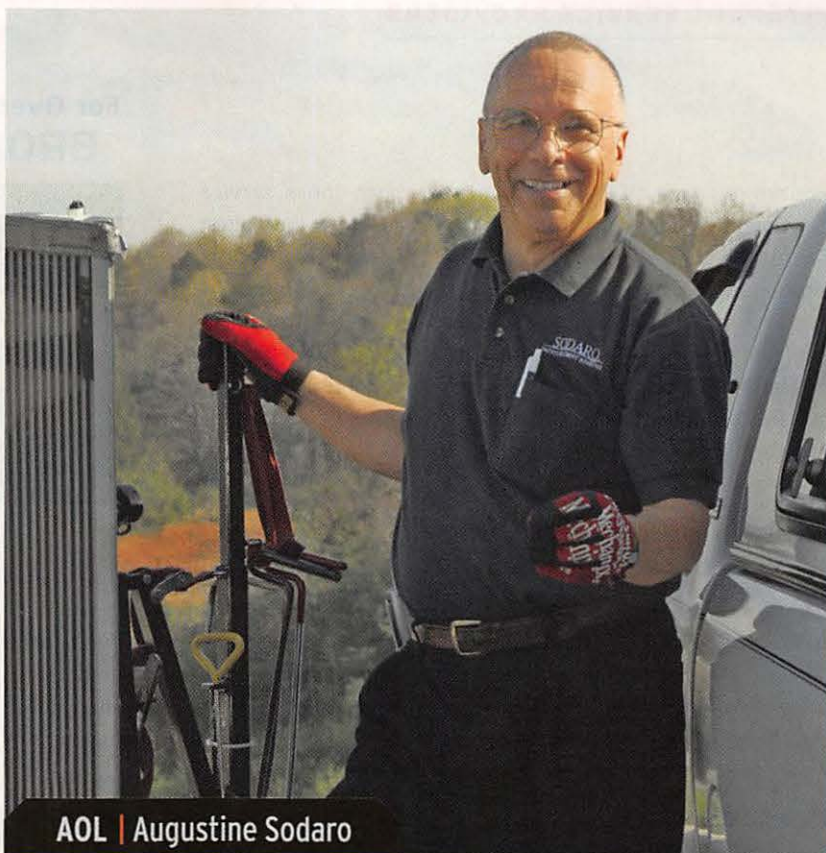
Since cable providers typically work as government-sanctioned monopolies, you rarely have a choice of cable Internet services. So, as you'd expect, the cable companies with the most reach—Cablevision, Comcast, and Cox Communications—have the most subscribers. The DSL world is different: Telephone companies may dominate the DSL industry, but usually more than one DSL provider serves a given area. (Among the DSL leaders are BellSouth, SBC Yahoo, and Verizon.) So for broadband, you can usually choose between a big cable provider and a DSL service from a large or small company.

For dial-up, most users have chosen America Online, EarthLink, or another premium brand, or they've turned to an under-\$20-per-month provider such as NetZero or PeoplePC (owned by EarthLink), though hundreds of local dial-up Internet service providers exist as well.

Dial-up providers, not surprisingly, were at the bottom of the satisfaction ratings. AOL, which currently owns the largest share of the consumer Internet access market (23 percent of the total ISP market at the end of 2004, and 34.5 percent of the consumer dial-up market, according to research firm IDC), posted the lowest satisfaction ratings in our survey. NetZero, EarthLink's PeoplePC unit, and other discount dial-up providers fared slightly better, though they still ranked among the bottom third of all ISPs in overall satisfaction. Half of the respondents who use a dial-up service gave it top grades for overall satisfaction.

### DIAL-UP BLUES

DIAL-UP PROVIDERS commonly offer software-based accelerators to help speed things up, either for free or at an extra charge. Only 30 percent of the dial-up respondents who are aware of an accelerator and use it are very happy with it, however. Also, acceleration boosts speeds by only about 20 to 50 percent at a cost to the



**AOL | Augustine Sodaro**

**"I looked at MSN, BellSouth, and several others, and AOL [was] the most user-friendly. If there were a problem with AOL, I might look at NetZero or PeoplePC, but so far I haven't had any reason to do so."**

customer that often approaches the price of DSL, yet DSL increases speed from 1000 to 2000 percent over dial-up.

Yankee Group analyst Mahoney says, "That's why accelerated dial-up makes sense only for the \$10-a-month providers, who are seeing significant uptake for the extra-cost accelerated options." According to Mahoney, "the premium dial-up services of AOL and EarthLink are basically surviving off customers who don't think about their provider or service, and just keep paying every month."

Augustine Sodaro is one of the many America Online loyalists who can see no reason to change services. He runs an on-the-spot automobile dent removal business from his home in Maryville, Tennessee. Sodaro and his wife have been AOL customers since 2000 and use the service for e-mail, Web research, and buying and selling items on eBay. "I needed

a user-friendly connection," says Sodaro. "I looked at MSN, BellSouth, and several others, and AOL seemed to be the most user-friendly. The layout is easy to understand and doesn't take long to navigate. If there were something wrong with AOL, I might look at NetZero or PeoplePC, but so far I haven't had any reason to do so," he says. Sodaro also gives good marks to AOL's technical support, saying he's been satisfied the two times he's had to contact AOL about a problem.

Even though our survey shows that, on average, dial-up users are less satisfied overall than their broadband counterparts, many of the folks using dial-up told us they were unlikely to switch providers anytime soon. And according to Yankee Group's Mahoney, they're not all that eager to switch to a broadband service, either, despite the fact that the majority of them have broadband options available. The reason: dial-up's low cost.

Dial-up isn't going away, but people moving to broadband speak glowingly about their new service, regardless of which technology they have adopted. Take Catherine Genna, for example. The lactation consultant from Woodhaven, New York, switched to Covad's DSL ser- ▶



vice two years ago. "With broadband, we can download amazingly huge files," Genna says. "Three weeks ago, I got some ultrasound videos in just minutes. Being able to communicate with people at the forefront of business around the world aids how well I'm able to teach and help my clients locally." Genna states further that the absence of problems with her DSL service is as important to her as the technology's fast transmission speeds.

### TECH SUPPORT STUMBLES

WHILE BROADBAND customers are generally satisfied with their service, they are not terribly happy with the quality of the customer and technical support they get, regardless of who their provider is. Subscribers to Road Runner and Cablevision

gave those service providers the highest technical-support scores, followed by the local and regional ISPs that fell into the "Other" category (see "The Little ISP Around the Corner" on page 85 for more about local services). Even for the top-scoring Road Runner, tech-support satisfaction was a modest 65 percent.

Road Runner and Cox were close to the top in customer-support satisfaction, while Comcast received middling grades; AOL, NetZero, and MSN (for dial-up service) brought up the rear.

## For Overall Satisfaction, BROADBAND IS KING



Percentage of survey respondents who are highly satisfied with their ISP:

DSL	68%
Cable	66%
Dial-up	50%
Satellite	48%

Karl Bode, editor of the ISP ratings Web site BroadbandReports.com (formerly known as DSLreports.com), says that even with improvements in equipment and technology, broadband installation remains problematic. "Many of the complaints we see on our message boards ▶

### READERS RATE THE ISPs

## Surveying ISP Satisfaction: Additional Features

BROADBAND ISP CUSTOMERS MAY BE MORE SATISFIED than dial-up users with the speed and support they receive, but for antivirus, parental controls, personalization, and other special features, broadband and dial-up scores are comparable.

ISP	Service type <sup>1</sup>	Percentage highly satisfied with free service					
		Overall service	E-mail	Antivirus	Storage	Parental controls	Personalization
EarthLink	Cable	81	68 <sup>1</sup>	52 <sup>2</sup>	36 <sup>2</sup>	41 <sup>2</sup>	56 <sup>2</sup>
Cablevision	Cable	78	67	44	n/a	n/a	55
Road Runner	Cable	78	68	55	28	37	51
Verizon	DSL	72	64	44	37	46	49
Cox	Cable	72	62	41	42	42	43
Other <sup>3</sup>	All	67	64	44	33	32	47
SBC Yahoo	DSL	67	65	54	60	56	58
EarthLink	DSL	64	68 <sup>1</sup>	52 <sup>2</sup>	36 <sup>2</sup>	41 <sup>2</sup>	56 <sup>2</sup>
Charter	Cable	62	58	31	18	31	33
Comcast	Cable	61	58	29	37	32	38
BellSouth	DSL	61	54	30	37	33	48
AT&T WorldNet	Dial-up	58	66	46	49	41 <sup>4</sup>	53
Owest	DSL	56	n/a	n/a	n/a	n/a	n/a
EarthLink	Dial-up	52	68 <sup>1</sup>	52 <sup>2</sup>	36 <sup>2</sup>	41 <sup>2</sup>	56 <sup>2</sup>
Adelphia	Cable	51	58	40	27	37	41
MSN	Dial-up	50	56	50 <sup>1</sup>	44	48	47
NetZero	Dial-up	49	53	32	n/a	Not offered	31
PeoplePC	Dial-up	46	41	n/a	n/a	Not offered	n/a
AOL	Dial-up	39	54	52	43	58	52

**SURVEY NOTES:** We asked subscribers to rate their satisfaction with their ISP on a scale of 1 to 7, with 1 being "extremely dissatisfied" and 7 being "extremely satisfied." The percentages show the number of respondents giving their service provider a rating of 6 or 7 ("satisfied" or "extremely satisfied"). **FOOTNOTES:** n/a = Not applicable. We received too few responses to rate this feature. <sup>1</sup> Some ISPs offer more than one type of service. For ISPs other than EarthLink, service type listed is the type for which we received the most responses. <sup>2</sup> Composite rating by all EarthLink subscribers. <sup>3</sup> Totals for all services with fewer than 50 respondents. <sup>4</sup> Free for one year only. <sup>5</sup> MSN Premium only.



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have to do with shoddy installation," Bode reports. "Someone has broadband service installed, but then realizes there's a problem. Usually they notice that their download speeds are slower than they expect. Often the customer has to make a series of calls to get the line levels corrected to get a good signal," he says.

Gail Cafferty has first-hand experience with the problem. She's a second-grade teacher who lives in Cranston, Rhode

**'I called tech support and had to deal with someone who didn't know what I was talking about.'**

Island, and who has been a Cox subscriber since 2003. Cafferty gives the company generally good grades (and won't hesitate to recommend the service to others). Still, when she installed her cable connection, Cafferty struggled to get the

level of service she had contracted for. "One week after Cox sent a technician to install our service, everything died," she says. "I was sure the installation wasn't the problem. I called the tech support line and had to deal with someone who didn't ▶

## GOING LOCAL

### The Little ISP Around the Corner

THE ISP INDUSTRY is dominated by big-name cable and phone companies for broadband, and a handful of national dial-up providers such as America Online, EarthLink, and NetZero. But you can still get a reasonable deal on Internet service from a provider in your local area. While you probably won't pay a cheaper rate, you'll likely receive more attentive service—and enjoy the satisfaction of spending your money in your own community.

#### STAYING CLOSE TO HOME

"I LIKE SUPPORTING a local business," says Paula Park, a Santa Rosa, California, resident and subscriber to local ISP Sonic.net since 2001. Although her access costs more than it would through the telephone company in her area, she's philosophical about accepting the additional expense. "The bigger companies have huge marketing budgets, and are able to undercut the little guys," she says. "At the same time, my expectation [for local businesses such as Sonic.net] is that they have to be better in order to compete. I've dealt with SBC. Their customer service is bad. They don't give you anything that they don't absolutely have to," says Park.

IDC analyst Steve Harris estimates that at least 7000 ISPs in the United States—probably a lot more—serve only local markets. Collectively, these companies own no more than 1 percent of the overall market, according to Harris. Why don't the

locals own a larger share? Because typically their services are limited, and they take longer to start offering faster services to their customers.

Although Sonic.net started in 1994 as a small operation based in its founder's home in Santa Rosa, it is now a regional provider covering much of Northern California. By reinvesting profits back into the business, Sonic.net has evolved from solely a dial-up ISP to a full-service provider offering DSL and wireless high-speed services. It has 40,000 customers, supporting them with a staff of 65. Sonic.net CEO Dane Jasper notes that 60 percent of the firm's business comes from DSL service.

Sonic.net also provides business-class SDSL, T1, and T3 service. DSL isn't cheaper from Sonic.net than from a larger ISP, but Jasper claims his company maintains higher customer satisfaction because it provides an educated, responsive support staff that is "closer to the customer."

#### SERVICE A WALK AWAY

PARK BEARS that out. "They have an office I can walk into," she says. "When I had a problem [with a DSL link], SBC couldn't tell me whether the problem was with the service or the modem. I took the modem to Sonic.net, and a tech came out and tested it on the spot. He also walked me through all the workarounds I needed to fix the problem with SBC—he taught me how to work the system." —Susan Silvius



DANE JASPER,  
CEO of Northern  
California-based  
ISP Sonic.net

PHOTOGRAPH: ROBERT HOUSER



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COX CABLE | Gail Cafferty

understand what I was talking about, and who made me walk through everything I'd already done before getting to the next level of support," Cafferty says.

Cafferty persisted until Cox agreed to send a technician to her home, who ultimately diagnosed and corrected the problem, which turned out to be Cox's fault. A month later, Cafferty noted an \$80 service charge for the house call on her bill. "They hadn't told me they would charge me for the service call," she says. "I wouldn't have noticed had I not paid attention to my bill. It took me over an hour on the phone with them—talking to lots of people up the chain—to get them to reverse the charges, but they finally agreed. I've had no problem since then and am now happy with my service." Unfortunately, such service charges are common among broadband providers, so keep an eye on your monthly fees.

Catherine Genna had initially ordered high-speed service from EarthLink to be installed on the business line in her home office. Six weeks later, frustrated that EarthLink hadn't provided service, she switched to Covad. The company immediately told her that it was impossible for

After demanding a support visit to fix a problem, she got an unexpected \$80 charge on her next bill. "It took me over an hour on the phone with them... to get them to reverse the charges."

it or any other provider to offer DSL on her business line, and promptly installed the service on her home line instead. According to Genna, completing the cancellation order from EarthLink and receiving a refund took another six weeks. "I have friends who have had good experiences with EarthLink, so it was disappointing to me that I didn't," she says.

### HIT-AND-MISS EXTRAS

OF COURSE, MANY providers offer more than just an Internet connection. For example, antivirus, antispyware, and anti-spyware services are now de rigueur with many ISPs—and the list is ever expanding. Unlike with service and reliability, no ISP was a consistent winner on our survey when it came to some of these extra features (see "Surveying ISP Satisfaction: Additional Features," page 84).

For example, Road Runner ranked

highly for its e-mail service, but its users were dissatisfied with the company's spam blocking and parental controls. EarthLink users were among the happiest with their ISP's e-mail service, but they were far less enthusiastic about EarthLink's parental controls and free storage. AOL, which did not perform well in service or reliability, turned out to have more satisfied users when it came to e-mail and antivirus services, parental controls, and personalization features.

### GET YOUR MONEY'S WORTH

WHETHER YOU WANT to switch ISPs or get a better deal from the one you have, shop around a bit and do your homework before calling a provider, to maximize your service and minimize your costs.

**Research options in your area:** Check sites such as BroadbandReports.com and FindAnISP.com to determine which providers serve your location. Often you'll discover that you have more choices now than you did last year.

**Ask about promotions:** Call your ISP's competitors to ask about promotions and upgrade specials. If you're a broadband subscriber dissatisfied with your download and upload speeds, you may find a higher-bandwidth service you can afford.

Richard Wise, an SBC Yahoo DSL subscriber from North Little Rock, Arkansas, offers some astute advice. "I get my TV from one provider (Dish Network), and my phone and Internet access from the local telephone company (SBC)," Wise says. "I could get all three on one bill, but then I'd lose my leverage. Now when I see SBC advertising a special for new Internet service subscribers, I call them up and tell them to rerate me. When they tell me I'm ineligible because I'm a long-term subscriber, I tell them to reward me as a valued customer or else I'll switch," he says. Wise applies this technique liberally. "When I see my [satellite TV] rates start to creep up, I simply tell them I'll switch to cable unless they keep my rates down."

**Do the math before bundling:** Cable ISPs and telephone companies almost always offer a discount when you order mul- ►



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multiple services, such as both television and phone (see *Consumer Watch* on page 39 for more). For example, Cox customers who already subscribe to the company's cable TV service save \$10 a month on Internet access. Over half of our survey respondents told us they took advantage of such deals. But remember, the savings probably won't be more than \$5 to \$15 per month. Providers love bundles because the practice brings in more revenue per user over the same lines, while simultaneously making customers less likely to switch, notes Yankee Group's Mahoney.

Many ISPs now offer Voice-over-IP telephone service, which sends voice traffic over the Internet rather than on the traditional telephone network, as part of a bundle or as an extra service. Despite potential savings for heavy out-of-area callers, none of the survey respondents we interviewed expressed much interest in signing up for VoIP service. Instead they generally preferred to remain with their existing local and long-distance carriers.

**Read the fine print:** Before you sign up for one of those low-introductory-cost specials, make sure you know exactly what

## Best at Blocking SPAMMERS

Even ISPs with the best scores for spam blocking get top marks from only about half their users.

EarthLink	52%
MSN	51%
AOL	49%

you're getting into. Many DSL and cable providers entice new subscribers with a low initial monthly charge, but they lock you into a long-term agreement with ▶

### ISPs ON AIR

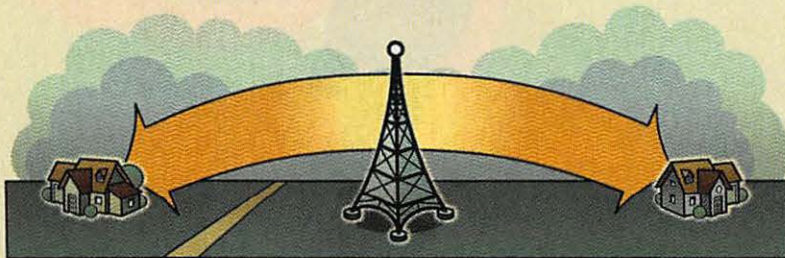
## Fixed Wireless Fills the Broadband Gaps

UNTIL RECENTLY, PEOPLE in many rural and suburban areas had no choice for Internet access other than dial-up. Worse, outlying dial-up links are often less reliable than urban lines because data has to travel farther, reducing throughput to as low as 21 kilobits per second. This can cause Web-page downloads and e-mail links to time out as the host server gives up.

### TAKE TO THE AIR

RESIDENTS IN many such communities now have a new broadband alternative: fixed-wireless Internet service (in which the wireless antenna is in a fixed location). These areas aren't all located on the plains of North Dakota or the deserts of Nevada, however. Loudoun County, Virginia, just a few hours' drive from Washington, D.C., has neither DSL nor cable Internet service. Many professionals who want to work from home move there, only to find that they can't get high-speed Internet access. In response, Marty Dougherty formed Roadstar Internet in Leesburg, Virginia. The wireless ISP serves about 1000 customers who pay \$59 and up per month (plus a \$250 setup fee) for download and upload speeds of 1 megabit per second or faster.

For example, Doug Schumde moved a few years ago from suburban Washington, which had both DSL and cable service, to



eastern Loudoun County, which has neither. To get broadband access for his IT consultancy, Schumde set up an office in Leesburg, where he could get a T1 line. But at his home, Roadstar's wireless Internet service allows him to do his work without having to drive all the way into Leesburg. Schumde says the wireless network's performance and stability are at least as good as that of his previous cable and DSL service. Plus, Roadstar's support is much better than what he got from his previous ISPs.

### SUBSIDIZING BROADBAND

IN SOME CASES government subsidies make wireless Internet service practical in areas with too few people for a provider to recoup the cost of setting up and running a network. For example, a low-interest federal loan helped Minnesota-based wireless ISP StoneBridge expand its service to 31 rural towns near Minneapolis and St. Paul. StoneBridge charges residents \$59 per month for its 1-mbps (upload and down-

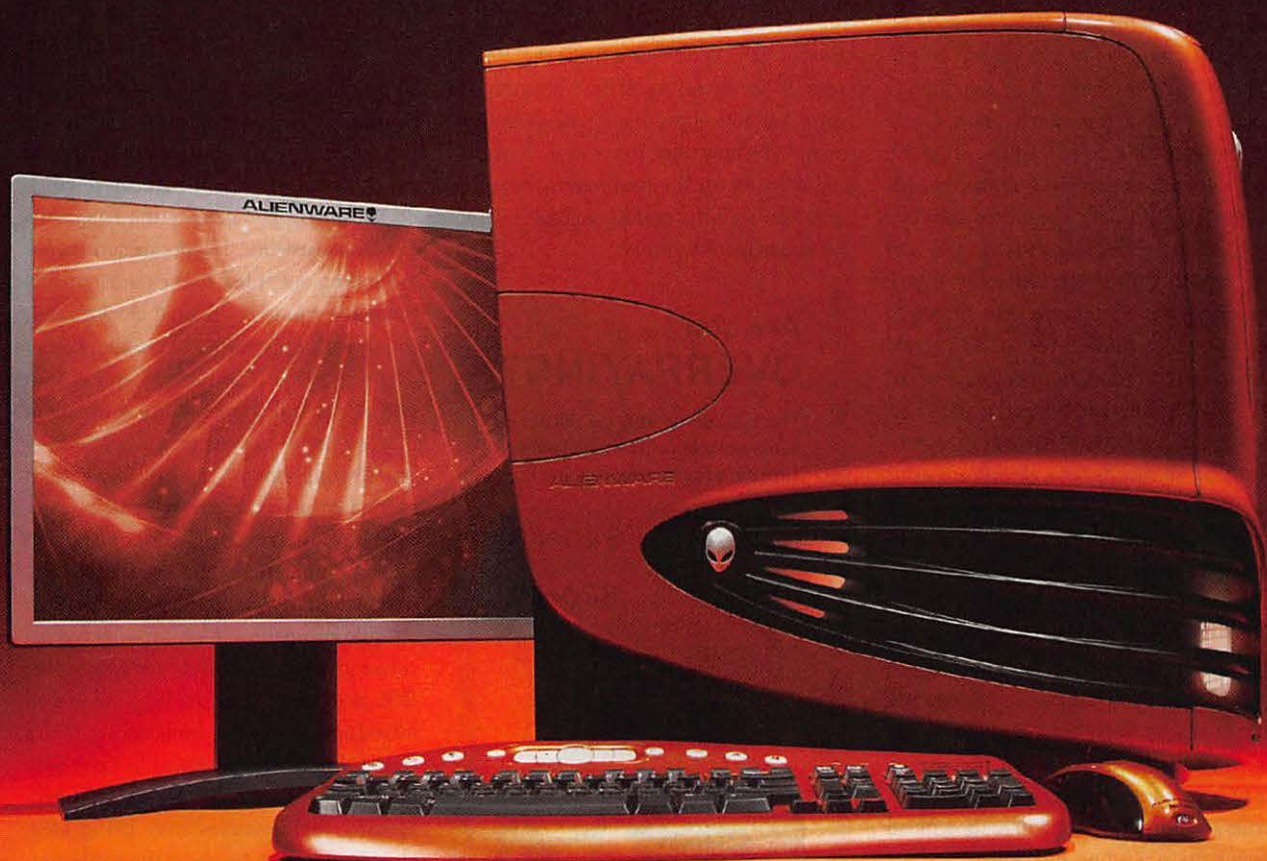
load) service, as well as an \$850 setup fee. The loan lets the company serve its rural customers, but StoneBridge makes its money providing commercial Internet service to small businesses, hospitals, and schools. Even though wireless costs less to deploy than wired connections, demand for broadband in rural areas is rarely sufficient to be profitable, says Tim Johnson, StoneBridge's director of strategic alliances.

The cost inefficiency in covering large areas may be why wireless ISPs tend to serve hundreds or at most a few thousand clients. *Broadband Wireless Exchange* magazine notes that the ten largest wireless ISPs together had 31,355 customers in 2004. Roadstar's Dougherty worries that a major telephone or cable company will enter the market, offering bundled TV, phone, and Internet service at \$90 to \$100 per month. With that kind of bundling, rural customers such as the users Roadstar serves would become cost-effective for bigger companies.

—Galen Gruman



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penalties up to \$250 for breaking the contract before the term expires. That isn't to say these are bad deals. Just be sure you identify all the gotchas *before* you sign up, including fees for activation, equipment, and installation, as well as term commitments and early-cancellation penalties.

For example, as we went to press, EarthLink offered DSL download speeds of 1.5 megabits per second and upload speeds of 384 kilobits per second for \$20 per month for the first six months and \$40 per month thereafter, but only if you signed up for at least one year, agreed to an "early termination fee" of \$150, and performed the modem installation yourself. SBC Yahoo had a similar package: \$20 per month with the same download/upload speeds for a minimum of 12 months. There was no activation fee, and installation was free as long as you installed the service yourself. However, canceling early would set you back \$200.

Cable Internet providers typically charge a higher monthly fee from the get-go, but their transmission speeds are almost always faster than DSL—and you rarely have to sign a long-term contract. Cox Cable, for example, charges new customers a monthly fee of \$50 for download speeds up to 5 mbps and uploads as fast as 768 kbps, with no cost for the installation, as long as you handle it yourself. Depending on your bundle, RCN charges \$26 to \$43 per month for download speeds up to 10 mbps and upload speeds of up to 800 kbps. Installation charges of \$50 to \$150 are frequently waived as part of new-customer promotions; you can rent the cable modem for \$5 per month, or you can supply your own. Cox is one of several cable ISPs that provide the cable modem for free. But keep in mind that with any broadband ISP you have to pay for a network interface card for your computer if it doesn't already have one (a NIC is also a requirement for DSL).

And one other thing to keep in mind: If you install the service yourself, be prepared to deal with Windows' Network Properties dialog boxes as you enter new settings for your broadband connection.

#### Get ready for a new e-mail address:

Whether you're trading dial-up for broadband or moving from, say, one DSL provider to another, changing your Internet service can be a real hassle. For example, if you've been using the same e-mail address for years, you'll have to notify all your contacts about the change (though most ISPs now offer free e-mail forwarding services for the first several months after you sign up, and for a slight charge for subsequent months).

### Are You OVERPAYING?

The average monthly ISP bill of our survey respondents roughly corresponds to their overall satisfaction.

Cable	\$40-49
DSL	\$20-29
Dial-up	Under \$20



One option is to create a permanent address through a Web mail service such as MSN Hotmail or Yahoo Mail. Both offer basic service for free, as well as a premium service with more storage and other add-ons for a nominal fee. Keep in mind, though, that users of such free e-mail accounts often get lots of spam.

Yankee Group's Mahoney says his surveys show that the difficulties related to changing e-mail addresses are the primary reason people are reluctant to switch ISPs. And Forrester Research analyst Ted Schadler notes a demographic reason

users retain their service: older people are less likely than youngsters to switch Internet providers, primarily because they want to avoid the hassle of an e-mail change.

#### FASTER SERVICES ON THE WAY

BROADBAND transmission speeds have jumped in the last year as DSL and cable providers install equipment in more neighborhoods, which reduces reliance on slower copper links to the Internet's backbone network. Telephone companies are rolling out "fiber to the curb": optical lines that run to residential blocks, often in place of copper, whether underground or along poles. The lines to and within homes are still copper, since rewiring at that level is too expensive, notes IDC analyst Sterling Perrin. The primary benefit of fiber is speed: Data travels much faster over light than it does over copper, and fiber supports more lines in a single cable than will fit in a standard copper line.

Cable companies' high-capacity coaxial cables give them a built-in advantage over DSL providers in delivering video and other high-bandwidth applications. DSL's copper lines were designed to carry low-bandwidth voice calls. New signal-processing technologies may bring DSL speeds closer to those of the cable network, however. The new VDSL standard, which carriers are beginning to implement, supports transmission speeds to 10 mbps. Further, the VDSL2 proposal calls for speeds as high as 100 mbps and availability as soon as 2006, says IDC's Perrin.

Customers typically don't need to upgrade their equipment to benefit from such broadband speed increases; their modems will simply run at the higher speeds. (Of course, you probably won't get the speed boost unless you upgrade your service plan, since providers instruct modems to stay within certain performance levels despite the available bandwidth.) Like so many things in the world, you get what you pay for. ■

*Susan Silvius is a freelance writer in the San Francisco Bay Area. Reporting by Northern California-based freelancer Galen Gruman.*



Acer recommends Microsoft® Windows® XP Professional.

www.pleasing.it - ADV

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May/June 2005

# Acer® Aspire™ 3000 Entertainment Starts Here

The Acer Aspire 3000 Series is a new family of notebooks based on the latest Mobile AMD Sempron™ processors with AMD PowerNow!™ Technology and designed for home users and professionals from small businesses in search of excellent mobile

performance and high entertainment value. These slim, space-saving systems come with multimedia capabilities and full industry-standard connectivity. Energize your work and leisure time with the Acer Aspire 3000.



NEW



- Mobile AMD Sempron™ Processor 2800+
  - AMD PowerNow!™ Technology
  - HyperTransport™ Technology
  - Enhanced Virus Protection Technology¹
- Microsoft® Windows® XP Home Edition
- 256MB DDR333 SDRAM
- 40GB² hard drive
- Integrated CD-RW/DVD-ROM combo drive
- 15.0" XGA (1024 x 768) TFT display
- SiSM760GX chipset with integrated Mirage™2 graphics
- 802.11b/g WLAN, 10/100 LAN, V.92 modem
- One-year limited warranty¹

Acer Aspire 3002LCi

**\$849**

Mobile AMD Sempron™ Processor 2800+  
Microsoft® Windows® XP Home Edition  
(LX.A5505.107)



Wi-Fi  
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For the name of a reseller near you or further information, please call Acer or visit our Web site: 800-571-2237 | [www.acer.com/us](http://www.acer.com/us)

Prices shown are estimated street prices and do not include tax or shipping. Retailer or reseller prices may vary.





## Acer® Flat Panels: Displaying Quality & Value



### Acer AL2032wd

- 20.0" TFT LCD
- 1680 x 1050 native resolution
- 600:1 contrast ratio
- 178° horizontal viewing angle
- 178° vertical viewing angle
- 2 x 5.0W integrated speakers
- VGA, DVI-D, signal connectors
- 300 cd/m² brightness
- 16ms response time
- Gloss-black color

Acer AL2032wd

**\$ 599**

20.0" LCD



**\$50 PRICE CUT!**

### Acer AL1932d

- 19.0" LCD
- 1280 x 1024 native resolution
- 500:1 contrast ratio
- 140° horizontal viewing angle
- 140° vertical viewing angle
- 2 x 2.0W integrated speakers
- VGA, DVI-D signal connectors
- 400 cd/m² brightness
- 12ms response time
- Gloss-black color

Acer AL1932d

**\$ 399**

19.0" LCD





Acer recommends Microsoft® Windows® XP Professional.

# Acer® Aspire™ 3000

## Entertainment Starts Here



- Mobile AMD Sempron™ Processor 2800+
- AMD PowerNow!™ Technology
- HyperTransport™ Technology
- Enhanced Virus Protection Technology¹
- Microsoft® Windows® XP Home Edition
- 512MB DDR333 SDRAM
- 60GB² hard drive
- Integrated CD-RW/DVD-ROM combo drive
- 15.4" WXGA (1280 x 800) TFT display
- SiSM760GX chipset with integrated Mirage™ 2 graphics
- 802.11b/g WLAN, 10/100 LAN, V.92 modem
- One-year limited warranty³



Acer Aspire 3002WLCi

# \$949

Mobile AMD Sempron™ Processor 2800+  
Microsoft® Windows® XP Home Edition  
(LX.A5506.005)

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## Compare Monitor Prices/Features & You'll Choose Acer®



### Acer AL1914s-8

- 19.0" TFT LCD
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- 140° vertical viewing angle
- 2 x 1.0W integrated speakers
- VGA, DVI-D signal connectors
- 250 cd/m² brightness
- 8ms response time
- Silver color

Acer AL1914s-8

**\$ 329**

19.0" LCD



### Acer AL1912B

- 19.0" TFT LCD
- 1280 x 1024 native resolution
- 500:1 contrast ratio
- 140° horizontal viewing angle
- 140° vertical viewing angle
- VGA signal connector
- 250 cd/m² brightness
- 16ms response time
- Black color

Acer AL1912B

**\$ 299**

19.0" LCD

**\$26 PRICE CUT!**



### Acer AL1715s-8

- 17.0" TFT LCD
- 1280 x 1024 native resolution
- 500:1 contrast ratio
- 150° horizontal viewing angle
- 135° vertical viewing angle
- 2 x 1.0W integrated speakers
- VGA, DVI-D signal connectors
- 300 cd/m² brightness
- 8ms response time
- Silver color

Acer AL1715s-8

**\$ 249**

17.0" LCD

**BUILT-IN SPEAKERS**



### Acer AL1714cb-8

- 17.0" TFT LCD
- 1280 x 1024 native resolution
- 350:1 contrast ratio
- 160° horizontal viewing angle
- 120° vertical viewing angle
- VGA, signal connectors
- 350 cd/m² brightness
- 8ms response time
- Black color

Acer AL1714cb-8

**\$ 229**

17.0" LCD

**8ms RESPONSE TIME**



### Acer AL1715

- 17.0" TFT LCD
- 1280 x 1024 native resolution
- 500:1 contrast ratio
- 150° horizontal viewing angle
- 135° vertical viewing angle
- VGA signal connector
- 300 cd/m² brightness
- 12ms response time
- Black or beige color

Acer AL1715

**\$ 229**

17.0" LCD

**500:1 CONTRAST RATIO**



### Acer AL1511

- 15.0" TFT LCD
- 1024 x 768 native resolution
- 350:1 contrast ratio
- 140° horizontal viewing angle
- 125° vertical viewing angle
- VGA signal connector
- 250 cd/m² brightness
- 25ms response time
- Black or beige color

Acer AL1511

**\$ 169**

15.0" LCD

**LOWEST PRICE EVER!**





## Acer® Aspire™ 1520 Powerful Desktop Replacement

The Acer Aspire 1520 is a desktop-replacement notebook in a stylish chassis that comes equipped with the must-have productivity and multimedia tools. Included are a powerful AMD Athlon™ 64 Processor, amply sized hard drive and memory plus a versatile DVD-Dual drive. For work, study or entertainment the Acer Aspire 1520 offers uncompromised functionality.

- Mobile AMD Athlon™ 64 Processor 3000+
  - AMD PowerNow!™ Technology
  - HyperTransport™ Technology
  - Enhanced Virus Protection Technology¹
- Microsoft® Windows® XP Professional
- 512MB DDR333 SDRAM
- 80GB² hard drive
- Integrated DVD-Dual drive (DVD±RW)
- 15.0" XGA (1024 x 768) TFT display
- VIA K8N800 chipset with integrated UniChrome™2 graphics
- 802.11b/g WLAN, gigabit LAN, V.92 modem
- One-year limited warranty³



### Acer Aspire 1522LMi-XPP

# \$1,099

Mobile AMD Athlon™ 64 Processor 3000+  
Microsoft® Windows® XP Professional  
(LX.A3706.002)

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Digital Light Processing™ from Texas Instruments is an all-digital display technology for projectors and other products that delivers the best picture in terms of clarity, brilliance and color.

### Acer PD525

\$1,249

(EYJ1501.W04)

- 2600 ANSI lumens
- XGA (1024 x 768) native resolution
- 2000:1 contrast ratio
- +/-16° keystone correction
- 5.3 pounds



PD525

### Acer PD116P

\$849

(EYJ1401.W04)

- 2100 ANSI lumens
- SVGA (800 x 600) native resolution
- 2000:1 contrast ratio
- +/-16° keystone correction
- 5.3 pounds



PD116P

## Acer Notebook Service Upgrades Protect Your Valuable Investment

Quality is built into every notebook Acer makes, and each comes with a one-year standard limited warranty.<sup>1</sup> It includes 24/7 (excluding some holidays) hardware technical support via toll-free phone plus a concurrent International Traveler's Warranty for travel outside the U.S. and Canada. Extra protection is available with one of these upgrades:

2-Year Extension of Limited Warranty (146.AB820.EX2)

\$99

Prepays freight to and from Acer repair depot.  
Excludes extension of International Traveler's Warranty.

It's a tough world out there, and accidents do happen—sticky spills, dangerous drops, nasty knocks—which is why you should consider the Total Protection Upgrade. It runs concurrently with the limited warranty<sup>1</sup> and limited warranty extension and covers the cost of a replacement unit if your covered notebook cannot be repaired.

2-Year Extension of Limited Warranty + 3-Year Total Protection Upgrade (146.AD077.002)

\$199

Prepays freight to and from Acer repair depot.  
Excludes extension of International Traveler's Warranty.



Acer recommends Microsoft® Windows® XP Professional.



The Acer Aspire 1360 is the ideal portable for use all around the house. Work or play when and where you want—your home office, living room or kitchen. You'll be taking great entertainment features with you, as well as easy access to the internet and the ample power of a Mobile AMD Sempron™ Processor 3000+.

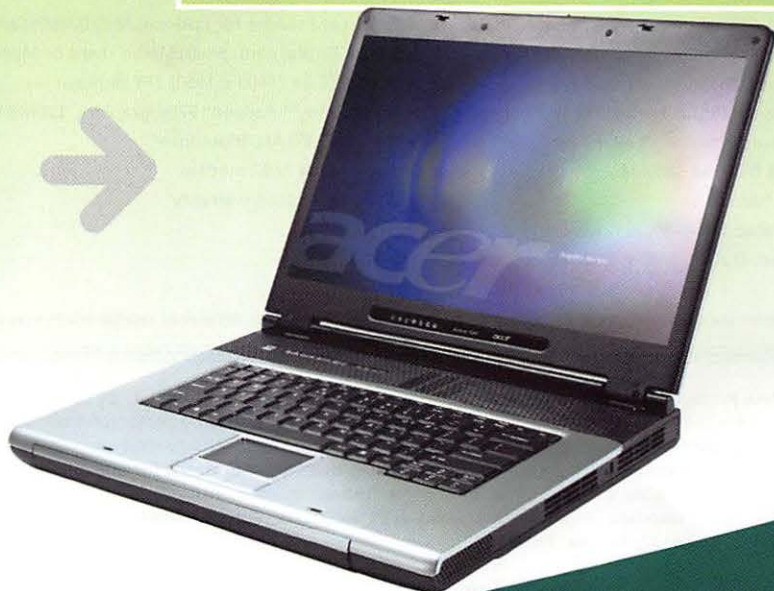
- Mobile AMD Sempron™ Processor 3000+
  - AMD PowerNow!™ Technology
  - HyperTransport™ Technology
  - Enhanced Virus Protection Technology¹
- Microsoft® Windows® XP Professional
- 512MB DDR333 SDRAM
- 60GB² hard drive
- Integrated CD-RW/DVD-ROM combo drive
- 15.0" XGA (1024 x 768) TFT display
- VIA K8N800 chipset with integrated UniChrome™ 2 graphics
- 802.11b/g WLAN, gigabit LAN, V.92 modem
- One-year limited warranty³

## Acer® Aspire™ 1360

High Entertainment Value



EMPOWERING KEYS



Acer Aspire 1363LCI-XPP

**\$ 899**

Mobile AMD Sempron™ Processor 3000+  
Microsoft® Windows® XP Professional  
(LX.A3606.015)

Prices shown are estimated street prices and do not include tax or shipping.  
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## Ferrari 3400

### Applied*passion*

**Ferrari**

OFFICIAL LICENSED PRODUCT

Technology is the work of many; passion is strictly personal. The **Ferrari 3400** notebook brings together both to achieve what one cannot reach alone. This slim and elegant work instrument is a triumph of the latest advances in mobile 64-bit technology, combining sublime natural good looks and inspirational mobile power. The **Ferrari 3400** provides a stunning window into the soul and passion of "no compromise" professionals.

- Mobile AMD Athlon™ 64 Processor 3000+
  - AMD PowerNow!™ Technology
  - HyperTransport™ Technology
  - Enhanced Virus Protection Technology<sup>1</sup>
- Microsoft® Windows® XP Professional
- 512MB DDR333 SDRAM
- 80GB<sup>2</sup> hard drive
- Integrated Super-Multi drive (DVD+R, DVD-R, DVD-RAM)
- 4-in-1 card reader for optional MultiMediaCard™, Secure Digital card, SmartMedia™ card or Memory Stick®
- 15.0" SXGA+ (1400 x 1050) TFT display
- ATI Mobility™ Radeon® 9700 graphics, 128MB DDR
- 802.11b/g WLAN, Bluetooth®, gigabit LAN, V.92 modem
- One-year limited warranty<sup>3</sup>

**Ferrari 3400**

**\$1,999**

(LX.FR306.002)

Prices shown are estimated street prices and do not include tax or shipping. Retailer or reseller prices may vary.

<sup>1</sup> Enhanced Virus Protection (EVP) is enabled by Microsoft® Windows® XP Service Pack 2. By default, EVP will protect the user's Windows operating system only. Users must enable the protection of their applications and associated files to be protected from memory buffer overrun attacks. AMD and Microsoft strongly recommend that users use third-party anti-virus software as part of their security strategy.

<sup>2</sup> When referring to storage capacity, GB stands for one billion bytes and MB stands for one million bytes. Some utilities may indicate varying storage capacities. Total user-accessible capacity may vary depending on operating environments.

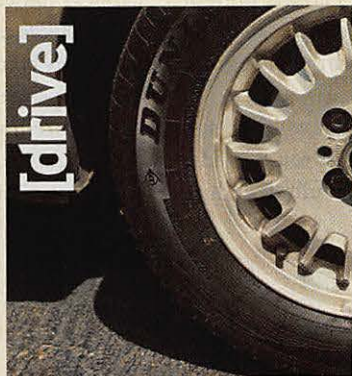
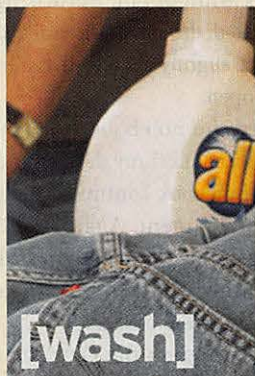
<sup>3</sup> For a free copy of the standard limited warranty end-users should see a reseller where Acer products are sold or write to Acer America Corporation, Warranty Department, P.O. Box 6137, Temple, TX 76503.

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# HARDWARE TORTURE TESTS

Can today's portable products take a licking and keep on ticking? To find out, we dropped them. We ran over them. And we put them through the spin cycle.



BY MICHAEL CAHLIN

OVER THE YEARS, my notebooks, digital cameras, music players, and cell phones have hit the floor more often than a WWE wrestler. I have accidentally lost a digital camera at sea, dry-cleaned an SD Card, and run over a cell phone, all without really trying.

Which raises the question: Just how reliable are the tech products we depend on every day? Can a notebook survive a 6-foot drop? Will your USB memory key still work after taking a spin in a washing machine? Will an iPod sing after it's been dropped in the sand? I set out to get some rough answers to these tough questions. I collected a variety of widely used mobile products—including a notebook computer, a digital camera, a cell phone, a smart phone, an MP3 player, a USB memory key, and an ►



## Down-pour:

Though it was able to withstand numerous drops, the Gateway 3018GZ notebook couldn't handle coffee spilled on its keyboard.

SD media card—and put them through informal, simulated accidents to see how much maltreatment these electronic gadgets could withstand.

I dropped a few onto the floor, spilled liquid on them, and generally banged them around. I even drove my car over a few. None of my tests were entirely scientific, but in some cases I really pushed the limits, subjecting the products to the kind of abuse that could only be expected to destroy them. In most of those cases, I got my wish. Please don't think badly of me—I did it in the name of curiosity (and maybe a little payback for all the times my tech products have failed me).

For the most part, the products I tested were stronger and more durable than they looked. But without exception, each would have fared even better had it been inside some kind of protective case or covering. And while you can't always prevent accidents, you can prepare for them. For more on how to guard your hardware from mishaps, see "Protect Your Gear" on page 108.

If your work takes you to locations with extreme conditions, chances are good that you'll need a ruggedized product—one that's built to endure hard knocks. The PC World Test Center looked at a couple of ruggedized laptops to see how much rough handling they could weather. The Test Center found

that the notebooks stood up to our abuse amazingly well. For more on our testing methods, see "Built to Take a Beating" on page 101.

### DROWNING A NOTEBOOK

TO TEST A Gateway 3018GZ notebook with a 14.1-inch wide-aspect screen, I packed it in a Kensington shoulder bag, and then deliberately banged it against doors and walls (much to my girlfriend's chagrin). While it was still in the bag, I dropped it off a 6-foot-high bookcase onto a carpeted floor to simulate a drop from an airplane's overhead bin.

I held my breath every time the bagged notebook ricocheted off a wall or crashed to the floor. But the Gateway responded like a cagey fighter trained to withstand damaging body blows and get up off the canvas. It consistently rebooted and recognized my wireless network without fail. Surprisingly, no plastic pieces cracked, though on several occasions the battery became slightly dislodged and the optical drive popped open.

I then removed the notebook from the bag, closed it, and knocked it off my desk onto the carpeted floor. The notebook continued to take the punishment. Again, the battery dislodged and the optical drive opened, but otherwise the system continued to work.

Dropping the Gateway onto a hardwood floor caused severe physical damage. The notebook's screen cracked, and the black plastic molding above the keyboard popped out. Plastic splinters littered the floor, and the optical

drive refused to open. I inserted a paper clip into the hole next to the open/close button to release the drive, however, and it continued to work. Though scratched, scraped, and pretty banged up, the Gateway could still operate.

Coffee spilled onto the notebook's chassis was the coup de grace. I tipped coffee in my travel-size mug onto the keyboard, causing a slight sizzle, after which the Gateway's blue light winked out like the HAL 9000 computer in 2001. Like a frenzied ER physician, I quickly turned off the machine, removed the battery, drained the liquid, mopped the keys, set the unit aside, and waited—but the patient died on the table. None of my efforts resuscitated the critically wounded laptop.

Though many notebooks have "water-resistant" features such as a protected keyboard, my advice is





## Built to Take a Beating

**TEST Center** OUR INFORMAL TESTING shows that some everyday products absorb rough treatment surprisingly well. If you can't take a chance with your hardware, though, you may want to spring for ruggedized products. They tend to be pricey, but they are built to withstand falls, spills, and extreme conditions.

To see what sorts of knocks these hardy machines could take, we looked at

two ruggedized notebooks—the Getac M220 and the Panasonic Toughbook 29—both heavy, magnesium-alloy-clad models that resemble sturdy suitcases.

We had hoped to test standard notebooks from Apple and IBM that promise to park their hard drives during a fall, to protect your data. However, Apple wanted us to catch the notebook rather than let it fall to the ground, and we didn't think that would be an adequate test of its capabilities. IBM declined to participate in our review because the company was uncomfortable with our testing methodology.

To formulate our test plan, *PC World Per-*



**BRAWNY AND RESILIENT:** Panasonic's Toughbook 29 (left) and Getac's M220 have protective port covers (inset).

formance Analyst Tony Leung analyzed the U.S. military testing specification (MIL-STD-810F), which delineates how to test products that will be used in extreme conditions. We tested the laptops by powering them down and dropping them 3 feet onto carpet-covered concrete four times—on the front, back, top, and bottom. After each drop we booted them up to make sure they were functioning properly. We also poured 10 ounces of water on each keyboard.

Both notebooks sailed through our tests.

After the Panasonic's final drop, its hard-drive connection came loose, and we had to reseat it for the system to return to normal and reboot. The Getac sustained some minor scratches to its handle, but it functioned fine. The water that we spilled on both models didn't affect them.

Both notebooks are designed to handle hard knocks. They each have sturdy port covers to protect all the connections and drives, as well as water-resistant touch screens and keyboards. The Getac has a 1.4-GHz Pentium M processor, 1GB of RAM, and a 14.1-inch screen, while the Panasonic has a 1.3-GHz Pentium M, 256MB of RAM, and a 13-inch screen. The extra toughness comes at the cost of added weight: Both models weigh over 9 pounds. And neither model is cheap: The Getac costs \$3995, and the Panasonic costs \$3848.

In the course of an ordinary day, most people don't need a ruggedized laptop. But if your work takes you into extreme conditions in which you're rough on your notebook, a ruggedized model would be worth the investment. —Kalpana Etnenson

not to drink anywhere near your hard drive. Or at the very least, use a travel mug or bottle with a closable mouthpiece, and keep it shut. **GRADE: STURDY**

### CAMERA ON CONCRETE

A DIGITAL CAMERA HAS loads of fragile components, so it's prone to damage when it takes a fall. Case in point: The Canon PowerShot A510 digital camera proved to be the most delicate of all the gadgets that I looked at.

I dropped the Canon from my desk onto the carpet—a fall it survived, though it started collecting dings. Dropping it onto the hardwood floor popped open the SD Card slot, opened the chassis, knocked out the batteries, and broke the flash. Luckily, all the pieces snapped back in easily, and the camera happily resumed shooting pictures.

A concrete patio proved to be the camera's undo-

## Extra Tough:

If your work takes you into extreme conditions, a ruggedized notebook is worth the investment.

ing. I placed the Canon on the edge of a table and tipped it over onto the ground. The camera body opened slightly on the initial crash, but I was able to close it and still operate the camera. Over the course of the second and third drops, the shutter button came off, the rubber terminal cover flap and the SD Card slot both popped open, and the zoom lens became sluggish, requiring hands-on help to literally pull out the lens. Still, the Canon could take pictures (without the flash), and every internal feature I tested worked perfectly.

Drop nine finally killed the camera. The viewfinder lens broke, and the zoom lens no longer worked. The chassis cracked open on the top and then on the left side, though both pieces could be snapped back into place. The camera still turned on and the color display flashed the blue Canon logo. I could hear the zoom lens's internal



**Free Fall:**  
Several drops onto concrete caused the Canon PowerShot A510 to crack open and become inoperable.



mechanism chugging, but then the screen went blank. A mysterious white "E18" appeared in the lower-left corner, and the camera shut off.

To tweak the old adage about lawyers, a digital camera without a protective case has a fool for an owner. Not only does a padded case protect the camera, but often it also has built-in pockets for batteries and memory cards.

GRADE: FRAGILE

### CELL PHONE VS. BMW

MORE THAN A BASIC HANDSET, the pocket-friendly Motorola V220 flip phone includes a color screen, an integrated camera, a USB 2.0 port, and a speakerphone, and it lets you surf the Web. I severely tested the V220's solid construction, a challenge it passed with flying colors.

I first started beating up the V220 in my car, by placing it on the dashboard and taking sharp turns. It banged against the windshield and doors, and eventually bounced to the floorboard. The barrage of knocks barely marred the sleek silver-and-black casing, and all features continued to work.

Dropping the phone on wet grass also produced no ill effects—a quick wipe, and it was as good as new. Repeated pavement poundings popped the battery on occasion and added several surface nicks, but the V220 remained unfazed.

Finally, I closed the phone and ran over it with my 1987 BMW 325i on my paved driveway. I moved the car *s-l-o-w-l-y* and then rested its full weight on the V220, three times. I figured that would pretty much de-

molish the device. The display cracked, leaving a blue and red Rorschach blot, and the back cover burst loose, taking the battery with it.

But surprisingly, the car did not crush the phone, crack the back cover, or destroy—let alone dent—the battery. What's more, I was able to fit all the phone's loose pieces back into place perfectly. Even more amazing, the V220 was still able to receive and place phone calls, though the sound was a little tinny and sometimes crackled. Every feature tied to the shattered display—autodialing, caller ID, address book, Web surfing, text messaging, and camera—was completely inoperable. Nevertheless, the fact that I could still make calls was pretty darned impressive.

GRADE: VERY STURDY

### STRONG SMART PHONE

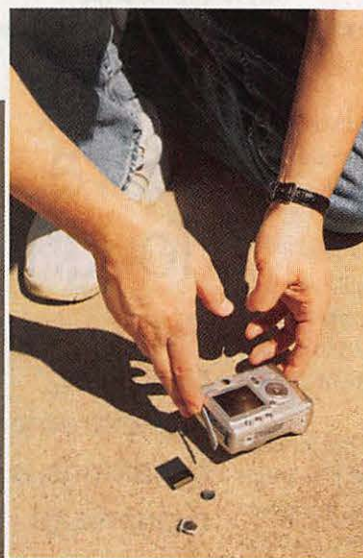
WITH A GORGEOUS color screen and a delicate feel, the PalmOne Treo 600 smart phone seemed destined for disaster. How wrong I was in assuming that.

I subjected the Treo 600 to treatment similar to that which I inflicted on the Motorola cell phone: I bounced it inside my car and dropped it off a desk onto carpeted and hardwood floors. I also stepped on it, and buried it completely in the sand at the ocean. (And, while it was not a sanctioned part of the test, my cat swatted the unit several times, too.)

Even though the Treo 600 was not protected by a shock-absorbent case or plastic screen cover, it laughed off the car beatings. The phone lost no calls, nor did it accidentally turn on or shut off. Repeatedly knocking it off the desk onto a carpeted floor also left it undamaged, although the unit did turn off on several occasions.

The desk-to-hardwood-floor test produced scratches but nothing else. If dropped when in phone mode, the Treo automatically turned off. If an application was running—the calculator, for example—the device stayed on and the data remained on screen, though a mysterious extra 9 appeared every time I dropped it. All smart phone features performed perfectly after each test.

As I buried the Treo in dry sand, I got more than a few are-you-crazy looks from passersby, but the sand did nothing to beach the PalmOne. Sand particles became wedged







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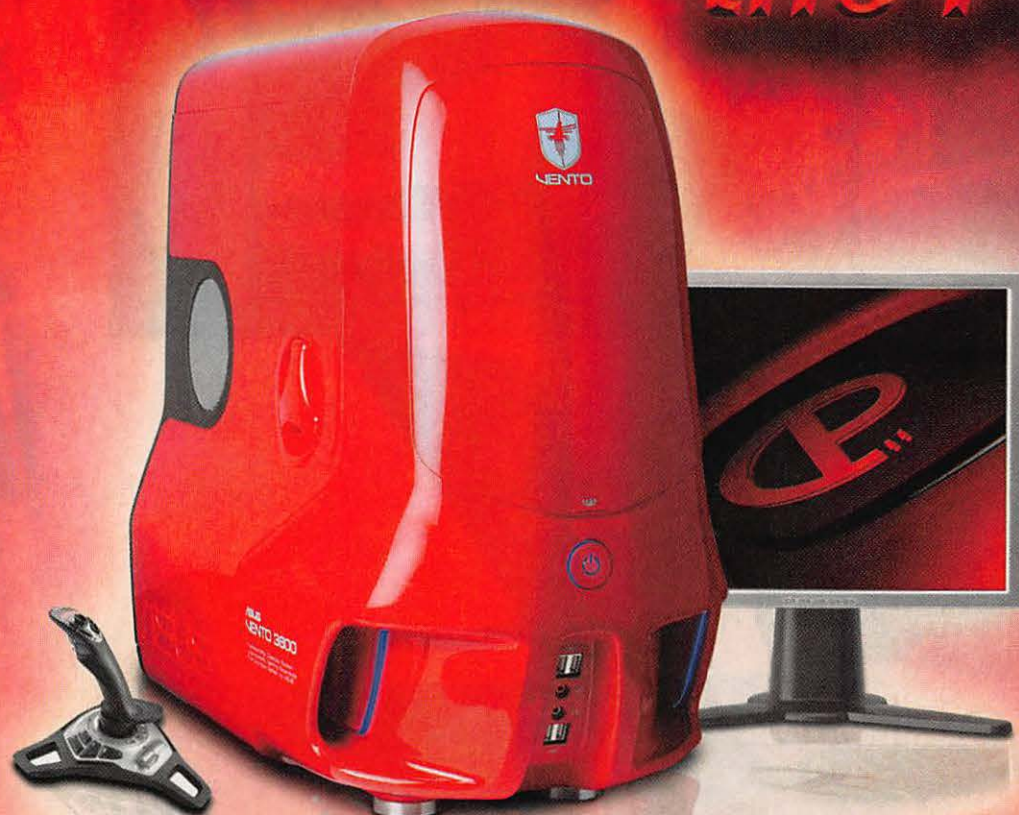
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[drive]



## Road Warrior:

Despite being driven over by a car three times, the Motorola V220 cell phone could still make and receive phone calls.



under the display casing and keypads, but aside from a little crunching as I pressed the keys (which eventually disappeared) and a smattering of sand detritus that continued to filter out, all of the Treo 600's myriad smart-phone capabilities continued to work perfectly. I would buy this rugged smart phone in a heartbeat. **GRADE: EXTREMELY STURDY**

### MP3 PLAYER GETS CRUNCHY

I TOOK A 6GB silver iPod Mini along in my car for a bouncy ride, dropped it on wet grass and dry pavement, knocked it off a desk onto carpeted and hardwood floors, and dropped it in dry sand.

Like a nervous runway model, the iPod Mini looks great but spooks easily. Bouncing inside the car caused a couple of skips. Drops on soft wet grass and carpet had no ill effect, though the pretty player practically begs to be wiped clean.

Dropping it from the car seat to the curb, and off a desk onto a hardwood floor, produced a few nicks and caused songs to skip and the device to shut down repeatedly. Still, all the unit's features continued to work after the abuse, and songs played.

But my Mini did not like the beach. Without the

benefit of a protective case or plastic display covering on the unit, sand wedged under the scroll wheel, affecting all controls. I could see the feature settings and highlight them, but the crunching sand somehow prevented the Mini from launching them. The unit turned on, but could not turn off. I had to wait several minutes for the iPod's automatic shutdown feature—which kicks in after a few minutes without play—to take effect.

Although I was able to turn the player back on, the screen was jumpy; and, again, settings could be highlighted but not set. After I blew off the external sand with compressed air and gently shook the unit, the Mini pulled itself together and began to work properly. Unfortunately, I found no easy way to open the case and blow out the sand that remained trapped inside. I could still hear the grains crunching under the wheel and inside the unit. What's more, weeks after the test, the unit is still slow to turn on and off, sometimes requiring that I press the wheel several times before it wakes up or shuts down. Nevertheless, to its credit, all of the iPod Mini's features work. **GRADE: STURDY**

### SUPERLATIVE MEMORY KEY

LEXAR CLAIMS that its JumpDrive Sport 256MB USB 2.0 Flash Drive is "built for the rugged life." A rubber cap protects the device, absorbing shock from any drops. For these experiments I used the device without its cap, to really test its mettle (and, more honestly, because I misplaced the cap).

I knocked the drive off a desk to a hardwood floor, dropped it, stepped on it, and buried it in the sand. It also took a spin through the washing machine and dryer. Just to mix things up, I ran over it with my car, too.

There is truth in advertising. Neither water, heat, sand, nor BMW could keep the memory key from its appointed storage rounds. Abuse bounced off the Lexar like bullets off Superman. The car did squeeze the metal USB connector tip a tad tighter, but the device was still able to make contact with the USB port, and it worked perfectly. No wonder these durable drives have kicked the venerable floppy into extinction. **GRADE: EXTREMELY STURDY**

### MIGHTY MEMORY CARD

MY BIGGEST COMPLAINT with portable storage devices like the SanDisk SD 64MB media card is that they're so easy to misplace. As for the media card's durability: spectacular. I swatted it off a ▶





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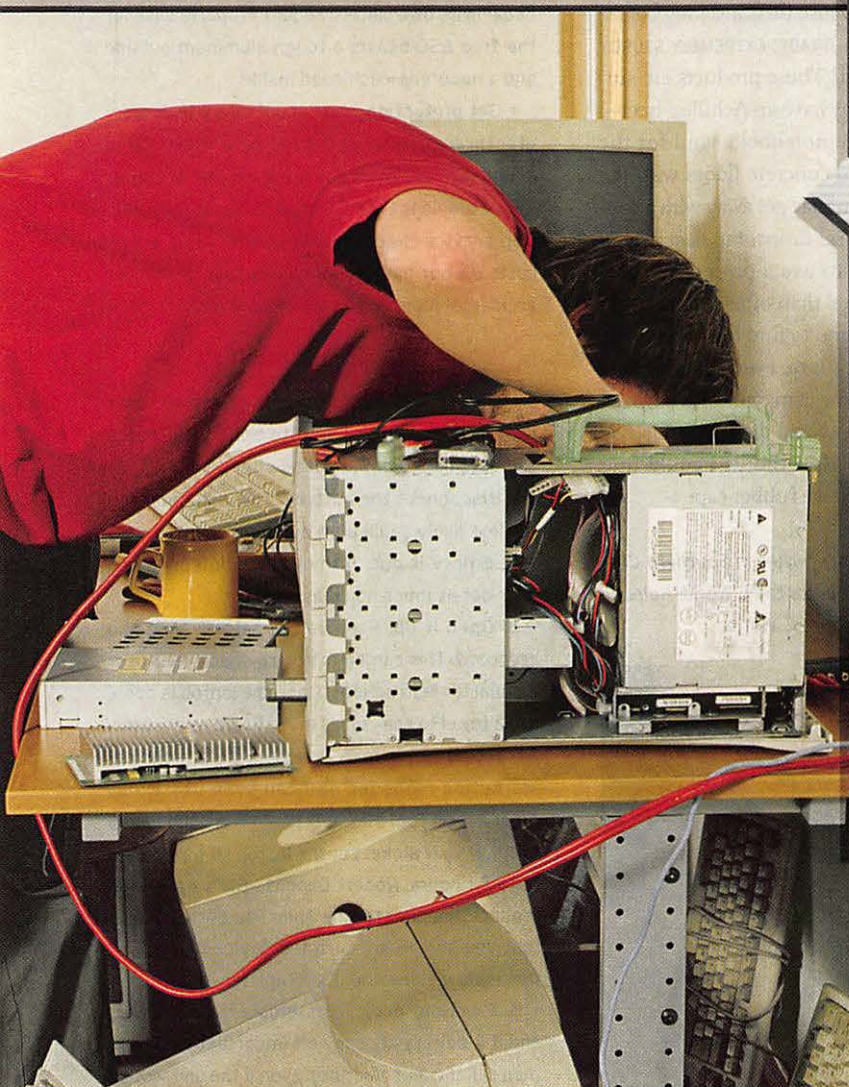
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## Wash 'n' Go:

Both the Lexar Jump-Drive Sport 256MB USB 2.0 Flash Drive and the SanDisk SD 64MB media card survived the washer and dryer.

desk onto a hardwood floor, dropped it, stepped on it, and buried it in the sand. I also "forgot" it in a jeans front pocket, where it underwent a two-rinse cycle in the wash and then tumbled in the dryer for an hour on a high "cotton" setting.

The SanDisk memory card aced every torture test. During its dryer spin, the card tumbled out of the pants pocket. I finally found it nestled in a sheet, and after taking it out, it still worked.

Then, I placed the card in the Canon camera where it was repeatedly dropped. It survived every test, data intact. I'll likely lose this card long before it ever loses any data. **GRADE: EXTREMELY STURDY**

So what I have learned? These products are surprisingly tough, but many have an Achilles' heel—liquid in the case of the notebook, sand for the iPod, and hardwood and concrete floors with the digital camera. While you may get away with a couple of accidental spills and drops, the best way to safeguard your gear is to use a protective case. Some are more cushioned than others, though, so be prepared to shop around to find the perfect one for you. As for me, well, I have even more respect for my tech products. Gone is my need for payback for all the destroyed drives and dropped calls I've endured over the years. Now if only I could find that memory key's protective rubber cap. ■

*Michael Cahlin is a freelance writer in Southern California and a frequent contributor to PC World. Kalpana Ettenson is a senior editor for PC World.*



## TIPS

### Protect Your Gear

ELVIS COSTELLO WAS RIGHT—accidents will happen. Here's how to minimize the damage.

- **Bag it:** Place your products in a cushioned case or shock-absorbent travel bag. The secret is to make sure it has plenty of padding. Special compartments inside RoadWired's \$50 Podzilla put every portable gizmo—PDA, cell phone, notebook—in its own place. The \$34 Proporta case for the Treo 650 boasts a tough aluminum outside and a neoprene-cushioned inside.

- **Get protection:** Just about every tech manufacturer offers some type of warranty and equipment-replacement program. For example, Sprint provides the PCS Total Equipment Protection service ([find.pcworld.com/47624](http://find.pcworld.com/47624)), which costs \$5 per month and covers loss, theft, and accidental damage to your cell phone.

### I SPILLED ON MY NOTEBOOK!

AFTER MY NOTEBOOK died, I talked to some experts to get tips on how to bring your laptop and data back from the dead after a spill.

1. **Disconnect the battery:** The faster you are, the less likely you'll burn out components.

2. **Empty it out:** Turn over the notebook and pour out as much liquid as possible.

3. **Open it up:** Remove the optical drive and keyboard. This can be tricky, so check your user manual for instructions. Once the laptop is open, use a towel to soak up as much liquid as possible. According to Herman De Hoop, HP's technical marketing manager, you can even use a hair dryer set on cool (not hot) to blow-dry the liquid.

4. **Leave it alone:** Let the laptop sit for at least 12 to 24 hours. Robert Enochs, IBM's worldwide product manager for the ThinkPad Series, warns that you should not turn the device on until all the liquid is gone and it's completely dry.

5. **Plug-and-pray:** Reassemble the notebook, and if it powers up, copy off important data, and then call the manufacturer. Even if the unit works, a professional cleaning is recommended.

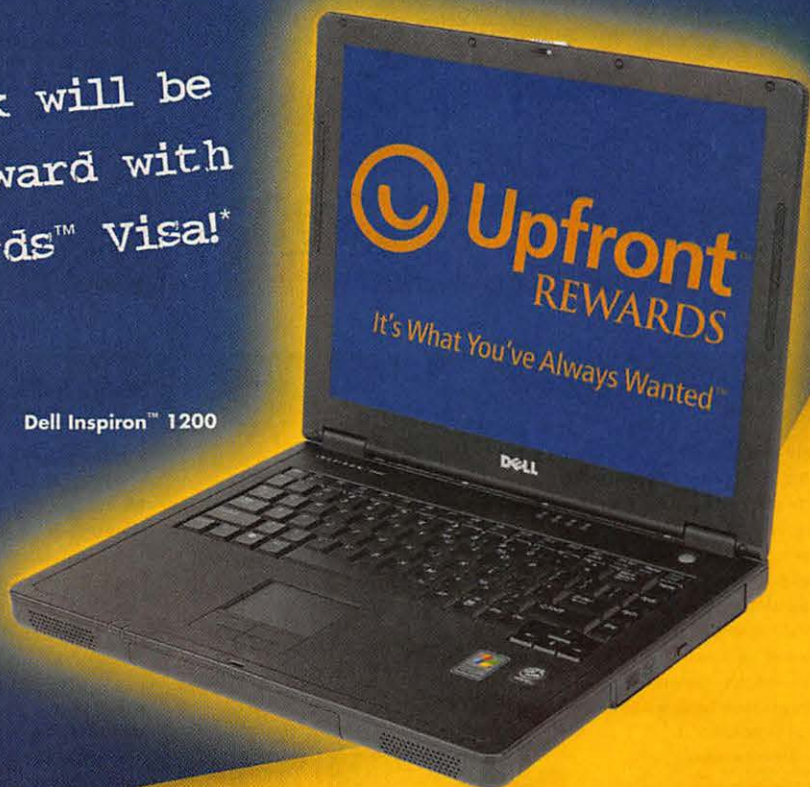
6. **Enter a recovery program:** If things still aren't okay, you have one more option. For an average price of \$900, data recovery services like DriveSavers ([find.pcworld.com/47622](http://find.pcworld.com/47622)) can rescue data from drowned hard disks. —M.C.



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# Multi-tasking. Multi-talented.

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**ZT Optimum 1U Server X6699**

• Basic applications server, most affordable price.

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- Integrated Serial ATA Controller (RAID 0, 1, JBOD)
- Slim 24x CD-ROM
- Dual 10/100/1000 Gigabit Network Controller
- 1U Rackmount Chassis w/350W Power Supply
- 3-Year Limited Warranty

**\$1,499**

Upgrade to:  
• Microsoft® SBE Server 2003 Standard w/5 Client Licenses (add \$389)



**ZT Optimum Tower Server X9450**

• Maximum performance for most application.

- Intel® Xeon™ Processor 3 GHz
- Upgradable to Dual Intel® Xeon™ Processor 3.60 GHz, 2MB L2 Cache, 800MHz FSB
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- 7x 1" Hot-swap Serial ATA Drive Bays
- 1.44MB Floppy Drive
- 52x32x52 CD-RW
- Integrated Serial ATA Controller (RAID 0, 1, JBOD)
- MID Tower Server Chassis w/645W Power Supply
- 3-Year Limited Warranty

**\$1,499**

Upgrade to:  
• Microsoft® Windows® Server 2003 w/5 User License (add \$689)



**ZT Optimum 3U Storage Server X9451**

• Maximum scalability at most competitive price.

- Intel® Xeon™ Processor 3 GHz
- Upgradable to Dual Intel® Xeon™ Processor 3.60 GHz, 2MB L2 Cache, 800MHz FSB
- Intel® E7520 chipset Server Board
- 1.0GB ECC Registered DDR333 SDRAM (Up to 16GB)
- 15x Seagate® 300GB SATA 7,200RPM w/8MB Cache Hard Drive (Total 4.5TB Storage)
- 15x 1" SATA Hot-Swappable Bays
- Dual 8 Ports 16 Channel Serial ATA Controller (RAID 0, 1, 5, 10, 50, JBOD Support)
- ATI Rage XL SVGA 8MB PCI Graphics
- 2x Intel® 10/100/1000 Gigabit Network Controller
- 3U Rackmount Server Chassis w/760W Triple-Redundant Power Supply
- 3-Year Limited Warranty

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DOWNLOADING

**Bada-bing.**

**Bada-boom.**



**90X speed.**

Tired of agonizingly slow downloads on your USB drive? Shift into USB overdrive with the Verbatim Store 'n' Go™ Pro and get 90X speed that transfers files at a blazing 14MBs per second. There's also  the original Store 'n' Go™ – easy, economical, and like the Store 'n' Go™ Pro, backed by a Limited Lifetime Warranty. For cost-effective mega-storage, Verbatim offers  the Store 'n' Go™ USB HD Drive with 2.1GB capacity. All the drives offer impeccable data integrity at a price competitive with far less reliable units. So plug in Store 'n' Go™, drag and drop your files, and Bada-bing, Bada-boom, you're outta here. Verbatim USB drives. Get connected.

**Verbatim.**

[www.verbatim.com/usb](http://www.verbatim.com/usb)

1MB = 1 million bytes / 1GB = 1 billion bytes

Some of the capacity is used for formatting and other functions, and thus is not available for data storage. As a result, your operating system may report as fewer megabytes [gigabytes].

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Technology that powers your life

# DIGITAL WORLD

EDITED BY ALAN STAFFORD

## GREAT GEAR SITES

THE NET IS BURSTING WITH STUFF FOR DIGITAL ENTERTAINMENT FANS—FROM DOWNLOADABLE CONTENT TO HDTV ADVICE. WE UNCOVER THE BEST SITES AND SERVICES. **BY SEÁN CAPTAIN**

QUICK! WHO'S OFFERING the lowest prices on 65-inch rear-projection TVs this week? What's the best site for downloading tracks from your favorite musicians (or artists you've never heard of)? Which DVD players can format movies for a 1080p LCD TV?

Becoming an expert on digital entertainment products may not be a cakewalk, but finding expert advice is easy. If you have a question—from "What does it do?" to "Where is the best place to buy it?"—chances are good that the Web has the answers for you.

We scoured the Web to find the top sites on an array of topics. Our discoveries range from sources for professional and user reviews of complex products such as HDTV sets and 7.1-channel surround-sound systems, to sites supplying sage advice on how to

set up, use, and troubleshoot many types of products. User group members happily tackle all varieties of topics, be they technical queries like "What is low-level video noise?" or philosophical matters such as whether an LCD TV is really better than a plasma one. ►



Some of the most useful sites help you unearth buried treasures. Impressed by your neighbor's great audio receiver, which retailers no longer sell? Look for it in Audiogon's classified ads. If you're hoping to be first on your continent with the latest hot gadget, try importers like JapanDirect, which challenge the "available only in Japan" notion. And if you want to check out a DVD movie before you buy it, watch the flick's trailer—or perhaps an in-depth interview with the director—on IFilm.

These are our favorite sites, from mainstream stalwarts to quirky, hidden gems.

## SHOPPING ADVICE, DEALS, AND STORES

**Round up the reviews:** With so many reviews available online, you should never have to settle for a salesperson's word on a product. **ECoustics** ([www.ecoustics.com](http://www.ecoustics.com)) links to professional and user reviews from dozens of Web sites. And despite the name, ECoustics goes beyond home audio, providing comprehensive coverage of video products, digital cameras, car audio, and MP3 players. However, a new Computers section, which includes cell phones, is rather sparsely populated so far.

**Check store sales:** Even Web addicts sometimes venture out to "real" stores. Before you go, check **Sales Circular** ([www.salescircular.com](http://www.salescircular.com)) for listings of current specials on electronics at major retailers, including Best Buy, Circuit City, CompUSA, and even Kmart. Listings are organized by state and product category.

**Buy Japan's finest:** As any gadgethead knows, some of the coolest devices from Japan

## QUICK HITS

### FIVE SITES FOR TV JUNKIES

**Home Theater Forum:** Huge collection of audio and video discussion groups ([www.hometheaterforum.com](http://www.hometheaterforum.com)).

**Projector Central:** Reviews and discussions about home theater projectors ([www.projectorcentral.com](http://www.projectorcentral.com)).

**Home Theater Info:** Complete listing of current DVD titles and scheduled release dates ([hometheaterinfo.com](http://hometheaterinfo.com)).

**TitanTV:** Customizable listings for broadcast, cable, and satellite TV offerings ([www.titantv.com](http://www.titantv.com)).

**High Def Forum:** HDTV discussion forums spanning a range of topics, from hardware to content ([www.highdefforum.com](http://www.highdefforum.com)).

never reach U.S. stores. If you can't go to Tokyo, try **Japan Direct** ([www.japan-direct.com](http://www.japan-direct.com)). The site presents a selection of products such as laptops and PDAs comparable to what's available from its better-known rival, **Dynamism.com** ([www.dynamism.com](http://www.dynamism.com)). Japan Direct's offerings are even broader in some other categories, including digital cameras. Don't worry about learning Kanji; nearly every product comes with English-language software and documentation. And if you're jonesing for a gizmo that isn't listed on the site, you can special-order any gadget priced over \$100.

**Browse audio imports:** But if you're looking for Japan-only sound gear, start with **Audio Cubes** ([www.audiocubes.com](http://www.audiocubes.com)). Need an Audio-Technica AT-LH15 OCC head shell for your turntable? This site has it. The selection is especially good for headphones, earphones, and portable audio, home audio, and car audio items. The site also sells (though not always at the best prices) some products you can find at other retailers. Companion site **Audio Cubes II** ([www.audiocubes2.com](http://www.audiocubes2.com)) carries very high-end Japanese audio equipment.

**Hit the classifieds:** You'll find upscale audio gear from

all over the world at **Audiogon** ([www.audiogon.com](http://www.audiogon.com)). This Web site is like the ultimate EBay for audiophiles: It features both new and used products for sale from individual members, small-time commercial sellers, and full-size dealers. You can browse, bid, and place a want ad for free. Individuals selling items pay \$4 for a 30-day classified ad or a 3-to-14-day auction. For \$50 per year (or \$20 for 30 days), users can access the site's excellent "blue book" listing of recommended prices for used audio equipment.

**Find online deals:** Shopaholics unite at **Tech Bargains** ([www.techbargains.com](http://www.techbargains.com)), a PC World partner site that provides daily blurbs about online electronics deals and discounts as well as coupons and rebate offers. Are you certain you don't need a 6.1-channel receiver? Even if it's on sale right now for \$239.99? Purposeful buyers can search for current specials in product categories including audio and video equipment, digital cameras, and computer gear.

## AUDIOPHILE AND VIDEOHILE HAVENS

**Geek out on TV:** If you're feeling alone in your single-minded obsession with TV and video, you'll find plenty of company on the **AV Science Forum** ([www.avscienceforum.com](http://www.avscienceforum.com)), where at any time you are likely to find at least a thousand other fanatics browsing and posting to more than 40 discussion groups. You say that you're interested in projectors? Great, but can you be more specific? The site has 4 groups on the topic—1 dedicated just to screens. It also has groups for flat-panel, rear-

**jd** HOME PRODUCTS ORDERS GENERAL INFO Japan Direct

SEARCH QUICK LINK Recommendations

Recommendations: Cameras, Laptops, MD Accessories, MD Blanks, MD Car, MD Players, MD Recorders, MP3 Players, Other, PC Accessories, PDAs, Photography, Power Adaptors, PSP, Software, Translators, Video, Za Arts, Special Orders

The following models are Japan domestic models, unless otherwise stated. All have basic English manuals and controls are in English.

**JVC XM-C31**  
Price: US\$249  
Color: blue, pink, white  
Qty: 1 X blue XM-C31 Add to cart

JVC's MiniDisc offering has taken the of "battery life" meaning to a whole new dimension. The XM-C31 player has a maximum playback time of 318 hours. This is with the combined use of the internal NiMH battery, one AA battery and LP4 playback mode.

Qty: 1 X blue XM-C31 Add to cart

JAPAN DIRECT sells gadgets you may never see in U.S. stores.





PITCHFORK DELIVERS music news and no-holds-barred reviews.

projection, and tube televisions. Don't be surprised if your post garners a response from a professional installer or an engineer. Despite many members' high level of expertise, they are generally happy to answer basic questions. RSS feeds should be available by the time you read this.

**Blab about audio:** If you're especially crazy about sound, check yourself into the **Audio Asylum** ([www.audioasylum.com](http://www.audioasylum.com)). This wildly active community, operated by a self-proclaimed "small volunteer group of audio lunatics," offers more than 50 discussion groups. One downside: The site's 1990s-style interface looks as retro as a vacuum tube amplifier. Or you can 12-step over to **Audioholics** ([www.audioholics.com](http://www.audioholics.com)), a support group that delivers plentiful product reviews (many of them written by engineers), news articles, and editorials, as well as excellent background articles on such topics as room acoustics and the meaning (or lack thereof) of product specifications. Also extremely handy, especially for newbies, are the buying guides that describe and recommend the best components for building sound sys-

tems in the \$1000, \$3000, \$5000, or \$12,000 range.

**Get the dish on music:** Once you've set up your system and are ready to play some tunes, read news and reviews at **Pitchfork** ([www.pitchforkmedia.com](http://www.pitchforkmedia.com)). The site provides daily updates on album release dates and concert tour schedules. And it's bursting with lively, opinionated reviews—like the one about Moby's latest album, *Hotel*, that states, "Songs tip off impending choruses like a bad poker player leaning back in his chair when he's got a big hand."

**Explore high-def audio:** More

#### QUICK HITS

## FIVE SITES FOR TIVO FANATICS



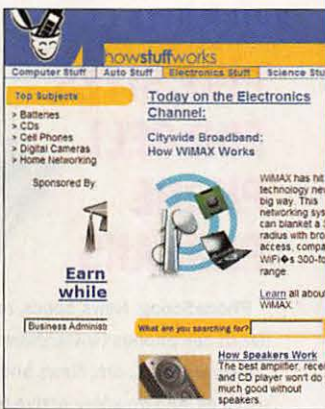
**PVRblog:** News and discussions about TiVo and other brands of digital video recorders ([www.pvrblog.com](http://www.pvrblog.com)).

**TiVo Community:** Enthusiastic discussion forums focused on all things TiVo ([www.tivocommunity.com](http://www.tivocommunity.com)).

**TiVo Techies:** Good source for information about übergeek hacks and modifications ([www.tivotechies.com](http://www.tivotechies.com)).

**WeakKnees:** Sells TiVo upgrade kits and services for increasing disk storage capacity ([www.weakknees.com](http://www.weakknees.com)).

**Interactive TiVo Upgrade Instructions:** Questionnaire that generates a custom guide ([tivo.upgrade-instructions.com](http://tivo.upgrade-instructions.com)).



HOW STUFF WORKS gets you up close and personal with your gear.



polite, but just as passionate, are the reviews of DVD-Audio and Super Audio CD discs offered at **High Fidelity Review** ([www.highfidelityreview.com](http://www.highfidelityreview.com)). The site's lengthy articles are replete with such gems of information as the history of the artist's original recording, or the technical merits of the new disc in question. The site also posts news about new recordings, technical issues, and insider talk on the high-definition-audio industry. When you are ready to buy, head over to **CD Universe** ([www.cduniverse.com](http://www.cduniverse.com)) to discover good deals on DVD-A and

SACD discs, plus a wide selection of DVD video, CD audio, and computer game titles.

## PLACES FOR PROPELLERHEADS

### Learn the techie backstory:

If you're a science geek, or just curious about what the thousands of dollars you're considering spending on, say, a plasma TV will buy you, browse through the Electronics section of **How Stuff Works** ([electronics.howstuffworks.com](http://electronics.howstuffworks.com)). Reading it, you would quickly learn that plasma is an electrically excited gas, that it releases photons, and that many other highly sophisticated processes go into making *The Ashlee Simpson Show* appear on your screen.

**Decipher the specs:** For practical advice on choosing and using your gear, check out the plentiful background articles at **Crutchfield Advisor** ([www.crutchfieldadvisor.com](http://www.crutchfieldadvisor.com)). You should take the reviews with a grain of salt, though; Crutchfield is an online store, and tends to like all of the products it sells.

**Hack your gear:** Once you know how things work, you may get ideas about how to make them work better, or just differently. **The Hack a** ▶



**Day blog** ([www.hackaday.com](http://www.hackaday.com)) and the Mods section of the Web site **Digg** ([www.digg.com/mods](http://www.digg.com/mods)) cover topics such as adding recording capabilities to your iPod and building a homemade LCD projector. **Xbox Hackz** ([www.xboxhackz.com](http://www.xboxhackz.com)) deals only with the Xbox, which has spawned an entire modification industry, including companies that sell upgrade chips to expand the console's capabilities. Likewise, **iPod Hackz** ([www.ipodhacks.com](http://www.ipodhacks.com)) focuses on Apple's audio player; the site has downloads for functions such as changing screen graphics and loading PowerPoint presentations onto the iPod Photo.

## MOVIE AND MUSIC COLLECTIONS

**Preview movies online:** If you're looking for DVDs to rent or buy, start with **Ifilm** ([www.ifilm.com](http://www.ifilm.com)). You can search for a movie and pull up, at a minimum, a synopsis and credits. Most entries also include video trailers and often special features such as interviews with the actors and directors. In addition, Ifilm has a staggering collection of small-screen videos for your

## QUICK HITS

### FIVE SITES FOR CELL PHONE PHREAKS



**PhoneScoop:** News, specs, reviews, and discussions on all manner of cell phones ([www.phonescoop.com](http://www.phonescoop.com)).

**HowardChui.com:** News and frequent reviews of products and services, and insanely active forums ([www.howardchui.com](http://www.howardchui.com)).

**Phone Mag:** Mobile phone news blog ([www.phonemag.com](http://www.phonemag.com)).

**Zingy:** Sells ring tones, graphics, and games ([www.zingy.com](http://www.zingy.com)).

**Treonauts:** Blog dedicated to the beloved smart phone from PalmOne; offers news and reviews ([blog.treonauts.com](http://blog.treonauts.com)).

computer, with brilliant short films, music videos, game previews, sports, and TV clips in the Windows Media Video, QuickTime, and Real Video formats. (Caution to parents: The site's Uncensored tab leads to explicit videos.)

#### Get the most music options:

A cross between a radio station and record store, **Rhapsody** ([www.rhapsody.com](http://www.rhapsody.com)) provides nearly 100 streaming music stations with various themes such as sixties pop, alt country, baroque, new wave, and underground hip-hop. Users can create their own stations, or stream most of a performer's songs or CDs on demand. They can also download songs, either as RealAudio 10 files for 89 cents a tune (99 cents for nonsubscribers) or as free "tethered" Windows Media Audio downloads that play as long as the user's membership is current (similar to offerings from services such as Napster to Go). Unlike other stores, Rhapsody offers some file format

leeway: Its software converts Real Audio 10 songs to copy-protected WMA or Apple's FairPlay format. Rhapsody is also supported by a number of network streaming devices—such as the D-Link Media-Lounge, Omnifi DMS1, or Roku Soundbridge—which pipe Internet radio to your stereo system, provided one PC on your network is running Rhapsody's software. Fees are \$5 a month for basic radio service; \$10 if you want to stream music and download tethered songs to your PC; or \$15 to transfer tethered songs to a portable player.

**Explore indie music—for cheap:** Music download services are now abundant, providing similar collections, prices, and restrictions. But **EMusic** ([www.emusic.com](http://www.emusic.com)) offers a different, and thrifty, model for music fans. The basic \$10 subscription allows up to 40 copy protection-free downloads per month in MP3

format, which plays on nearly any device. If you later regret taking a download, you'll be out only a quarter. You won't find many Top 40 hits on EMusic, but you will discover an impressive collection of lesser-known acts and exclusive live albums, such as *Taj Mahal Live at Fox Theatre*.

**Download DVDs?** If only we had a similar glut of sites selling movie downloads. The few currently in operation, such as MovieLink and CinemaNow, have small collections that play only on PCs or handhelds that support Windows Media 10 and Microsoft's digital rights management technology. Around the time you read this, however, **EZTakes** ([www.eztakes.com](http://www.eztakes.com)) plans to let you download the real deal—MPEG2-encoded movies com-

**EMUSIC CHARGES \$10 a month for 40 non-strings MP3s from its eclectic library.**

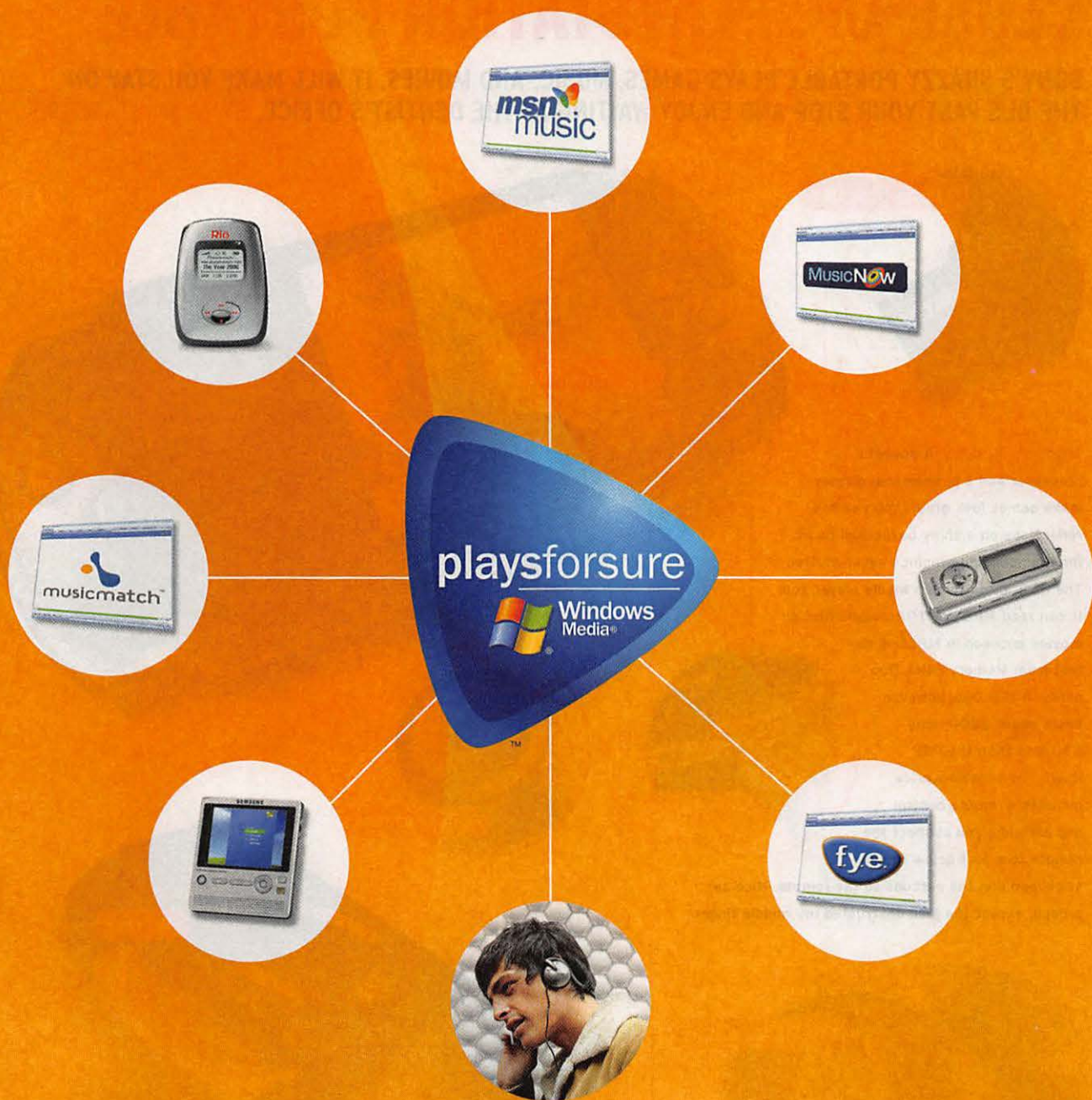
plete with menus, subtitles, and surround sound—to burn to disc and watch on TV using any standard DVD player. EZTakes expects to have a few thousand movies available by the end of the year, at prices lower than those of store-bought DVDs. But don't expect Hollywood blockbusters: As of press time no major studio had signed on. ■

*Seán Captain is a freelance writer and electronics nerd living in San Francisco.*

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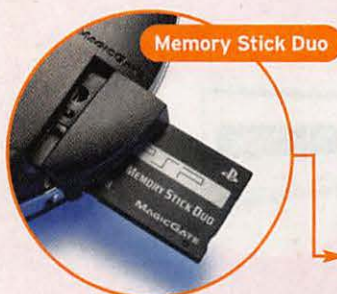
When your device and music service are compatible with each other, all you have to do is choose the music that's compatible with you. Look for the PlaysForSure logo on a wide range of devices and music services. For a complete list go to [playsforsure.com](http://playsforsure.com)



## HANDHELD ENTERTAINMENT

## CLOSE-UP: PLAYSTATION PORTABLE

SONY'S SNAZZY PORTABLE PLAYS GAMES, MUSIC, AND MOVIES. IT WILL MAKE YOU STAY ON THE BUS PAST YOUR STOP AND ENJOY WAITING AT THE DENTIST'S OFFICE. BY ALAN STAFFORD



Memory Stick Duo

**Major attractions:** A powerful processor and a phenomenal display make games look great. You can see reflections on a shiny basketball court, for example, and graphics never stutter. The PSP wants to be a media player, too: It can read MP3 or ATRAC audio files or movies encoded in MPEG-4 format from Memory Stick Duo cards. A 1GB Duo, however, costs about \$200—only \$50 less than the PSP itself. The console's price includes a remote control and earbuds; you connect the remote to a port below the joystick, and link the earbuds to the remote. Nice approach, except the jack obstructed my middle finger.



Headphone and remote jack



Remote control



Joystick button



Universal Media Disc

**Spin control:** The PSP's 1.8GB Universal Media Disc (right) has a 6-centimeter diameter (not counting its caddy). Unlike a standard 1.4GB, 8cm mini-DVD rewritable disc (left), a UMD is a read-only disc; you have to use a Memory Stick Duo to watch your own videos.



UMD slot

**Caddy shack:** Games, priced at \$40 to \$50 each, are available only on UMD. To play one, you insert a UMD (which never leaves its caddy) into a thin slot. The device comes with a copy of the movie *Spider-Man 2* on UMD; other movies on UMD cost \$20 to \$29 apiece. For more about the PSP's movie playback and other features, see [find.pcworld.com/47686](http://find.pcworld.com/47686).



# Come Together.



## LinkTheater™ High Definition Wireless Media Player *with Progressive Scan DVD*

(PC-P3LWG/DVD) LinkTheater integrates your wireless network with your home entertainment center in high definition featuring 802.11g wireless technology for high-speed wireless media streaming. Built-in AirStation One-Touch Secure System (AOSS™) provides push button wireless setup and top notch network security. Versatile media support allows you to easily access media content stored on your PCs, browse music files, watch videos, and display photos – all on your TV or HDTV. Now you can experience all of your digital music, photo and video files as they come together through your home entertainment system.

Find out more: [dw.buffalotech.com](http://dw.buffalotech.com)



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Linking your media with your lifestyle



## GADGET FREAK

DAN TYNAN

Untangle Your Living Room:  
Four Ways to Go Wireless

IT STARTED WHEN my wife brought home a cabinet for our home entertainment gear and a desk for the kids' PC. New furniture meant moving all of our old stuff, so I immediately embarked upon the Great Rewiring Project.

I spent 3 hours tangled in cables—attaching the satellite box (component), TiVo (coaxial), DVD player (S-Video), VCR (composite), and A/V receiver (RCA) to my 3M digital projector. I also plugged and unplugged the Wi-Fi router, cable modem, mouse, keyboard, monitor, printer, scanner, speakers, subwoofer, and about 3279 power cords.

When I finished, I had wires all over the place and a migraine the size of Montana. I thought, "Surely there's a better way." So I looked and I looked, but I couldn't find a totally wireless solution. I did, however, locate some products that let me reduce the wires tangling up my life.

Connect the wireless transmitter of the **Sharp Aquos LC-15LIU-S** (\$1399, [www.sharppusa.com](http://www.sharppusa.com)) to your cable box and DVD player, and you can haul this battery-powered, 15-inch LCD TV around your house and watch live TV or movies almost anywhere. It's a neat idea; unfortunately, positioning the set more than about 20

feet from the transmitter caused the picture to freeze up or drop frames. (Sharp says that the maximum range is 50 feet; your mileage may vary.) I also noticed a time lag when changing channels.

With the Pioneer **XW HT-1**

HT-1 sounds great, but the 6-foot power cord limits where you can put the dang thing.

Even better, Xitel's **Sound-around** (\$100, [www.xitel.com](http://www.xitel.com)) employs complex algorithms to deliver an amazingly rich sonic experience for existing

As for power cords? The only wireless solution is 'God and lightning bolts.'



wireless speaker (\$250, [www.pioneerelectronics.com](http://www.pioneerelectronics.com)), you can easily turn your living room into a surround-sound theater without snaking cable across your carpet. Connect the transmitter to the red-and-white RCA jacks of a TV, DVD player, or A/V receiver; then plug the dual rear-speaker unit into the wall. The XW

two-speaker systems. The box is the size of a paperback novel and takes 10 seconds to set up: Just plug your DVD player or game console into the Soundaround and then connect it to your receiver. If you were thinking of investing in a five-speaker home system, Soundaround can help you save cash and avoid the

hassle of running more wires.

The **Sonos Digital Music System** (\$1499 for Bundle II with two pairs of speakers, [www.sonos.com](http://www.sonos.com)) is a cool way to move music around your house. Connect Sonos's ZonePlayer to an ethernet port on your Wi-Fi router, and you can stream MP3 files from your computer's hard disk to Sonos's wired stand-alone speakers. You can put a ZonePlayer in each room in your house (you get two ZonePlayers to start) and beam different songs to each at the same time. Or you can plug a stereo receiver into a ZonePlayer's RCA jacks and wirelessly pipe that music (or sound) to a ZonePlayer located in another room. The speakers sound great, and setup is easy as pie (though \$1500 is a lot to spend to avoid a rat's nest).

More help is on the way. Next year we'll start to see devices using UltraWideBand (UWB) technology—which offers far more bandwidth than Bluetooth or RF—to replace cables for printers and other PC peripherals, says Kurt Scherf, vice president of Dallas research firm Parks Associates. We may also see devices using the emerging 802.11n wireless standard to replace cables for streaming high-definition video signals. (For info on so-called Pre-N Wi-Fi extender products, see the April *News and Trends* article "Stretching Wi-Fi" at [find.pcworld.com/47688](http://find.pcworld.com/47688).)

As for that quagmire of power cords? The only wireless technology in sight is "God and lightning bolts," jokes Scherf. Let us pray. ■

*Contributing Editor Dan Tynan is at the end of his rope.*



# Silent Sophistication & Stylish Sensation

**XC Cube Mini**



**Actual Width 7.75"**  
**(7.75" x 4.25" x 12.75")**

**Don't be fooled by the compact  
form of the XC Cube Mini  
Small in size, BIG in features**

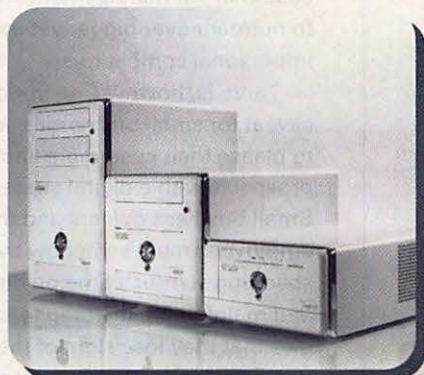
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# When SMALL IS BIG

The right mix of digital products gives small businesses equal footing in today's world



**It** is no secret that digital technologies offer small businesses the chance to compete against much larger companies. For example, the Internet and the World Wide Web have given small businesses the opportunity to reach customers both nationally and internationally—without massive marketing and advertising campaigns. And with all the great Web design tools at their disposal, small businesses can appear every bit as “big” and professional as any other company showcasing its products and services on the Web.

Perhaps the most significant benefit that small businesses get from digital technologies is the ability to deliver superb customer service. In fact, some small companies have harnessed technologies like digital imaging, customer service tools, and customer list management solutions to outmaneuver bigger yet more impersonal competitors.

There is, however, an important caveat for small businesses seeking to please their customers and prospects with a digital strategy: Small business owners and their employees must somehow avoid spending so much time on devising and maintaining their digital strategies that they lose sight of their core business focus. That is, they must always remember that technology is a means to an end—and the end game is delighting the customer with superior service.

## QUICK TIPS

To keep your focus more on your business and less on the digital technologies and services that can help drive it, consider the following tips and suggestions:

■ When buying digital products, look for those that won't overtax you and your staff with excessive ongoing maintenance and support. Securing a favorable warranty or support plan can minimize the risk here.

■ Before purchasing any new products, make certain they are standards-based, enabling you to integrate them into your current environment with plug-and-play ease.

■ And the simplest tip is also the most sensible: Buy quality, proven products from reputable dealers.

## Better photo imaging, better customer service

Great customer service has always given small businesses their competitive edge. To succeed, small companies must assess the needs of their customers and provide them with unique solutions. Having the right digital imaging technology can greatly enhance their efforts.

With the right digital products, insurance agents can more efficiently process claims. Real estate agents can enhance the selling process for prospects. And dental professionals can build their clientele by helping patients see their progress. In fact, in

today's competitive marketplace, having the right photo imaging products can mean the difference between small businesses that succeed—and those that fall behind.

Unfortunately, staying on top of advances in photo imaging has become a real challenge. From cameras to scanners, printers to projectors, the number of photo imaging products has soared in recent years, driving more competitive prices. Strapped for time, business owners have been hard-pressed to sort through the sea of brands, products, and innovations—and they've sought trustworthy help.

That's why Polaroid created Polaroid2go—a new online source for thousands of digital and instant photo imaging products from Polaroid and other leading brands. Building on more than 50 years of experience, the experts at Polaroid have handpicked top-brand cameras, scanners, printers, monitors, and more—specifically for small business needs. Now small business owners can find everything they need in one place. They'll even get access to a Polaroid2go expert who can help them design customized solutions.

In short, Polaroid2go is committed to serving small businesses—so they can focus on serving their customers.



Visit [www.polaroid2go.com](http://www.polaroid2go.com) today and see what they can do for your business.





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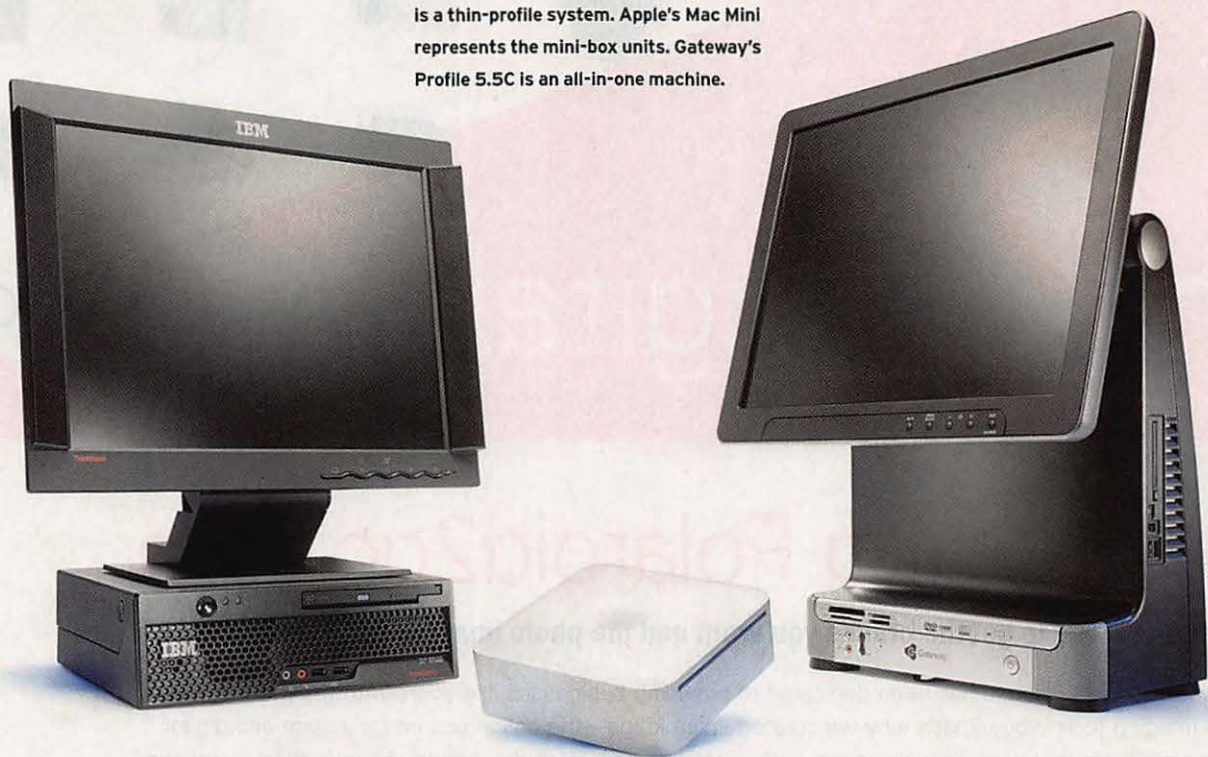


# TOP 100

EDITED BY THE REVIEWS STAFF

## SPOTLIGHT: SMALL PCs

WE TESTED SMALL PCs in three basic shapes. From left, IBM's ThinkCentre A50 is a thin-profile system. Apple's Mac Mini represents the mini-box units. Gateway's Profile 5.5C is an all-in-one machine.



## Small Is Beautiful

PC World tests ten space-saving PCs to see if they measure up to users' needs.

TIRED OF BANGING your knees on the monster tower lurking under your desk? Thinking about adding a second computer at your workstation, but put off by the bulk and noise of two systems? Contrary to conventional thinking, a PC doesn't have to be big or noisy, as we found when we looked at ten small-footprint units. Modestly priced, moderately powerful,

and often stylishly designed, these machines can be a great choice wherever space is at a premium—from the shrinking cubicles in corporate offices to the family living room to the kitchen counter.

The small PCs we saw fall into three categories: mini-boxes, thin-profile units, and all-in-ones. The last two categories have been around for years, mainly in the

corporate world, but mini-boxes are relatively new—a format made viable as computer components got smaller and more powerful. Though a number of manufacturers now sell such toaster-size models, Shuttle Computer deserves credit for defining the category. Nevertheless, Apple's Mac Mini—a capable computer stuffed into a square case smaller than a lunch



### 133 NOTEBOOKS

The HP Compaq Nx9600 debuts among desktop replacement units, and the WinBook W364 pops up in the all-purpose notebooks section.

### 135 MULTIFUNCTION PRINTERS

The new HP OfficeJet 7210 All-In-One and Canon Pixma MP760 lead the chart, which includes both office-oriented and photocentric devices.

### 137 DIGITAL CAMERAS

Our Top 10 point-and-shoot digital cameras include four new entrants this month, with the Nikon Coolpix 5600 topping the chart.

### 139 MORE REVIEWS

DVD drives, audio players, and motherboards headline our recap of products that made the *Top 100* charts in previous months.



137

box—is getting most of the attention now.

All of the leading names in business computing—Dell, Gateway, HP, and IBM—make thin-profile models that sit flat on a desk or, when put on their edges, look like exceptionally narrow towers. They differ from mini-box systems only in the layout of their components. As thin towers, any of them can look fairly elegant alongside a slim display. If even that much of a footprint on your desk is too much, consider an all-in-one configuration: basically a computer bolted to the back of an LCD monitor for maximum space efficiency. Add a wireless keyboard and mouse to one of these systems, and you can reduce your cable clutter to almost nil.

What's not to like? Well, small PCs share some of the same shortcomings as notebook PCs: limited expandability and lower performance than full-size desktops offer. Computer users who love to tinker with and upgrade their systems will find these small units unappealing, as will power users who want top-end CPUs and graphics, plus the ability to install multi-

ple optical and hard drives. In our speed tests, the average WorldBench 5 score for the small systems we appraised was 83—a far cry from the 110 and higher marks we've recorded for the fastest power models in our *Top 15 Desktop PCs* chart.

Small systems will suit users who don't upgrade much—just memory, the hard

drive, or (if the unit has a PCI, AGP, or PCI Express slot) graphics, say. And small units are fine for people who want to buy a machine, set it in place, and never open the case (still the majority of PC users).

If you're trying to keep clutter to a minimum, then a small system fits the bill.

With a small PC, your best expansion option is via USB ports; most such systems have at least four ports for external hard drives and other peripherals. But

PC makers have solved this problem in a variety of ways, some obvious and others quite subtle. For instance, one of our all-in-one units, from UK maker Pelham Sloane, uses a Pentium M notebook CPU for cooler operations. Another solution—getting rid of the on-board power supply and using an AC “brick” adapter instead—removes a major source of heat and noise from the case but adds to the annoying litter of bricks already strewn

under your desk. A more complex technique involves carefully arranging internal components, segmenting the interior of the case into discrete airflow zones, and strategically situating fans and vents. The Shuttle XPC i8600b we tested provides the best example of how these techniques can reduce heat and noise in a small system. The machine's dual 3.5-inch internal drive

### HOT STUFF

PERHAPS THE BIGGEST challenge for small PCs isn't component size, but heat. Processors, hard disks, power supplies, and other PC components generate heat, and system makers have learned that just cramming standard components into a smaller case tends to create too hot a product.

PC makers have solved this problem in a variety of ways, some obvious and others quite subtle. For instance, one of our all-in-one units, from UK maker Pelham Sloane, uses a Pentium M notebook CPU for cooler operations. Another solution—getting rid of the on-board power supply and using an AC “brick” adapter instead—removes a major source of heat and noise from the case but adds to the annoying litter of bricks already strewn

**SHUTTLE'S XPC LINE** is the best known of the mini-boxes. Though small, the XPC i8600b offers just about every option a full-size PC does, including front and rear USB and FireWire ports and a free PCI Express slot.



machine's dual 3.5-inch internal drive ►



bays occupy a cage at the very top of the system. You can access the cage—which relies on its own airflow source and uses rubber isolators to shield the drives from vibrations—without tools. The power supply sits below the cage and vents through the back panel of the case, while the motherboard and processor cool off via a set of vents recessed into the front edges of the case. As a result, the Shuttle can rely on quiet, software-controlled, low-rotation fans for air circulation.

The ten small systems we reviewed for this Spotlight roundup include two mini-boxes: Apple's Mac Mini and Shuttle's XPC i8600b. The thin-profile PCs—units that can sit flat or stand on edge—are Dell's OptiPlex SX280, Gateway's E-4300 4-Bay SB, HP Compaq's Dc7100 Ultra-Slim Desktop, and IBM's ThinkCentre A50. Gateway's Profile 5.5C, MPC's ClientPro 414 All-in-One, Pelham Sloane's PS1500M, and Sony's VAIO VGC-V520G TV-PC make up our all-in-one group. The

Dell and HP thin-profile machines can mount behind their monitors to form all-in-one PCs. For more details on all of these systems, see our online reviews at [find.pcworld.com/47684](http://find.pcworld.com/47684).

### MIGHTY MINI-BOXES

SHUTTLE PIONEERED THE toaster-size (or shoe box-size) PC design, and the XPC i8600b shows the company's mastery of the art of packing a lot into a small space. Though the case is only 8 inches

## TOP 100

## TEST Center

# Space-Saving PCs Big on Value

SHUTTLE, DELL, AND GATEWAY earn Best Buys, proving that more than one shape can meet your needs for a small computer.

	MINI-BOX SYSTEM	Features and specifications <sup>1</sup>	Performance	Bottom line	
1	<b>Shuttle Computer XPC i8600b</b> <b>Best Buy</b> \$1611 (★★★★★ NEW) <a href="http://find.pcworld.com/47600">find.pcworld.com/47600</a>	<ul style="list-style-type: none"><li>• 3-GHz Pentium 4 530</li><li>• 320GB drive space</li><li>• DVD-ROM/CD-RW combo drive</li></ul>	<ul style="list-style-type: none"><li>• 17-inch Shuttle LCD monitor</li><li>• Integrated Intel 915G graphics</li><li>• Eight-in-one media card reader</li></ul>	<ul style="list-style-type: none"><li>• WorldBench 5 score: 82</li><li>• Graphics: Good</li><li>• Design: Very Good</li></ul>	This small, elegant system—packed with almost everything a larger PC offers—provides strong value and performance.
2	<b>Apple Mac Mini</b> \$574 (★★★★★ NEW) <a href="http://find.pcworld.com/47592">find.pcworld.com/47592</a>	<ul style="list-style-type: none"><li>• 1.25-GHz PowerPC G4</li><li>• 40GB drive space</li><li>• DVD-ROM/CD-RW combo drive</li></ul>	<ul style="list-style-type: none"><li>• Monitor not included</li><li>• Integrated ATI Radeon 9200 graphics</li><li>• Speaker built into case</li></ul>	<ul style="list-style-type: none"><li>• WorldBench 5 score: n/a</li><li>• Graphics: n/a</li><li>• Design: Very Good</li></ul>	The attractive Mac Mini is well equipped, quiet, and easy to set up. We can imagine it working where other PCs won't go.
	THIN-PROFILE SYSTEM				
1	<b>Dell OptiPlex SX280</b> <b>Best Buy</b> \$1403 (★★★★★ NEW) <a href="http://find.pcworld.com/47596">find.pcworld.com/47596</a>	<ul style="list-style-type: none"><li>• 3.4-GHz Pentium 4 550</li><li>• 80GB drive space</li><li>• CD-RW drive</li></ul>	<ul style="list-style-type: none"><li>• 17-inch Dell LCD monitor</li><li>• Integrated Intel 915G graphics</li><li>• Speakers built into monitor</li></ul>	<ul style="list-style-type: none"><li>• WorldBench 5 score: 89</li><li>• Graphics: Very Good</li><li>• Design: Very Good</li></ul>	The strongest performer among our thin systems—nicely designed, versatile, and reasonably priced.
2	<b>IBM ThinkCentre A50</b> \$1295 (★★★★★ NEW) <a href="http://find.pcworld.com/47599">find.pcworld.com/47599</a>	<ul style="list-style-type: none"><li>• 3-GHz Pentium 4 530</li><li>• 40GB drive space</li><li>• DVD-ROM/CD-RW combo drive</li></ul>	<ul style="list-style-type: none"><li>• 17-inch IBM LCD monitor</li><li>• Integrated Intel Extreme Graphics 2</li><li>• Speakers built into monitor</li></ul>	<ul style="list-style-type: none"><li>• WorldBench 5 score: 78</li><li>• Graphics: Fair</li><li>• Design: Very Good</li></ul>	This easy-to-use system is the least-expensive Windows machine in our roundup. It's also moderately expandable.
3	<b>Gateway E-4300 4-Bay SB</b> \$1408 (★★★★★ NEW) <a href="http://find.pcworld.com/47597">find.pcworld.com/47597</a>	<ul style="list-style-type: none"><li>• 3.2-GHz Pentium 4 540</li><li>• 160GB drive space</li><li>• DVD-ROM/CD-RW combo drive</li></ul>	<ul style="list-style-type: none"><li>• 17-inch Gateway LCD monitor</li><li>• Integrated Intel 915G graphics</li><li>• Gateway 2.0 speakers</li></ul>	<ul style="list-style-type: none"><li>• WorldBench 5 score: 86</li><li>• Graphics: Good</li><li>• Design: Good</li></ul>	Gateway's corporate model is the most expandable small PC we tested, with an open 3.25-inch drive bay and PCI slot.
4	<b>HP Compaq Dc7100 Ultra-Slim Desktop</b> \$1502 (★★★★★ NEW) <a href="http://find.pcworld.com/47598">find.pcworld.com/47598</a>	<ul style="list-style-type: none"><li>• 3.2-GHz Pentium 4 540</li><li>• 80GB drive space</li><li>• DVD-ROM/CD-RW combo drive</li></ul>	<ul style="list-style-type: none"><li>• 17-inch HP LCD monitor</li><li>• Integrated Intel 915G graphics</li><li>• Speakers built into case</li></ul>	<ul style="list-style-type: none"><li>• WorldBench 5 score: 86</li><li>• Graphics: Good</li><li>• Design: Very Good</li></ul>	At 3 inches high, this HP is the thinnest thin-profile PC here, yet it has plenty of USB 2.0 ports plus a free PCI card slot.
	ALL-IN-ONE SYSTEM				
1	<b>Gateway Profile 5.5C</b> <b>Best Buy</b> \$1885 (★★★★★ NEW) <a href="http://find.pcworld.com/47602">find.pcworld.com/47602</a>	<ul style="list-style-type: none"><li>• 3.2-GHz Pentium 4 540</li><li>• 160GB drive space</li><li>• DVD±RW drive</li></ul>	<ul style="list-style-type: none"><li>• 17-inch Gateway LCD monitor</li><li>• Integrated ATI Radeon X300 LE graphics</li><li>• Speakers built into monitor</li></ul>	<ul style="list-style-type: none"><li>• WorldBench 5 score: 84</li><li>• Graphics: Very Good</li><li>• Design: Very Good</li></ul>	Gateway's innovative design offers stability and makes the ports and drive in this all-in-one easy to reach.
2	<b>Sony VAIO VGC-V520G TV-PC</b> \$2699 (★★★★★ NEW) <a href="http://find.pcworld.com/47605">find.pcworld.com/47605</a>	<ul style="list-style-type: none"><li>• 3.2-GHz Pentium 4 540</li><li>• 250GB drive space</li><li>• DVD+R dual layer/DVD±RW drive</li></ul>	<ul style="list-style-type: none"><li>• 20-inch Sony WXGA LCD monitor</li><li>• 128MB NVIDIA GeForce FX Go 5700</li><li>• Speakers built into monitor</li></ul>	<ul style="list-style-type: none"><li>• WorldBench 5 score: 90</li><li>• Graphics: Very Good</li><li>• Design: Very Good</li></ul>	Top performance in a small system, along with generous drive space and a 20-inch monitor, lead to high style—and cost.
3	<b>MPC ClientPro 414 All-In-One</b> \$1799 (★★★★★ Mar 05) <a href="http://find.pcworld.com/45554">find.pcworld.com/45554</a>	<ul style="list-style-type: none"><li>• 3-GHz Pentium 4 530</li><li>• 80GB drive space</li><li>• DVD-ROM/CD-RW combo drive</li></ul>	<ul style="list-style-type: none"><li>• 17-inch LCD monitor</li><li>• 64MB ATI Radeon X600 graphics</li><li>• Speakers built into monitor</li></ul>	<ul style="list-style-type: none"><li>• WorldBench 5 score: 79</li><li>• Graphics: Outstanding</li><li>• Design: Good</li></ul>	Good-looking machine shows crisp text and makes a fine impression but doesn't quite match the leaders.
4	<b>Pelham Sloane PS1500M</b> \$2548 (★★★★★ NEW) <a href="http://find.pcworld.com/47604">find.pcworld.com/47604</a>	<ul style="list-style-type: none"><li>• 1.7-GHz Pentium M 735</li><li>• 80GB drive space</li><li>• DVD±RW drive</li></ul>	<ul style="list-style-type: none"><li>• 15-inch Pelham LCD monitor</li><li>• Integrated Intel 855GM graphics</li><li>• Speakers built into monitor</li></ul>	<ul style="list-style-type: none"><li>• WorldBench 5 score: 75</li><li>• Graphics: Poor</li><li>• Design: Good</li></ul>	Niche system with touch screen would fit well in a kitchen or in other small locations, but suffers from a high price.

**FOOTNOTE:** <sup>1</sup> Features listings are not exhaustive; hard-drive capacity may represent multiple drives. **CHART NOTES:** n/a = Not applicable. WorldBench 5 does not run on the Macintosh OS. Street prices are as of 3/15/05. See [find.pcworld.com/10860](http://find.pcworld.com/10860) for details on PC World's Star Ratings. Price is taken into consideration for Best Buy honors only. All tests designed and conducted by the PC World Test Center. All rights reserved.



high and just under 15 inches long, it contains a sample of pretty much everything a full-size PC offers, including a PCI Express slot, two hard-drive bays, and a plethora of expansion ports. It's also the only system in this roundup with support for surround-sound audio.

In spite of its small size, the Shuttle can pack enough horsepower to attract gamers: The box is easy to carry to LAN parties, and Shuttle's XP17 LCD, which came with our review unit, has a convenient carrying handle and a padded case.

Cute isn't a word we use often to describe personal computers, but it certainly applies to Apple's Mac Mini, the latest and least of the mini-boxes. (Smaller computers exist, but they target niche uses.) Even in the context of Apple's previous design achievements, the Mini is visually striking in its lack of features. A silver-and-white box measuring just 6.5 inches square (about the size of a CD case) and barely 2 inches high, the Mini includes only an optical disc slot on what passes for a front panel. The power button is on the back (a design flaw, we believe), along with video, USB, and FireWire ports.

Because our benchmark test suite focuses on Windows-based PCs, we cannot measure the Mini's performance against that of the other small models we reviewed. But sidestepping the issue of whether OS X or Windows XP is the better operating system, we enjoyed using the Mini: It was easy to set up, came with a nice software starter bundle that included video editing tools, and ran almost silently—the cooling fan produced just the barest whisper. It's easy to picture a Mini going places a typical desktop PC won't: into the kitchen, the family room, or the ad hoc home office that pops up on the dining-room table every evening.

Though marketed to compete against cheap PCs, the \$500 price for the most basic configuration doesn't include a keyboard, mouse, or monitor. (The slightly upgraded model we tested costs \$574.) But you can use any USB mouse and keyboard, and any DVI or VGA monitor. Apple offers a USB keyboard and mouse set for \$58; the keyboard is fine, but most

**THE DELL OPTIPLEX SX280 is a versatile thin-profile PC that measures just 10 by 10.2 by 3.5 inches. Set the machine on edge and it can snuggle up to your display. Dell's 1703FPSX monitor includes a stand for mounting the PC—turning it into an even smaller all-in-one system.**



Mac users end up replacing the mouse. You'll also need a USB hub to expand the Mini, as it has only two USB 2.0 ports and the keyboard and mouse use one of those.

#### **YOUR CHOICE: FLAT OR THIN**

THE THIN-PROFILE systems we looked at from Dell, Gateway, HP, and IBM are marketed primarily as low-cost business machines that corporations can buy and

## Thin-profile systems can sit flat or stand on edge to lessen their overall footprints.

deploy in large numbers. But the business advantages they offer also suit home-office users, especially those with modest expansion demands. If you tend to buy a system and use it without significant changes for a couple of years, you'll find that this group combines reasonable prices, good performance, and relatively easy maintenance. You'll also get the option of positioning the system horizontally or vertically, or mounting it under a desk or swinging out from a wall.

Thin-profile models are proliferating as system makers embrace the slim-PC concept. Some vendors now offer several sizes of small, thin systems. When tipped on edge, the systems we reviewed ranged



from 10 to 13 inches tall, from 10 to 17 inches deep, and from 3 to 4 inches wide.

The Dell OptiPlex SX280 packs a lot into its small case, fitting a 3.4-GHz Pentium 4 and 512MB of RAM into a box that's just over 10 inches long and 3.5 inches wide. But this leaves no room inside for expansion: The system lacks open PCI slots. The compact case can mount behind Dell's LCD monitor to transform the components into an all-in-one system with an even smaller footprint on your desk. We were impressed by the OptiPlex's design and versatility, and it was also the fastest performer in its class.

The IBM ThinkCentre A50, in its ultrasmall case, is a well-designed no-frills PC that accommodates a modest amount of expansion—it includes a single PCI slot—in a confined space, with an easy-to-open case that requires no tools. The A50 uses the same optical drive model that IBM notebooks do, but you have to open the case to remove the drive.

Gateway's E-4300 4-Bay SB nicely balances small size and expandability: Placed horizontally, the case is merely 4 inches tall, yet this model is the only system we looked at that contains a floppy drive and an open 3.25-inch drive bay. You also get two PCI slots (although one is blocked by the power supply) and a single PCI Express slot; however, you can't use ▶



standard-size PCI cards in them—only the smaller, low-profile PCI cards will fit.

At just 3 inches high (or wide, when sitting on its side), the HP Compaq Dc7100 Ultra-Slim Desktop is the thinnest system in this group. But it still sets aside some room for expansion, offering plenty of USB ports (two on the front and six on the back), plus space for a single PCI card inside the case. The PC uses the same hot-swappable MultiBay drives found in Compaq notebooks. If you buy an optional stand (\$99) for the HP L1740 17-inch LCD, you can mount the Dc7100 behind the monitor, creating an all-in-one unit. The monitor also has a convenient handle.

### ALL TOGETHER NOW

ALL-IN-ONE SYSTEMS—LCD monitors equipped with built-in PCs—have been around for years, but typically they've been relegated to niche roles (such as in point-of-sale terminals, kiosks, and other small spaces) because they're difficult to upgrade and often lack power. That could change, however, as PCs migrate into kitchens, living rooms, and other places where a separate box is undesirable. And thanks to faster, smaller computer components, even an all-in-one is powerful enough for most computing applications. You may not be fond of slotting in your CDs vertically, but in our testing we had no difficulty doing so.

All-in-one systems cost more than the other small PCs we reviewed, because their design is more complex. They offer no expansion options beyond USB and FireWire ports, but the models we examined are more varied than their predecessors. For example, one unit has a touch screen, and another boasts a built-in TV.

Suitable for office or home, the Gateway Profile 5.5C has an innovative all-in-one design, with a wedge-shaped case. The Profile is the only machine we tested

that builds the PC into the foot, not the back, of the monitor. As a result, the optical drives and the media reader are easier to reach, and the system is more stable because all of the weight is in the base. None of the components in the case are user-accessible or upgradable, however; and since the stand doesn't swivel, you can't angle the screen to the left or right without rotating the whole thing. You get plenty of USB and FireWire ports for connecting external devices, though.



**SONY'S VAIO VGC-V520G TV-PC is an all-in-one living room system with built-in TV tuner, remote control, and dual-layer rewritable DVD drive behind a good-looking, 20-inch LCD screen. It was the fastest unit in this group.**

The Sony VAIO VGC-V520G TV-PC is a pure entertainment buy. It's designed to serve as a living-room PC, with a built-in TV tuner, a remote control, and a dual-layer rewritable DVD drive behind the 20-inch wide-aspect LCD screen. This media machine doesn't use Windows Media Center Edition, but rather Sony's revised version, which improves on Microsoft's in a couple of ways. The system has no HDTV support, however. Because the screen runs at a resolution of 1024 by 768, icons and text look overly large; as such, the systems is best suited to the living room. A 17-inch model, which might fit better in your kitchen, is also available.

This VAIO was both the fastest and the most expensive small PC in our roundup.

The sleek, silver MPC ClientPro 414 is another business all-in-one unit built around an attractive 17-inch LCD. The monitor looked equally good when displaying text or DVD movies; but like most all-in-ones, the ClientPro has no room for internal expansion, though six USB ports and a FireWire port sit on the underside of the case. We found that the speakers failed to play back high-quality movie sound adequately, but they are fine for playing music CDs.

UK manufacturer Pelham Sloane markets its PS1500M primarily to integrators—outfits that then customize the unit for home automation (heating, cooling, security, and so on), mobile hospital carts, kiosks, and other uses; but the system is also available from Home Depot. The computer, with a Pentium M laptop processor, can sit on a desk, mount onto a wall, or attach to an optional arm.

The machine remains a niche product, however, unsuitable for general computing because of its relatively high cost and comparatively low performance. Its steep price is attributable in part to its touch-screen display—a feature that makes it suitable for specialized applications.

### BREAK THE TOWER HABIT

SMALL PCS WON'T soon kill off the ubiquitous tower machine, thanks to their lack of power and upgradability, but they make sense for many computer users. They have enough speed, reliability, and features to handle both home and business use. Because they don't take a brute-force approach to cooling, they produce significantly less noise than many towers. And if you already have a tower, a small box can be ideal as a second system. ■

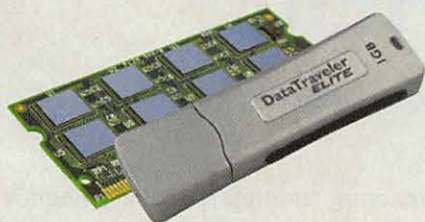
—Dan Sommer, Richard Baguley, and Matt McKenzie





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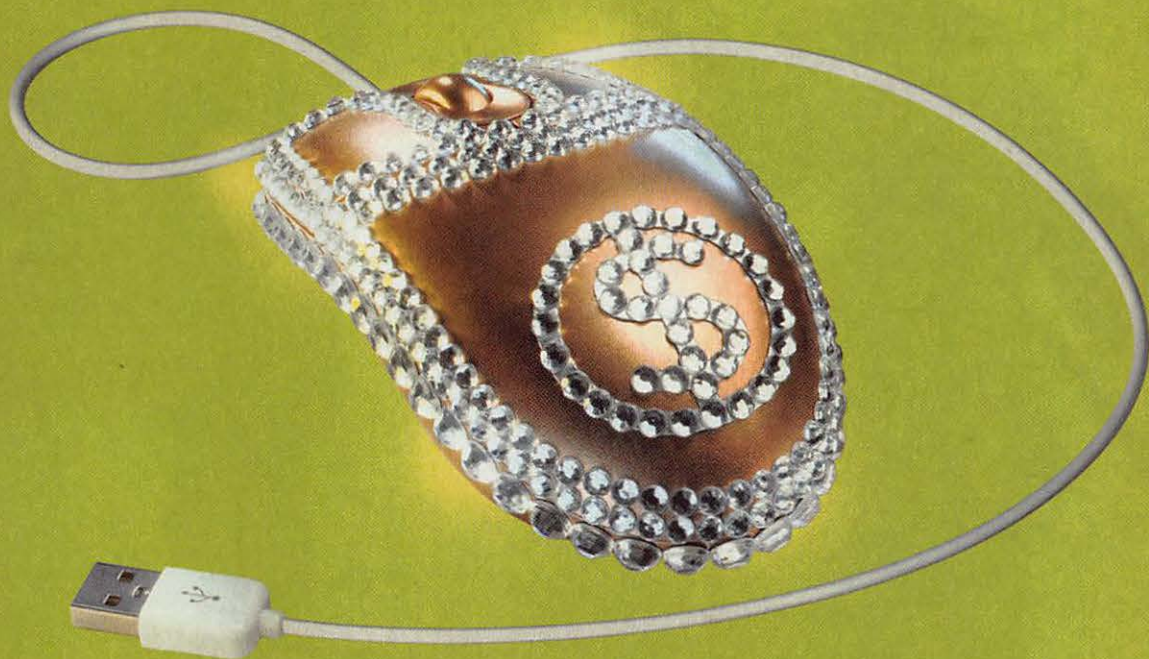
The solution? A 1-GB Kingston® memory upgrade and a 1-GB DataTraveler® Elite USB Flash drive. This powerful combination gives road warriors the best performance from their notebooks while the DataTraveler Elite protects stored data from prying eyes. For details on all of our products, visit **kingston.com**.



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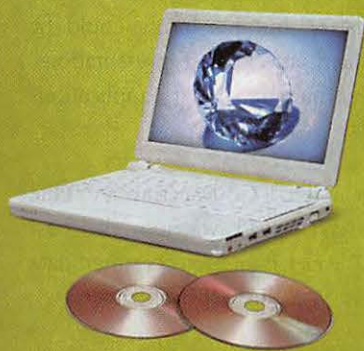
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# IN THE CHARTS

EDITED BY THE REVIEWS STAFF

## Film and Slide Scanning, Now Showing at an MFP Near You

TWO INKJET multifunction printers we tested this month have their sights set on more than just digital photography: They are taking aim at the dusty shoe boxes full of old negatives and slides tucked away in your closet or attic.

The Canon Pixma MP760 and the Epson Stylus Photo RX620 are the first inkjet MFPs we've tested that can scan film, something we'd seen only dedicated scanners do in the past. Both models come with adapters that hold film negatives or slides, and both have a light in the lid for capturing the images.

Not all of these MFPs target photographers. Though the HP OfficeJet 7210 All-In-One and the Brother MFC-5840CN don't scan transparencies, each has an ethernet port and an automatic document feeder, making them well suited for the workplace.

Both of our Best Buys, the OfficeJet 7210 and the Pixma MP760, deliver a level of versatility we haven't seen in previous MFPs. The 7210 prints high-quality glossy photos, and the slide-scanning MP760 prints sharp text quickly and makes accurate copies. Plus, the MP760 has a duplexer for making two-sided prints and

documents. The Canon Pixma MP780 is the only other model we tested that offers a duplexer as a standard item.

These feature-rich models have one drawback, however: Their prices are higher than those of our previous batch. The last time we tested inkjet



**THE VERSATILE CANON Pixma MP760 scans transparencies like slides and negatives.**

MFPs, the best-performing device cost \$200. This time around, each Best Buy costs \$300, and the average price of all chart-makers is over \$220.

### NOTEBOOKS

A NEW DESKTOP replacement laptop and a new all-purpose model make their debut on the chart this month.

The HP Compaq Nx9600 is a 17-inch wide-screen notebook equipped with lots of goodies for gadget junkies. In addition to a six-in-one media card reader, the Nx9600 fea-

tures a next-generation ExpressCard slot, the PC-Card slot replacement that will accept new, fast adapters for everything from flash storage to high-speed networking (see [find.pcworld.com/47726](http://find.pcworld.com/47726)).

The Nx9600 also provides a small internal bay for HP's SD-based 128MB USB Digital Drive, a \$25 extra. Like many HP laptops, the Nx9600 includes a proprietary side connection for fitting into HP's \$250 Xb2000 expansion base—a desktop stand with a speaker and a hard-drive bay. Even sans expansion base, the Nx9600 offers excellent sound for a laptop, making it a well-rounded desktop replacement on its own. A very short battery life of 1 hour, 20 minutes decreases its utility outside the office, however. It arrives on the chart at number four.

The WinBook W364, a large but fairly lightweight (6.4-pound) black-and-silver unit, slips into fifth place on the all-purpose list. The W364 is well equipped for an \$1899 laptop, including a rewritable DVD drive and a three-in-one card reader. Digital audio fans will like the S/PDIF port, and the keyboard is extremely firm. Our only beef is that the lid latch is a little difficult to slide.

### INSIDE INFO

#### Sharp Shooters

PC WORLD tests Nikon's highly anticipated Coolpix 5600 and 7900 digital cameras. With its 7.1-megapixel spec, the 7900 looks wonderful on paper, but the 5.1-megapixel 5600 delivered the most accurate color and exposure on the chart.

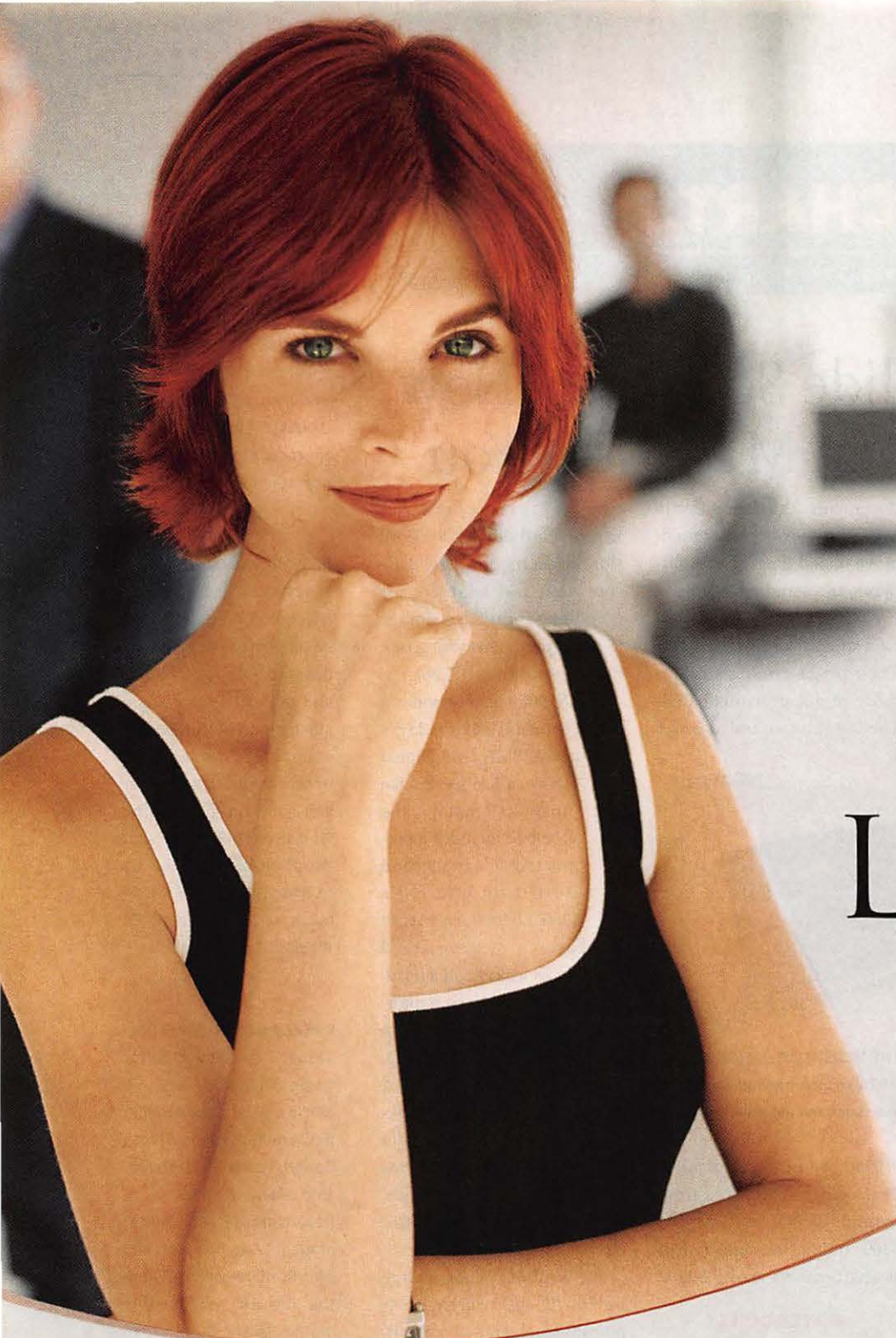
#### More on the Web

PC WORLD uses its industry-standard benchmarking application, WorldBench 5, to evaluate the performance of desktop PCs, notebooks, and tablet PCs. We run a number of real-world applications performing real-world computing tasks. For more information on the WorldBench 5 tool, visit [find.pcworld.com/44262](http://find.pcworld.com/44262). Go to [find.pcworld.com/10860](http://find.pcworld.com/10860) for more details about PC World's Star Ratings.

#### The Top 100 Team

FREELANCE WRITER Paul Jasper, Contributing Editor Carla Thornton, and PC World editors Laura Blackwell, Eric Butterfield, Tracey Capen, Kalpana Ettenson, Tom Mainelli, Melissa J. Perenson, Narasu Rebbapragada, Dan Sommer, and Alan Stafford contributed to the Top 100 section this month. Ulrike Diehlmann, Julio Giannobile, Elliott Kirschling, Jeff Kuta, Tony K. Leung, Thomas Luong, and William Wang of the PC World Test Center tested all of the products reviewed in this section, with logistical support provided by Julian Weatherby.





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## TOP 15 NOTEBOOK PCs

★ Products in this chart are ordered by star rating. Visit [find.pcworld.com/47664](http://find.pcworld.com/47664) for reviews of all products tested this month and ranked in this chart.

DESKTOP REPLACEMENT		Features and specifications <sup>1</sup>		Performance	Bottom line
1	<b>Dell Inspiron 6000</b> \$2376 (★★★★☆ May 05) <a href="http://find.pcworld.com/47230">find.pcworld.com/47230</a>	• 2-GHz Pentium M 760 • 15.4-inch wide screen • 8.4 pounds	• DVD±RW drive • Touchpad pointing device • 802.11a/g, SD Card slot, WordPerfect Office 12	• WorldBench 5 score: 89 • Overall design: Good • Tested battery life: 5:07	Desktop replacement offers an optional high native resolution of 1900 by 1200, plus great speakers.
2	<b>IBM ThinkPad T42</b> <b>Best Buy</b> \$1899 (★★★★☆ Feb 05) <a href="http://find.pcworld.com/45860">find.pcworld.com/45860</a>	• 1.8-GHz Pentium M 745 • 14.1-inch screen • 6.3 pounds	• DVD-ROM and CD-RW combo drive • Touchpad and eraserhead pointing devices • 802.11g, fingerprint scanner	• WorldBench 5 score: 77 • Overall design: Good • Tested battery life: 5:34	Slide fingerprint reader is a bit finicky. This laptop has an industry-leading electronic manual.
3	<b>Chem USA ChemBook 2037</b> \$1899 (★★★★☆ Mar 05) <a href="http://find.pcworld.com/46170">find.pcworld.com/46170</a>	• 2-GHz Pentium M 755 • 15.4-inch wide screen • 8.7 pounds	• DVD-RW drive • Touchpad pointing device • 802.11g, four-in-one media card reader	• WorldBench 5 score: 89 • Overall design: Good • Tested battery life: 4:13	Well-designed model has ports on the front and features an 800-by-600-pixel VGA camera in its lid.
4	<b>HP Compaq Nx9600</b> \$2229 (★★★★☆ NEW) <a href="http://find.pcworld.com/47498">find.pcworld.com/47498</a>	• 3.6-GHz Pentium 4 560 • 17.0-inch wide screen • 12.1 pounds	• DVD+RW drive • Touchpad pointing device • 802.11g, ExpressCard slot, docking station	• WorldBench 5 score: 85 • Overall design: Very Good • Tested battery life: 1:20	Big-screen unit boasts updated PC Card slot, six-in-one media card reader, and USB digital drive slot.
5	<b>Gateway M460X</b> \$2059 (★★★☆☆ May 05) <a href="http://find.pcworld.com/47236">find.pcworld.com/47236</a>	• 2.13-GHz Pentium M 770 • 15.4-inch wide screen • 8.0 pounds	• DVD-RW drive • Touchpad and eraserhead pointing devices • 802.11g, four-in-one media card reader	• WorldBench 5 score: 87 • Overall design: Good • Tested battery life: 3:23	Slim laptop has four USB ports—more than most portables—but its pointing stick is problematic.
ALL-PURPOSE NOTEBOOK					
1	<b>HP Compaq Nc8230</b> \$2149 (★★★★☆ May 05) <a href="http://find.pcworld.com/47228">find.pcworld.com/47228</a>	• 2-GHz Pentium M 760 • 15.4-inch wide screen • 7.3 pounds	• DVD-ROM and CD-RW combo drive • Touchpad and eraserhead pointing devices • 802.11g, Bluetooth, SD Card slot	• WorldBench 5 score: 85 • Overall design: Good • Tested battery life: 5:11	Classy-looking model has a quick-launch presentation button and an optional high-resolution screen.
2	<b>Compaq Presario V2000</b> <b>Best Buy</b> \$1379 (★★★★☆ May 05) <a href="http://find.pcworld.com/47226">find.pcworld.com/47226</a>	• 1.8-GHz Pentium M 745 • 14.1-inch wide screen • 7.0 pounds	• DVD-RW drive • Touchpad pointing device • 802.11g, six-in-one media card reader	• WorldBench 5 score: 75 • Overall design: Good • Tested battery life: 5:48	Sleek, lightweight unit features good sound, a nice keyboard, and an optional BrightView screen.
3	<b>IBM ThinkPad R51</b> \$1549 (★★★★☆ Sept 04) <a href="http://find.pcworld.com/43118">find.pcworld.com/43118</a>	• 1.5-GHz Pentium M 715 • 15.0-inch screen • 7.4 pounds	• DVD-ROM and CD-RW combo drive • Touchpad and eraserhead pointing devices • 802.11g, gigabit ethernet	• WorldBench 5 score: 67 • Overall design: Outstanding • Tested battery life: 3:54	The slim R51 suits users who don't require many fancy extras. Excellent keyboard is nicely laid out.
4	<b>Micro Express CL5620</b> \$1599 (★★★★☆ Mar 05) <a href="http://find.pcworld.com/46172">find.pcworld.com/46172</a>	• 2-GHz Pentium M 755 • 15.0-inch screen • 7.2 pounds	• DVD±RW drive • Touchpad pointing device • 802.11g, SD Card slot	• WorldBench 5 score: 97 • Overall design: Fair • Tested battery life: 3:56	Elegant-looking notebook sports a beautiful high-resolution screen and an ultrafirm keyboard.
5	<b>WinBook W364</b> \$1899 (★★★★☆ NEW) <a href="http://find.pcworld.com/47496">find.pcworld.com/47496</a>	• 2-GHz Pentium M 755 • 15.4-inch wide screen • 7.2 pounds	• DVD±RW drive • Touchpad pointing device • 802.11g, three-in-one media card reader	• WorldBench 5 score: 86 • Overall design: Good • Tested battery life: 2:29	Handsome silver laptop is easy to use and has a convenient memory card reader on the case front.
ULTRAPORTABLE					
1	<b>Dell Latitude X300</b> \$2284 (★★★★☆ Dec 04) <a href="http://find.pcworld.com/44250">find.pcworld.com/44250</a>	• 1.4-GHz Pentium M LV 738 • 12.1-inch screen • 4.0 pounds	• External DVD+RW drive • Touchpad pointing device • 802.11g, SD Card slot, docking station	• WorldBench 5 score: 73 • Overall design: Very Good • Tested battery life: 2:31	Relatively fast Latitude is expandable thanks to the best docking station we've seen in this class.
2	<b>Dell Inspiron 700m</b> <b>Best Buy</b> \$1617 (★★★★☆ Dec 04) <a href="http://find.pcworld.com/44246">find.pcworld.com/44246</a>	• 1.8-GHz Pentium M 745 • 12.1-inch wide screen • 4.8 pounds	• DVD+RW drive • Touchpad pointing device • 802.11g, SD Card slot	• WorldBench 5 score: 80 • Overall design: Good • Tested battery life: 2:45	Strongly built laptop offers Corel WordPerfect Productivity Pack but has a cramped keyboard.
3	<b>IBM ThinkPad X40</b> \$2299 (★★★★☆ Sept 04) <a href="http://find.pcworld.com/43066">find.pcworld.com/43066</a>	• 1.2-GHz LV Pentium M • 12.1-inch screen • 5.6 pounds	• DVD-ROM and CD-RW combo drive <sup>2</sup> • Eraserhead pointing device • 802.11g, Bluetooth, gigabit ethernet	• WorldBench 5 score: 55 • Overall design: Good • Tested battery life: 2:36	Boasts the finest keyboard for its size. Optical drive is USB- or dock-based; SD Card slot is on main unit.
4	<b>Toshiba Portégé M205-S810</b> \$1999 (★★★★☆ Sept 04) <a href="http://find.pcworld.com/43120">find.pcworld.com/43120</a>	• 1.5-GHz Pentium M • 12.1-inch screen • 7.1 pounds	• DVD-ROM and CD-RW combo drive • Touchpad pointing device • 802.11g, SD Card slot	• WorldBench 5 score: 64 • Overall design: Fair • Tested battery life: 3:20	Stylish convertible tablet/notebook handles both jobs adequately and is very responsive to screen taps.
5	<b>WinBook X540</b> \$1599 (★★★★☆ Mar 05) <a href="http://find.pcworld.com/46174">find.pcworld.com/46174</a>	• 2-GHz Pentium M 755 • 12.1-inch screen • 5.5 pounds	• DVD±RW drive • Touchpad pointing device • 802.11g, three-in-one media card reader	• WorldBench 5 score: 83 • Overall design: Good • Tested battery life: 3:03	You can watch DVD movies, home videos, and slide shows without having to turn this lightweight unit on.

**FOOTNOTES:** <sup>1</sup>Features listings are not exhaustive. <sup>2</sup>Optical drive housed in docking station. **CHART NOTES:** Street prices are as of 3/21/05. Weight includes AC adapter, power cord, and optical drive. Optical drives are removable unless otherwise noted. Price is taken into consideration for Best Buy honors only. All tests designed and conducted by the PC World Test Center. All rights reserved. See [find.pcworld.com/10860](http://find.pcworld.com/10860) for details on PC World's Star Ratings.



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# TOP 10 PRINTERS

TOP 100

TEST  
Center

★ Products in this chart are ordered by star rating. Visit [find.pcworld.com/47662](http://find.pcworld.com/47662) for reviews of all products tested this month and ranked in this chart.

MANY OF THE INKJET multifunction printers on this month's chart wear one of two hats: office-oriented or photo-centric. Our two Best Buys, however, wear both hats equally well. The Canon Pixma MP760 can scan both negatives and slide film, and also makes copies quickly. Our other Best Buy, HP's OfficeJet 7210 All-In-One, provides ethernet connectivity as well as an automatic document feeder (ADF), yet it also prints high-quality glossy photos and comes with media card slots.

The Epson Stylus Photo RX620 scans film, produced lovely glossy photos in our

tests, and generated some of the nicest scans we saw. It's the only MFP in this group that prints directly from USB memory keys, too. But the RX620's slow text printing and unattractive plain-paper prints make it a poor choice for office duties.

All the HP and Canon models here had top-notch text printing and copy quality, though HP's PSC 1610 made copies at a very slow 42 seconds per sheet. The PSC 1610 has the lowest price on the chart.

The Lexmark X7170 created the least-impressive scans but was the quickest at printing text, at 7.8 pages per minute.



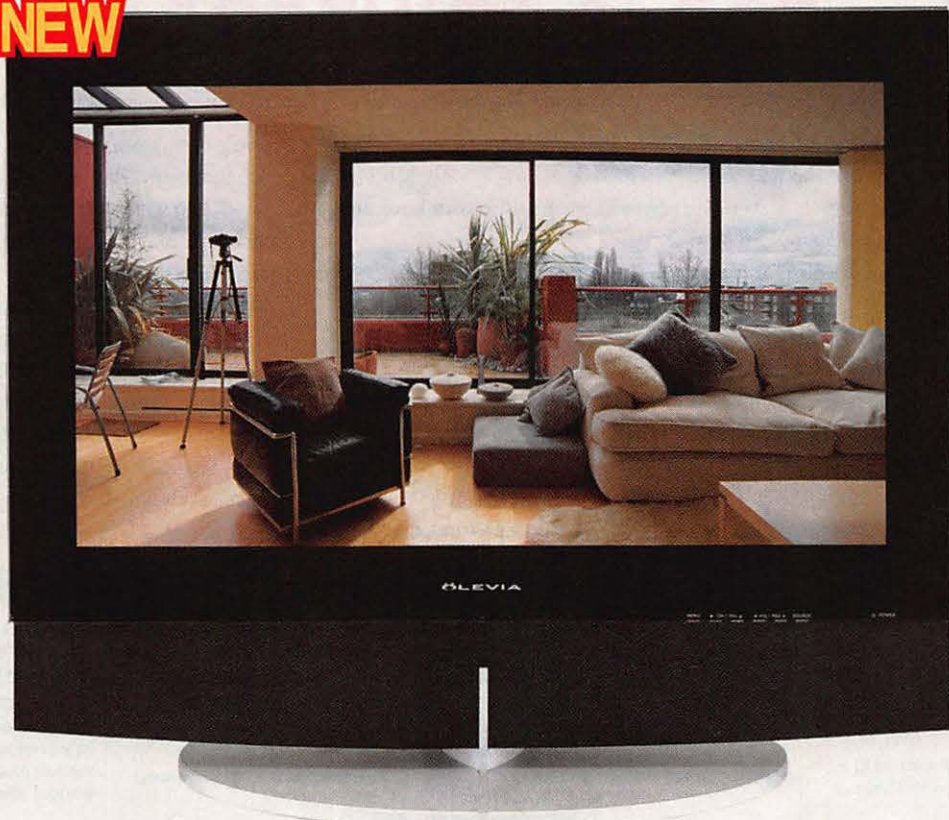
THE VERSATILE HP OfficeJet 7210.

	MULTIFUNCTION PRINTER	Features and specifications		Performance	Bottom line
1	<b>HP OfficeJet 7210 All-In-One</b> <b>Best Buy</b> \$300 (★★★★★ NEW) <a href="http://find.pcworld.com/47608">find.pcworld.com/47608</a>	• Printing: 4800 by 1200 dpi • 8.5-by-24-inch maximum paper size	• Scanning: 2400 by 4800 dpi • Media slots, ethernet port • Built-in fax, ADF	• Text/photo quality: Very Good/Outstanding • Scan/copy quality: Good/Very Good • Print speed (ppm): 6.8 text, 2.2 graphics	Offers networking, high print quality, and good performance, including fast copying and photo printing.
2	<b>Canon Pixma MP760</b> <b>Best Buy</b> \$300 (★★★★★ NEW) <a href="http://find.pcworld.com/47556">find.pcworld.com/47556</a>	• Printing: 4800 by 1200 dpi • Legal maximum paper size • Two-sided printing	• Scanning: 2400 by 4800 dpi • Film scanning, media slots, PictBridge port • 2.5-inch color LCD	• Text/photo quality: Very Good/Outstanding • Scan/copy quality: Good/Very Good • Print speed (ppm): 6.7 text, 2.5 graphics	Good overall speed; fast photo printing and copying, plus film scanning. High print quality; better graphics than most other models produced.
3	<b>Canon Pixma MP780</b> \$300 (★★★★★ NEW) <a href="http://find.pcworld.com/47554">find.pcworld.com/47554</a>	• Printing: 4800 by 1200 dpi • Legal maximum paper size • Two-sided printing	• Scanning: 2400 by 4800 dpi • PictBridge port • Built-in fax, ADF	• Text/photo quality: Very Good/Outstanding • Scan/copy quality: Fair/Very Good • Print speed (ppm): 6.9 text, 2.5 graphics	Quick like the MP760, but also offers faxing and an automatic document feeder. Fastest scanner on the chart.
4	<b>HP PSC 1610 All-In-One</b> \$130 (★★★★★ NEW) <a href="http://find.pcworld.com/47610">find.pcworld.com/47610</a>	• Printing: 4800 by 1200 dpi • 8.5-by-24-inch maximum paper size	• Scanning: 1200 by 4800 dpi • Media slots, PictBridge port	• Text/photo quality: Very Good/Very Good • Scan/copy quality: Good/Very Good • Print speed (ppm): 4.9 text, 1.4 graphics	Low price for high print quality overall. Fast at printing photos, but slow at copying. Extensive software suite.
5	<b>Lexmark P6250</b> \$170 (★★★★★ NEW) <a href="http://find.pcworld.com/47594">find.pcworld.com/47594</a>	• Printing: 4800 by 1200 dpi • 8.5-by-17-inch maximum paper size	• Scanning: 1200 by 2400 dpi • Media slots, PictBridge port • 2.5-inch color LCD	• Text/photo quality: Fair/Outstanding • Scan/copy quality: Good/Good • Print speed (ppm): 7.4 text, 1.6 graphics	Prints text quickly, though it's slow at printing photos. Makes copies at above-average speed.
6	<b>Epson Stylus Photo RX620</b> \$300 (★★★★★ NEW) <a href="http://find.pcworld.com/47561">find.pcworld.com/47561</a>	• Printing: 5760 by 1440 dpi • 8.5-by-44-inch maximum paper size • Saves to USB memory key	• Scanning: 2400 by 4800 dpi • Film scanning, media slots • 2.5-inch color LCD	• Text/photo quality: Poor/Outstanding • Scan/copy quality: Very Good/Fair • Print speed (ppm): 2.2 text, 1.8 graphics	Prints photos and scans (including film) very well, but copies slowly. Printouts of text and graphics on plain paper were very unattractive.
7	<b>Dell Photo All-In-One Printer 942</b> \$149 (★★★★★ NEW) <a href="http://find.pcworld.com/47588">find.pcworld.com/47588</a>	• Printing: 4800 by 1200 dpi • 8.5-by-17-inch maximum paper size	• Scanning: 1200 by 2400 dpi • Media slots • 2.5-inch color LCD	• Text/photo quality: Fair/Very Good • Scan/copy quality: Very Good/Good • Print speed (ppm): 7.5 text, 1.4 graphics	Prints attractive photos but subpar graphics on plain paper. Copy speed is above average.
8	<b>Epson Stylus CX6600</b> \$200 (★★★★★ RETESTED) <a href="http://find.pcworld.com/43396">find.pcworld.com/43396</a>	• Printing: 5760 by 1440 dpi • 8.5-by-44-inch maximum paper size	• Scanning: 1200 by 2400 dpi • Media slots	• Text/photo quality: Fair/Good • Scan/copy quality: Very Good/Good • Print speed (ppm): 4.7 text, 1.4 graphics	High scan quality, but middling print quality overall. Slow to scan, though copy speeds are above average.
9	<b>Brother MFC-5840CN</b> \$200 (★★★★★ NEW) <a href="http://find.pcworld.com/47552">find.pcworld.com/47552</a>	• Printing: 600 by 1200 dpi • Legal maximum paper size	• Scanning: 1200 by 2400 dpi • Media slots, ethernet port • Built-in fax, ADF	• Text/photo quality: Fair/Very Good • Scan/copy quality: Good/Good • Print speed (ppm): 3.4 text, 1.1 graphics	Offers networking, but text printing and scan speeds are slow. Copy speed is below average.
10	<b>Lexmark X7170</b> \$180 (★★★★★ NEW) <a href="http://find.pcworld.com/47563">find.pcworld.com/47563</a>	• Printing: 4800 by 1200 dpi • 8.5-by-17-inch maximum paper size	• Scanning: 1200 by 4800 dpi • PictBridge port • Built-in fax, ADF	• Text/photo quality: Fair/Outstanding • Scan/copy quality: Poor/Good • Print speed (ppm): 7.8 text, 1.5 graphics	Low print and scan quality overall. Prints attractive glossy photos, but very slowly. Fast at printing text.

**HOW WE TEST:** Go to [find.pcworld.com/43854](http://find.pcworld.com/43854) for a full description of our test methodology. Data based on tests designed and conducted by the PC World Test Center. All rights reserved. **CHART NOTES:** For printing we list maximum enhanced resolution; for scanning we list maximum optical resolution. PictBridge ports allow printing directly from compatible cameras. Photos printed at best-quality settings; optional photo inks used when offered. All units have flatbed scanners and a USB 2.0 port. Prices given are street prices as of 3/25/05. Star ratings are based on print quality, features, ease of use, speed, and service and support. Price is taken into consideration for Best Buy honors only. See [find.pcworld.com/10860](http://find.pcworld.com/10860) for details on PC World's Star Ratings.



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## TOP 10 DIGITAL CAMERAS

★ Products in this chart are ordered by star rating. Visit [find.pcworld.com/47722](http://find.pcworld.com/47722) for reviews of all products tested this month and ranked in this chart.

MOST SMALL DIGITAL CAMERAS LOOK CHIC, and the latest such models we've tested are no exception. As this month's chart-topping newcomers—Nikon's Coolpix 5600 and Coolpix 7900—prove, size is no obstacle to performance. Both excelled in our image output tests; ironically, the 5.1-megapixel 5600 actually surpassed the 7.1-megapixel 7900, producing attractive-looking flesh tones and better-balanced exposures.

Though these two general-purpose units are of similar size, each has its own distinct characteristics. The silvery 5600 looks a bit chunkier than its sibling, due to its lack of a pronounced handgrip and,

perhaps, to its reliance on a pair of AA batteries. By contrast, the black-and-silver 7900 is a bit slimmer, has a comfortable grip, and seems designed for easy one-handed operation. The 7900 also has a slightly longer zoom lens than the 5600.



NIKON'S COOLPIX 7900 is stylish.

New to our chart, as well, are models from Olympus and Casio. The zoom on the boxy Olympus C-5500 SportZoom has tremendous range, and the camera provided pleasing exposures on our test images. The Casio model has a unique form: Its stout body has a long lens that protrudes outward. Its ease of use and battery life impressed us, but its dark, muddled images will disappoint most users.

	POINT-AND-SHOOT CAMERA	Features and specifications <sup>1</sup>	Performance	Bottom line
1	<b>Nikon Coolpix 5600</b> <b>Best Buy</b> \$280 (★★★★★ NEW) <a href="http://find.pcworld.com/47706">find.pcworld.com/47706</a>	<ul style="list-style-type: none"> <li>• 5.1 megapixels</li> <li>• 35mm to 105mm zoom</li> <li>• 16 scene modes</li> <li>• 640 by 480 video</li> <li>• Two AA batteries</li> <li>• 6.3 ounces</li> </ul>	Image quality: Outstanding Ease of use: Very Good Battery life: Good	This compact, versatile model deftly handled our imaging tests, showing better image exposures than even its higher-megapixel sibling, the 7900.
2	<b>Nikon Coolpix 7900</b> \$450 (★★★★★ NEW) <a href="http://find.pcworld.com/47704">find.pcworld.com/47704</a>	<ul style="list-style-type: none"> <li>• 7.1 megapixels</li> <li>• 38mm to 114mm zoom</li> <li>• 16 scene modes</li> <li>• 640 by 480 video</li> <li>• Rechargeable battery</li> <li>• 6.5 ounces</li> </ul>	Image quality: Very Good Ease of use: Very Good Battery life: Good	Occasional snappers can operate this general-use model easily, and its controls make it an attractive backup camera for experienced shooters.
3	<b>HP Photosmart R717</b> <b>Best Buy</b> \$299 (★★★★★ May 05) <a href="http://find.pcworld.com/47128">find.pcworld.com/47128</a>	<ul style="list-style-type: none"> <li>• 6.2 megapixels</li> <li>• 39mm to 117mm zoom</li> <li>• 12 scene modes</li> <li>• 320 by 240 video</li> <li>• Rechargeable battery</li> <li>• 5.8 ounces</li> </ul>	Image quality: Very Good Ease of use: Very Good Battery life: Good	Unit builds on the popular Photosmart R707's best points: image advice, extensive help menus, and in-camera red-eye reduction.
4	<b>Nikon Coolpix 4800</b> \$400 (★★★★★ Jan 05) <a href="http://find.pcworld.com/45116">find.pcworld.com/45116</a>	<ul style="list-style-type: none"> <li>• 4.0 megapixels</li> <li>• 36mm to 300mm zoom</li> <li>• 15 scene modes</li> <li>• 640 by 480 video</li> <li>• Rechargeable battery</li> <li>• 10.6 ounces</li> </ul>	Image quality: Very Good Ease of use: Good Battery life: Very Good	Ideal for snapshots and travel, the moderate-size 4800 has an appealing price for a camera with an 8.3X optical zoom lens—the longest on the chart.
5	<b>Canon PowerShot S60</b> \$449 (★★★★★ Oct 04) <a href="http://find.pcworld.com/43541">find.pcworld.com/43541</a>	<ul style="list-style-type: none"> <li>• 5.0 megapixels</li> <li>• 28mm to 100mm zoom</li> <li>• 5 scene modes</li> <li>• 640 by 480 video</li> <li>• Rechargeable battery</li> <li>• 10.0 ounces</li> </ul>	Image quality: Very Good Ease of use: Very Good Battery life: Good	Canon gave the S60 a wider-angle lens than most point-and-shoots have. The camera is fairly bulky, but you get lots of creative controls.
6	<b>Casio Exilim EX-Z55</b> \$400 (★★★★★ Jan 05) <a href="http://find.pcworld.com/45122">find.pcworld.com/45122</a>	<ul style="list-style-type: none"> <li>• 5.0 megapixels</li> <li>• 35mm to 105mm zoom</li> <li>• 23 scene modes</li> <li>• 320 by 240 video</li> <li>• Rechargeable battery</li> <li>• 5.6 ounces</li> </ul>	Image quality: Very Good Ease of use: Good Battery life: Outstanding	Easily pocketable camera has a large (2.5-inch) LCD and scene modes for all occasions; connects to a PC via an included docking station.
7	<b>Olympus C-5500 SportZoom</b> \$320 (★★★★★ NEW) <a href="http://find.pcworld.com/47708">find.pcworld.com/47708</a>	<ul style="list-style-type: none"> <li>• 5.1 megapixels</li> <li>• 38mm to 190mm zoom</li> <li>• 11 scene modes</li> <li>• 320 by 240 video</li> <li>• Two AA batteries</li> <li>• 8.6 ounces</li> </ul>	Image quality: Outstanding Ease of use: Good Battery life: Good	Accurate colors and exposures, and an impressive zoom range, are this model's strengths. But its case feels poorly designed.
8	<b>Sony Cyber-shot DSC-T33</b> \$450 (★★★★★ May 05) <a href="http://find.pcworld.com/47112">find.pcworld.com/47112</a>	<ul style="list-style-type: none"> <li>• 5.1 megapixels</li> <li>• 38mm to 114mm zoom</li> <li>• 9 scene modes</li> <li>• 640 by 480 video</li> <li>• Rechargeable battery</li> <li>• 5.3 ounces</li> </ul>	Image quality: Good Ease of use: Very Good Battery life: Fair	Slender, silvery beauty sports easy-to-understand controls and an impressive 2.5-inch LCD. Colors could be more accurate, though.
9	<b>Canon PowerShot A510</b> \$200 (★★★★★ May 05) <a href="http://find.pcworld.com/47090">find.pcworld.com/47090</a>	<ul style="list-style-type: none"> <li>• 3.2 megapixels</li> <li>• 35mm to 140mm zoom</li> <li>• 13 scene modes</li> <li>• 640 by 480 video</li> <li>• Two AA batteries</li> <li>• 9.6 ounces</li> </ul>	Image quality: Good Ease of use: Good Battery life: Fair	Compact, metal-bodied unit boasts some advanced controls and accepts optional lenses. A bargain, given its feature set.
10	<b>Casio Exilim Pro EX-P505</b> \$500 (★★★★★ NEW) <a href="http://find.pcworld.com/47702">find.pcworld.com/47702</a>	<ul style="list-style-type: none"> <li>• 5.0 megapixels</li> <li>• 38mm to 190mm zoom</li> <li>• 22 scene modes</li> <li>• 640 by 480 video</li> <li>• Rechargeable battery</li> <li>• 7.6 ounces</li> </ul>	Image quality: Fair Ease of use: Very Good Battery life: Very Good	This easy-to-use point-and-shoot has unique video features, but lacks an optical viewfinder and suffers from mediocre image quality.

**FOOTNOTE:** <sup>1</sup>Resolutions are expressed in effective pixels, zoom range (focal length) is identified as 35mm equivalent, and camera weights include batteries. The designation "Rechargeable battery" refers to a lithium ion battery unless otherwise noted; AA batteries are alkaline. Video capability includes audio. **HOW WE TEST:** To gauge picture quality, we take a series of shots, with and without flash, at the camera's highest resolution and default automatic settings. 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 to them; we then average those scores. Data based on tests designed and conducted by the PC World Test Center. All rights reserved. **CHART NOTES:** Prices given are street prices as of 4/1/05. Star ratings are based on picture quality, ease of use, features, battery life, and support, but not price. Price is taken into consideration for Best Buy honors only. See [find.pcworld.com/10860](http://find.pcworld.com/10860) for details on PC World's Star Ratings.



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TOP 100

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of each chart. Next month in the *Top 100*, we'll look at PCI Express graphics boards; 19-, 23-, and 24-inch LCD monitors; and in our Spotlight review, color laser multifunction printers. Also watch for our feature story on digital cameras.



MEMOREX'S External 16x16 Dual-Format, Double-Layer Recorder is a Best Buy.



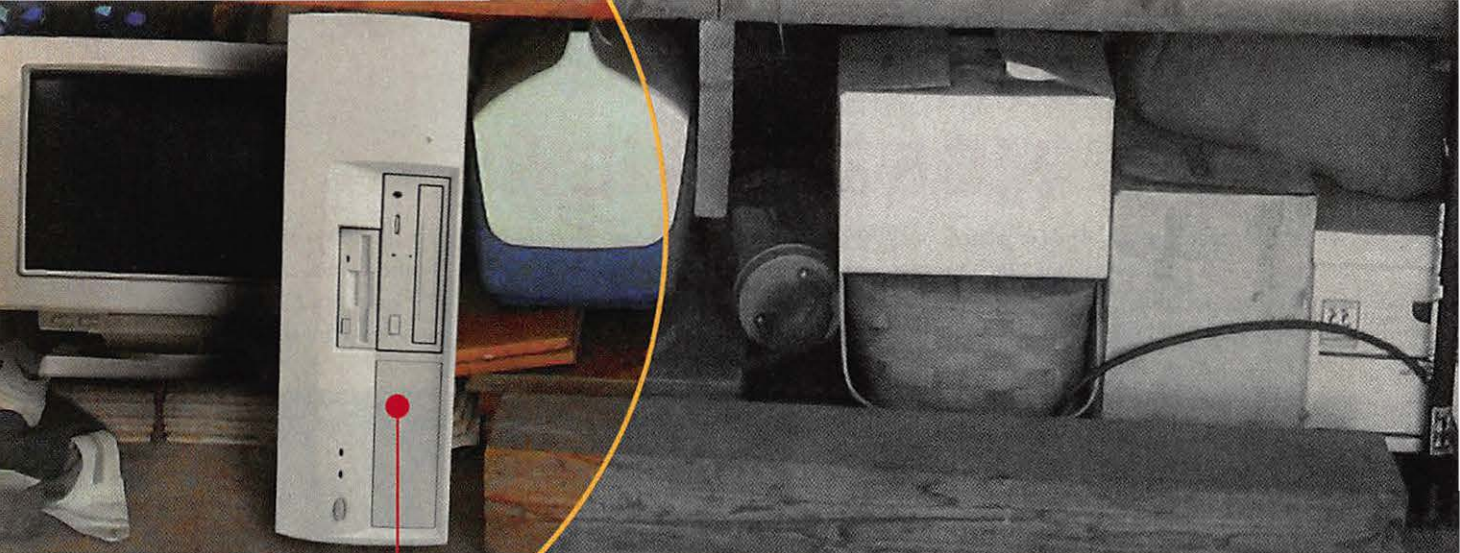
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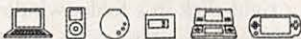
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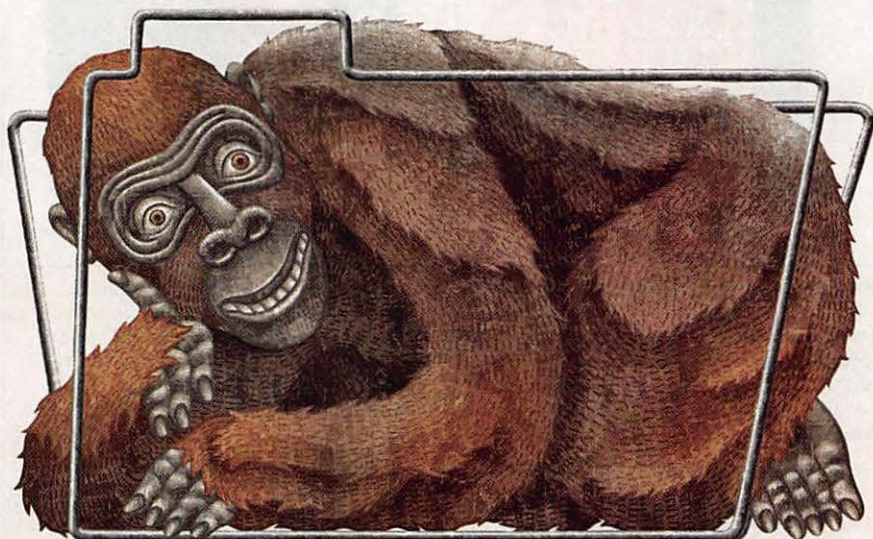
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# HERE'S HOW

EDITED BY AOIFE M. McEVY AND DENNIS O'REILLY



## WINDOWS TIPS

SCOTT DUNN

### Six Quick Tips Help Tame Oversize Files and Folders

**Windows** YOUR FILES aren't getting any smaller or less plentiful. Whether they're Word documents, JPEGs, MP3s, or AVI movies, the files on your hard drive keep getting bigger and bigger, and the folders holding them more numerous than loopholes in political fund-raising laws. To prevent Windows from choking, you need techniques and tools to streamline file management and folder navigation.

Every time you want to make a new

folder, you either select a folder in an Explorer window and choose File>New Folder, or right-click in a folder window and select New Folder. John Swan of Bakersfield, California, wants to know if there is a faster way. I know of at least three.

**Get keyboard creative:** With an Explorer window open, press <Alt>-F, and then N and F (in Windows 98); or <Alt>-F, and then W and F (in later versions). This shortcut works whether the active selection is in Explorer's tree pane on the left or in the

folder pane on the right. My favorite approach is to press <Alt>-F <Enter><Enter>, although this strategy works only if nothing is selected in the folder window's right pane. If a single item is selected in the right pane, deselect it by pressing <Ctrl>-<Space>, and then press <Alt>-F <Enter><Enter> to create the new folder.

**Do the dialog dance:** Explorer's toolbar still lacks a New Folder button (a feature I first asked for in this column about seven years ago), but many Open and Save dialog boxes in Windows applications have just what the columnist ordered. If you're working in a program, choose File Save As or File Open, and click Create New Folder (a folder icon with a starburst in the top right) just above the file list.

**Make a menu:** Another approach is to add a Make New Folder command to your right-click, or context, menu. This saves you the trouble of navigating to the File menu's often slow New submenu. To create a new context menu item, open an Explorer window (pressing <Windows>-E is one way) and choose Tools Folder Options. Click the File Types tab, and in the 'Registered file types' list, select File Folder and click Edit (in Windows 98) or Advanced (in later versions) to open the Edit File Type dialog box. Now click the New button. For 'Action', type the words that you want to appear on your context menu (such as New Folder). For 'Application used to perform action', type `command.com /c md "%1\New Folder"` (in Windows 98 and Me) or `cmd.exe /c md "%1\New Folder"` (in Windows 2000 and XP), as shown in FIGURE 1.

Click OK and then close the remaining dialog boxes. Now when you right-click a folder icon, your New Folder command will be available without your having to navigate through the New submenu (see



## 142 WINDOWS TIPS

How are you going to keep your multi-megabyte files in line? Tame them with these slick file and folder tricks.

## 146 INTERNET TIPS

Reclaim your inbox by using the free spam blocker in your e-mail program; Trillian universal IM client update.

## 148 HARDWARE TIPS

Prepare your PC for an upgrade to a triple-digit-gigabyte hard drive; power your gear with a universal 12V adapter.

## 150 OFFICE TIPS

Make fast work of repetitive data entry via AutoCorrect; the quick way to list Word's keyboard shortcuts.

## 152 ANSWER LINE

Wipe out erroneous boot error messages; print from non-USB apps to USB printers; put password protection on a memory key for travel.



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FIGURE 1: CREATE YOUR OWN "NEW FOLDER" command for your context menus by editing the File Folder file type.

FIGURE 2). Windows won't permit you to create two folders named "New Folder" in the same place, so you have to rename any folder you create before you can choose the command again.

If you make a mistake in Windows 98, return to the Edit File Type dialog box, select your new command, and click *Edit* to change it or *Remove* to delete it. However, if you make a mistake in Windows 2000, Me, or XP, you'll have to alter the command via the Registry Editor, or delete it and start over. For details on removing such commands from your context menus, see the section "Resort to Regedit" in last December's *Windows Tips* column ([find.pcworld.com/47116](http://find.pcworld.com/47116)).

## SPECTACULAR FOLDER VIEWS



I have ripped 15,015 karaoke song files (37.7 gigabytes' worth) into one folder. But Windows XP won't let me add any more than that even though my 160GB hard drive (formatted with FAT32) has plenty of free space. How can I add more files to my karaoke folder? I don't want to create more folders; that's too easy.

Ron Denka, Syracuse, New York  
AS MUCH AS I hate to tell someone how to organize their files, it just might be time for you to rethink your strategy. It's

true that any single folder on a FAT32 hard disk can, theoretically, hold 65,534 files or subfolders, but this is true only if the file names use the shorter DOS-style 8.3-character format. The total number of files per folder drops dramatically when the files use longer names (which nearly all

now do). Windows won't find all of your song files until you divide them into a few different folders, or rename them all with short DOS-format names.

Okay, I admit it: If you insist on cramming as many files as possible into a single megafolder, Windows XP does have some features to help impose order. First, launch Explorer, select the folder you want to organize, and click *View>Choose Details*. Scroll through the attributes list and check the boxes that you think you might want to use as a basis for organizing your files. For example, if you have a folder full of music files, you may want to

check *Album Title* to be able to sort and arrange files by the album they belong to. Check as many attributes as you would like to see in Explorer's Details view, and when you're done, click OK.

**Bonus tip:** With Explorer's folder view set to Details (choose *View>Details*), you can quickly add or remove the attributes displayed: Right-click the column headings above the file list and select an item to display or hide. Note that this menu shows only a partial list of available attributes; selecting *More* at the bottom of the list opens the Choose Details dialog box, which shows the complete list.

With your attribute choices in place, click any column heading to sort the folder's items by that attribute. To sort by attributes hidden from view, choose *View>Arrange Icons by* and select an attribute from the submenu. To continue the previous example, you would click *View>Arrange Icons by>Album Title* to sort files by the album they appear in.

Now the fun part: To break up this huge list of files into smaller chunks based on your desired attribute, simply choose

*View>Arrange Icons by>Show in Groups*. This divides the folder into sections with headings that represent the category you selected earlier. So, continuing our previous example, the folder would now show groups of albums with album titles as their headings (see FIGURE 3).

Some attributes group their own special way. For example, if you sort by Name, the groups will represent letters of the alphabet. Sort by Size to create groups such as Tiny, Small, Medium, and Large. ▶

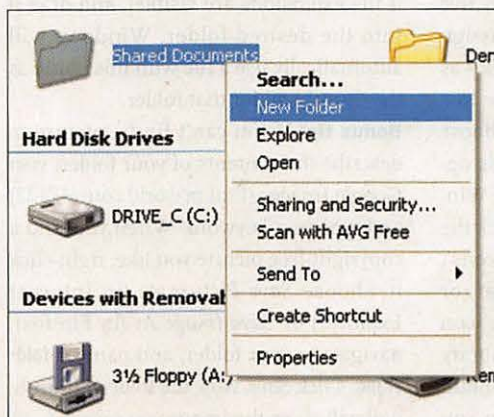
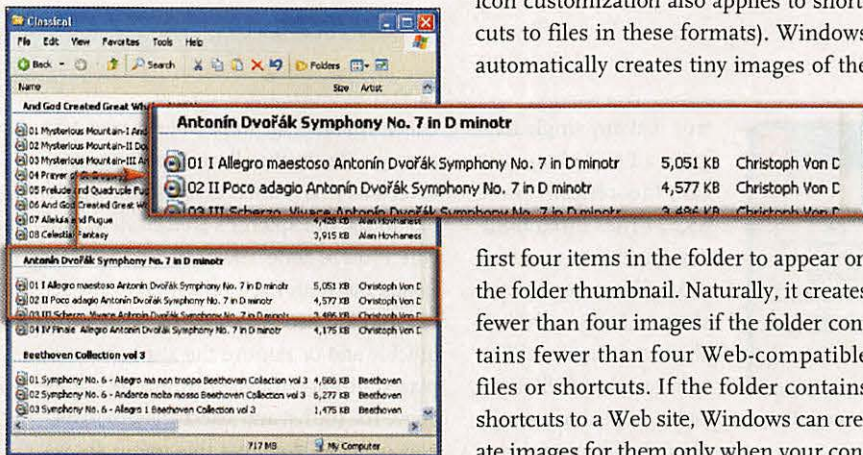


FIGURE 2: OPEN A NEW subfolder one click sooner by adding a New Folder command to your right-click menu.



Organizing by groups lets you change a grouping instantly just by choosing a different attribute from the 'View>Arrange Icons by' submenu. If your folder is already showing file details, for example, you can change the groupings by clicking the desired attribute heading that appears



**FIGURE 3: INSTANTLY ORGANIZE** your files by the attribute of your choice when you use Windows XP's "Show in Groups" feature.

at the top of the file list. Reorganizing hierarchical folders that haven't been grouped could require hours of tedious reshuffling of files into levels of folders.

Grouping is available for most folder views, including Thumbnails, Tiles, Icons, and Details (the exception being Explorer's List view).

### EASIER FOLDER ID

**Windows XP** YOU MAY FIND it easier to spot the folder you need by giving its icon a distinctive appearance. Windows XP lets you assign a custom icon or (if you view your files as thumbnails) even a custom picture to a folder. Right-click the folder and choose *Properties>Customize*. (Note that this option isn't available for all folders in Windows XP.) To add a custom icon, click the *Change Icon* button under 'Folder icons'. Select one of the icons that appear, or click the *Browse* button to locate an icon (.ico) file in an application (.exe), library (.dll), or any other file that may contain icons. Once you've found the icon you want to use for the file, select it, click *Open* (if necessary), and then click *OK* as

required to close all the dialog boxes.

If one or more folders use the Thumbnails view (choose *View>Thumbnails*), they may already have a custom appearance, providing the folders' files are in common Web formats such as .htm for text, or .jpg, .gif, .bmp, and .tif for pictures (this prefab icon customization also applies to shortcuts to files in these formats). Windows automatically creates tiny images of the

first four items in the folder to appear on the folder thumbnail. Naturally, it creates fewer than four images if the folder contains fewer than four Web-compatible files or shortcuts. If the folder contains shortcuts to a Web site, Windows can create images for them only when your connection to the Internet is active.

Identifying four little pictures on one folder thumbnail requires an eagle eye. To make your folders stand out, select a single picture for the thumbnail: Right-click the folder, choose *Properties>Customize*, and click *Choose Picture* in the 'Folder pictures' section. Locate and select an image file as described above, click *Open*, and then click *OK*.

Of course, following these steps for every folder you want to customize can take a little time. To speed things up, locate the image you want to use for your folder thumbnail, rename it **folder** (or **folder.jpg**, **folder.gif**, or whatever's appropriate, if file extensions are visible), and drag it into the desired folder. Windows will automatically use a file with this name as the thumbnail for that folder.

**Bonus tip:** If you can't find a picture to describe the contents of your folder, visit Google Images ([find.pcworld.com/47122](http://find.pcworld.com/47122)) and type in a keyword. When you find a copyright-free picture you like, right-click it, choose *Save Picture As* (in Internet Explorer) or *Save Image As* (in Firefox), navigate to your folder, and name it **folder.jpg**. Click *Save*. Now the folder's thumbnail will show the image you selected.

Finally, if you find the images in Thumbnails view too big and clunky, visit

### WINDOWS TOOLBOX

## Put More of Your Favorite Folders a Single Click Away

**Windows 2K XP 98 ME** WHY YET ANOTHER toolbar for Windows Explorer?

Because Folder View gives you buttons representing the subfolders (or shortcuts to folders) in its Main Folder (which you choose). Right-click a button to see an 'Open in New Window' option. If the folders have subfolders, each button has a companion that shows those folders in a menu. Even though Folder View recommends that you make My Documents your Main Folder, I find it's more flexible to set the program's Main Folder to one that I create and fill with my favorite shortcuts. Folder View provides



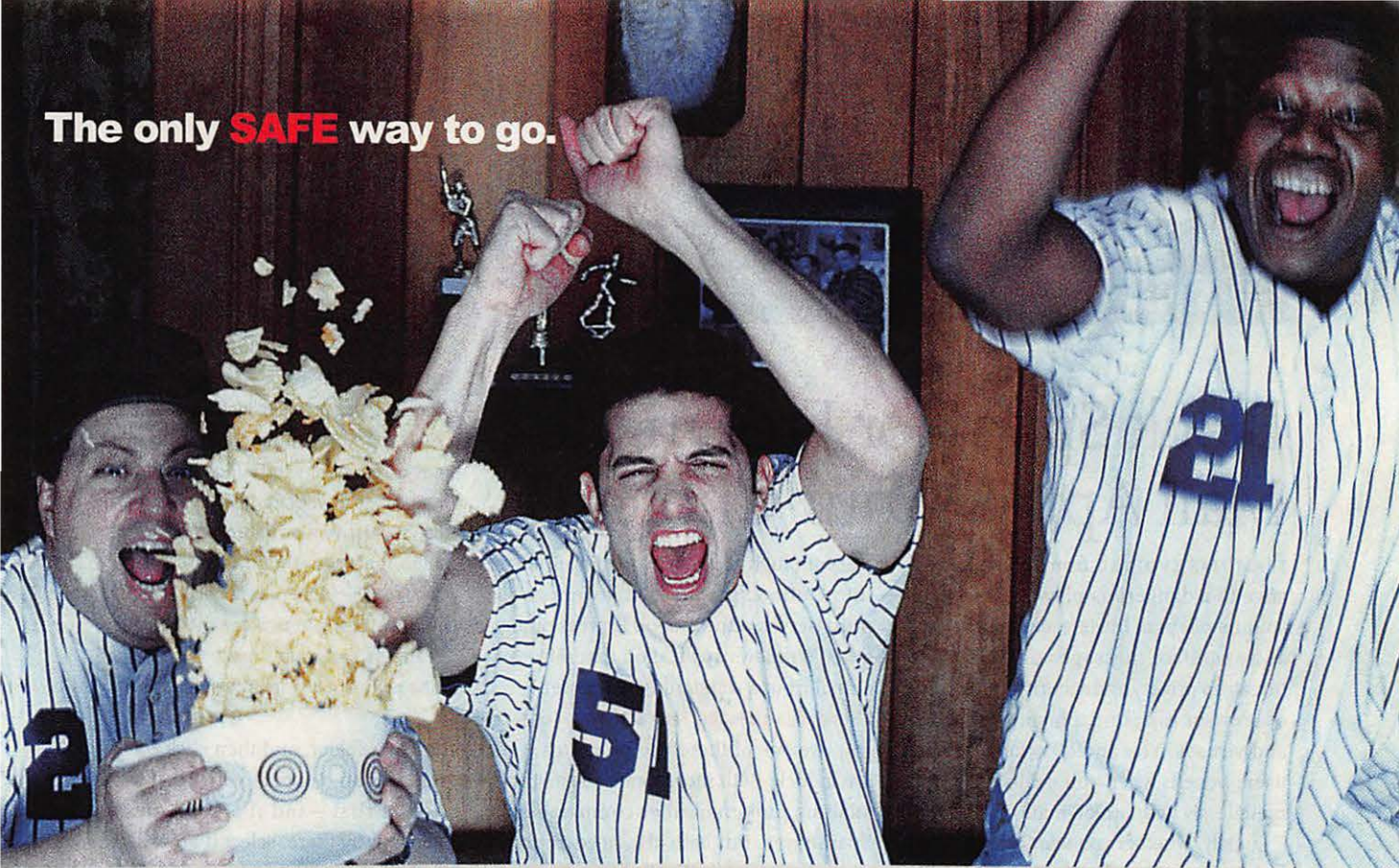
a pop-up menu of recently used folders, and you can add a menu version to the taskbar, as well as to the Open and Save dialog boxes in most programs. Last but not least, Folder View is free. Browse to [find.pcworld.com/47126](http://find.pcworld.com/47126) for your copy.

[find.pcworld.com/47124](http://find.pcworld.com/47124) to download and install Tweak UI, the free customizing tool from Microsoft. After you install it, open Tweak UI, double-click *Explorer*, select *Thumbnails* in the left pane, and change the Size number in the Thumbnail box to something smaller, like 64. Then click *OK*. You may need to close and reopen the folder to see its thumbnails regenerated in the new size.

Send Windows-related questions and tips to [scott\\_dunn@pcworld.com](mailto:scott_dunn@pcworld.com). We pay \$50 for published items. Visit [find.pcworld.com/31607](http://find.pcworld.com/31607) for more Windows Tips. Scott Dunn is a contributing editor for PC World.



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## INTERNET TIPS

SCOTT SPANBAUER

## Block Spam for Free in the Mail App of Your Choice

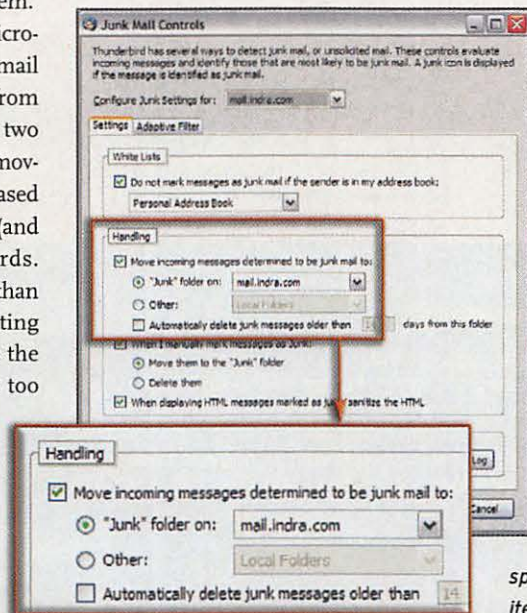
SPAM HAS EVOLVED from a mere annoyance to a dangerous plague. The sheer volume of spam hurts your productivity, and spamlike messages often conceal threats to privacy and security in the form of browser hijackers, phishing exploits, and viruses. You and all other Internet users benefit when you deal swiftly and mercilessly with junk e-mail.

Luckily, whether you use Outlook, Outlook Express, Thunderbird/Mozilla Mail & Newsgroups, Eudora, or Opera Mail, you have some very good, no-cost antispam tools to choose from. (Note: We excluded AOL Mail, MSN, and various Web mail systems from consideration.) Some spam blockers are even built into your e-mail reader. But not every e-mail program's junk filter is worth using. Here are the filters that work, and how to activate them.

**Outlook/Outlook Express:** Though Microsoft has added features to both its e-mail programs for improved protection from spam, Outlook is the only one of the two that has a junk mail filter; it works by moving suspected spam to a junk folder based on the sender's address and a static (and inaccessible) list of spammish words. Outlook 2003's filter is more trouble than it's worth: The relatively passive setting lets too much spam through, while the aggressive mode unwittingly snags too many legitimate messages. (To test it yourself, choose *Tools>Options>Preferences*, click the *Junk E-mail* button, select either *Low* or *High*, and click *OK*.) Instead, use SpamBayes ([find.pcworld.com/47130](http://find.pcworld.com/47130)), a free, open-source filter that uses statistical analysis of message contents to sort the good mail from the

bad with high accuracy. SpamBayes plugs into Outlook seamlessly; it works as a proxy server with Outlook Express or any other Windows application that retrieves e-mail from a standard POP3 server.

**Thunderbird/Mozilla Mail & Newsgroups:** If you use one of these two programs, you are in luck: Both incorporate a statistical-analysis junk-mail filter comparable to SpamBayes. But both also need a jumpstart of this feature for full functionality. Choose *Tools>Junk Mail Controls*, check the first two options under *Handling* to have messages suspected of being junk moved to the Junk folder, and click *OK* (see **FIGURE 1**). To help the programs build a database of known spam-message characteristics, select one or more messages that you know to be spam in the Inbox or



**FIGURE 1: TURN THUNDERBIRD LOOSE** on spam by enabling and then adjusting its Junk folder settings.

## DOWNLOAD OF THE MONTH

## Trillian Basic 3

IF YOU SPEND much time chatting on more than one of the major instant messaging systems, a universal chat program such as Cerulean Studios' Trillian Basic 3 ([find.pcworld.com/47134](http://find.pcworld.com/47134)) is a must. In the past, using Trillian instead of a native AIM, ICQ, MSN, or Yahoo Messenger client often meant forgoing voice, video, and other advanced features. But Trillian's latest version improves support for such features (though video support requires the \$25 Pro version). Version 3.1, in beta testing as we went to press, promises performance, file-transfer, and AIM-compatibility improvements.

any other folder, and then click the *Junk* toolbar icon. Inspect your Junk folder often at first—and if a good message finds its way there, select it and click the *Not Junk* icon. After a short training period, the program will automatically sort your e-mail with surprising accuracy.

**Eudora 6.2:** Qualcomm's venerable mail program includes a spam filter that works much like the ones in Thunderbird/Mozilla and SpamBayes. Unfortunately, the filter works only in Eudora's Paid Mode (\$50, or \$40 to upgrade from an earlier paid version). If you prefer either Eudora's ad-supported Sponsored Mode or its more feature-limited Light Mode (both are free), you can still nuke spam by using SpamBayes as a proxy server.

**Opera 7.54:** Like Thunderbird or SpamBayes, this browser's integrated e-mail feature is supposed to learn from you what is spam and what isn't. If you have as little patience with Opera's slowness in learning as I do, you may want to use SpamBayes instead. (Visit [find.pcworld.com/47528](http://find.pcworld.com/47528) to read last month's e-mail roundup.) ■

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## HARDWARE TIPS

KIRK STEERS

## Plan Ahead to Keep Your Big Hard Drive Purring

IF YOUR MULTIMEGABYTE music, picture, and video files have your current hard drive bursting at the seams, it may be time to upgrade. Today, high-capacity hard drives are more convenient than DVD drives, and they have become amazingly affordable—a 200GB drive can now cost less than \$100. Hard drives are a breeze to install, with a few minor caveats. Here are some important things to consider before you pop your PC's hood.

To use a hard drive larger than 137GB, your computer's operating system and BIOS must support 48-bit logical block addressing (LBA). This refers to the number of sectors that a PC can recognize on

a hard drive. The 24-bit addressing used by older hardware and OSs limits the amount of data they can recognize on a single hard disk to 137GB.

If your PC is more than two years old, its BIOS may not support 48-bit addressing. Consult your user manual, or con-

tact your computer manufacturer to determine whether the system needs a BIOS upgrade.

David Marcione's \$10 HDINFO utility tells you whether your BIOS can handle big hard drives. Visit [www.48bitLBA.com](http://www.48bitLBA.com) to download your copy. Marcione's site is filled with useful information about how to add a large hard drive to your PC.

## DRIVE CONSIDERATIONS

IF YOUR PC'S BIOS doesn't support big drives, you have a number of options.

**Update your BIOS:** Check the vendor's Web site for BIOS updates. If you find one, follow installation instructions to the letter. A BIOS is a terrible thing to trash.

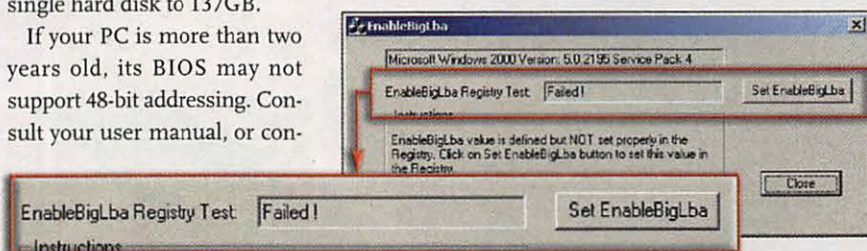
**Use the drive's DDO utility:** Most big hard drives come with a Dynamic Drive Overlay program (Seagate's DiscWizard and Maxtor's MaxBlast are examples) that performs the needed initialization by augmenting the BIOS code.

**Add a SATA adapter:** The easiest but most expensive way to bypass your PC's BIOS limitations is to install an adapter that supports large-capacity drives. The Serial ATA RAID 1210SA card from Adaptec ([find.pcworld.com/47136](http://find.pcworld.com/47136)) accommodates

two Serial ATA hard drives and costs \$75.

Drives larger than 137GB also require an OS that supports 48-bit addressing. Windows XP with Service Pack 1 or later and Windows 2000 with Service Pack 3 or later both qualify. With 2000, though, you may have to alter a Windows Registry setting. Visit [find.pcworld.com/47138](http://find.pcworld.com/47138) to download a copy of David Marcione's EnableBigLba. Run the program to determine whether you need to change the Registry (see **FIGURE 1**), and how to do it.

If your PC runs Windows 98 or Me and uses an Intel 8xx-series chip set, you may be able to use a big drive by installing the free Intel Application Accelerator (IAA)



**FIGURE 1: EASILY SET THE Windows 2000 Registry to support big hard drives with the EnableBigLba utility.**

utility, which replaces the ATA drivers in those OSs with updated versions that support big hard drives. Go to [find.pcworld.com/47140](http://find.pcworld.com/47140) to download IAA and Intel's free Chipset Identification Utility, and to view a list of the chip sets IAA supports.

If you have to buy a new adapter, consider a SATA card such as the Adaptec model I cited previously; you'll have to get a SATA drive, but it will be faster than its parallel ATA counterpart and easier to install. You can also reuse the drive in your next PC. (Note that a drive with a large buffer will speed up the transfer of big files.) Visit [find.pcworld.com/47526](http://find.pcworld.com/47526) for our reviews of monster-size drives from last March. Browse to [find.pcworld.com/47488](http://find.pcworld.com/47488) for instructions on installing a SATA drive from Stan Miastkowski's September 2003 *Step-By-Step* column. ■

Go to [find.pcworld.com/31511](http://find.pcworld.com/31511) for past Hardware Tips columns. Send your tips and questions to [kirk\\_steers@pcworld.com](mailto:kirk_steers@pcworld.com). We pay \$50 for published items. Kirk Steers is a PC World contributing editor.

## GIZMO POWER TO GO

CHARGING YOUR CELL phone or MP3 player in your car is easy when you use a special power adapter that plugs into the car's 12V outlet (the cigarette lighter). But what about your laptop, PDA, or other device? Instead of getting a unique adapter for each one, buy the AC Anywhere adapter from Belkin ([find.pcworld.com/47158](http://find.pcworld.com/47158))—it turns a 12V outlet into a standard AC power outlet. A 300-watt version comes with two sockets and costs \$80 (the 140W version costs \$60).





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# OFFICE TIPS

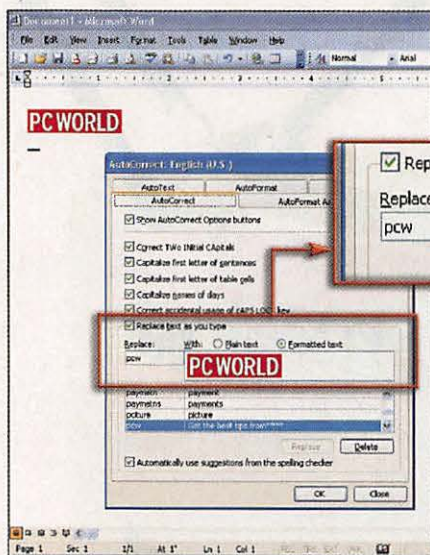
MICHAEL S. LASKY

## Take the Drudgery Out of Typing, via AutoCorrect

MICROSOFT CALLS THE AutoCorrect function in Office 2000 and later “the proofreader over your shoulder.” Usually this handy feature performs on-the-fly fixes of common typing and spelling er-

rors; they'll appear to the left of the passage under ‘Replace’. Select *Plain text* or *Formatted text* above the passage (if available), to reflect how you want the end result to look. Click *Add*, and AutoCorrect will place your trigger letters alphabetical-ly among your listed existing shortcut entries. Finish by clicking *OK* or *Close*.

To enter the text in a Word document,



**WORD'S AUTOCORRECT** lets you insert text and graphics, using keystrokes you assign.

rors, but it often inserts words or replaces ones you don't want changed, such as proper names. Then it seems more like “the noodge over your shoulder.” On the other hand, you can use this feature to automate text insertion in Word.

Start by highlighting a phrase, sentence, paragraph, or whole document that you regularly need to enter in other Word files. Click *Tools•AutoCorrect Options*. In the bottom half of the AutoCorrect tab, you'll see all or a portion of what you highlighted. Enter the keystrokes you'll use to trigger the auto-insertion of the highlighted passage—say, **addr** for your return

type your trigger letters and activate the text insertion by pressing either the spacebar or **<Enter>**, or by typing a punctuation mark (which will be added to your boilerplate text). Note: If you are prompted when exiting Word to accept the changes made to the global template, normal.dot, click *Yes*, or the AutoCorrect shortcuts you created during that session will be lost.

AutoCorrect also works in Excel, Outlook, and PowerPoint, though you can't preselect text in these apps and have it appear automatically in the ‘Replace’ box. You can save your auto-typing as plain text or formatted text, and there's no practical limit on the length of the text. In Word and Outlook, AutoCorrect lets you add graphics, too (see **FIGURE 1**). To remove the autotyping entry, just reopen the AutoCorrect dialog box, highlight the letters that trigger the shortcut, and click *Delete*.

### THE NON-MACRO ‘MACRO’

IF YOU'RE JUST looking for a quick way to insert a chunk of text—to see, say, how many words in a given font can fill a

space—macros come in handy. The brain behind macros is Microsoft's Visual Basic for Applications, a programming language. Even if you use the auto-macro recorder in Word and Excel frequently (click *Tools•Macro•Record New Macro*), just the idea of VBA may be off-putting. The macro recorder serves as a buffer, hiding Visual Basic code from you during and after creation of a macro. Unless you press **<Alt>+<F11>** or select *Tools•Macro•Visual Basic Editor*, you will never see this programming language, despite the fact that it's always on in the background.

For example, here's a nifty Word command to create dummy text: Open a new Word document, type **=rand(1)**, and press **<Enter>**. Up pops a 45-word paragraph, repeating ‘The quick brown fox jumps over the lazy dog.’ Simply change the number within the parentheses to repeat the paragraph that many times.

This command is also useful if you need to get a word count across multiple pages. It sure beats pasting big blocks of text over and over again, right? For all other formatted boilerplates,

though, the AutoCorrect function described above is your best resource. ■

*Former PC World senior editor Michael S. Lasky is a freelance writer in San Francisco.*

### COMMANDS CLOSE AT HAND

APART FROM THE key combinations in Word's toolbar menus, the app's keyboard shortcuts are hard to find. That is, unless you use its built-in macro to list them. Select *Tools•Macro•Macros* (or press **<Alt>+<F8>**) to open the Macros dialog box. Click the ‘Macros in’ drop-down menu and select *Word commands*. Type **lis** and press the **<Down Arrow>** to choose *ListCommands*, and then press **<Enter>**. You can open a document that shows all of the keyboard commands in Word, or just the ones for the current menu and keyboard settings. Pick the option you want and click *OK*. Then either save the document or print a copy for reference (note that the ‘All Word commands’ option runs about 19 pages long).



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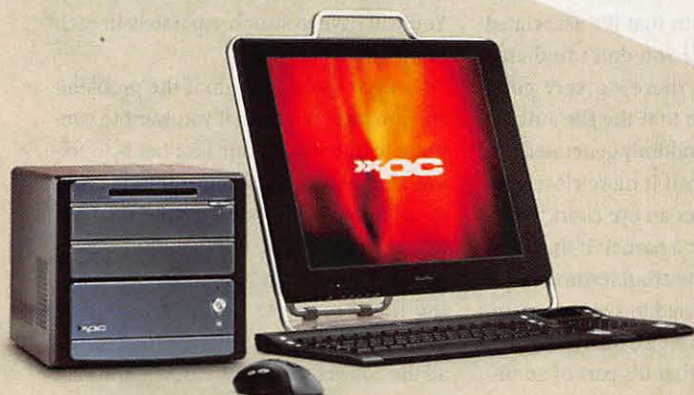


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# Stop Those Annoying Boot-Up Error Messages

**I GET THE SAME error message every time I boot my computer, but everything seems to work okay after that. What's wrong?**

(Name withheld by request)

SOMETHING HAS changed in your computer, for better or for worse, but the change wasn't complete. The most likely reason is that you removed a program

or *Folders* (in 2000 and Me), or *Start•Find•Files* or *Folders* (in 98). Enter the error-message text in the "file name" field (the exact name of the field varies from version to version of Windows), select your hard drive in the 'Look in' menu, and click *Search* or *Find Now*. If the file appears in the results window, make note of the file's path; you have the option of fixing, rather than deleting, the file's automatic loading tendency. I'll discuss that later.

Whether or not the file is still on your hard drive, you should research this mysterious program. If you enter the file name in Google or your favorite Web search engine, you're almost certain to find some useful information about the program that it's associated with. If you don't find anything, there's a very good chance that the file's name was randomly generated (especially if it more closely resembles an eye chart than a word or a name). If that's the case, the troublesome file is

almost certainly related to a virus or similar pest. But don't rejoice too much over having figured out that it's part of an uninvited guest; even if the file is no longer there or if you delete it now, a copy could very well still be lurking on your hard drive under another randomly generated name. Make sure your antivirus and anti-

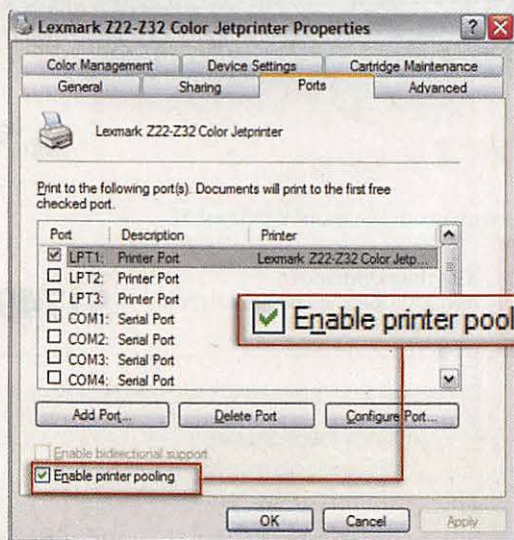
spyware programs are up-to-date, and use both programs to scan your hard drive.

Whether or not the file is malicious, chances are you're better off not loading it. After all, your computer works fine without it. Either way, you'll still want to stop that error message. To do so, select *Start•Run*, type **msconfig**, and then press **<Enter>**. Click the *Startup* tab. (Windows 2000 lacks the System Configuration utility, so with this OS you should use Mike Lin's free alternative, Startup Control Panel, which is available for download at [find.pcworld.com/46260](http://find.pcworld.com/46260).) If you see a listing for the error-producing file, delete it.

If no such listing appears, try cleaning the Registry. Stand-alone Registry cleaners like Easy Desk Software's RegRepair (free trial, \$30 to keep; [find.pcworld.com/47162](http://find.pcworld.com/47162)) can do the job with one click; alternatively, you can use Windows' own Registry Editor to fix the glitch. Start by backing up your Registry (for instructions, visit [find.pcworld.com/47160](http://find.pcworld.com/47160)). With your backup in place, select *Start•Run*, type **regedit**, and press **<Enter>**. In the Registry Editor, press **<F3>**, enter the file name in the 'Find what' field, and press **<Enter>**. If you find an entry for the file in the Registry, delete it, unless the path described in the entry points to the same folder as the file that you found during your previous Windows search. In that case, leave the Registry entry alone.

If you're using Windows 2000, type **regedit32** to open the Registry Editor. To launch the search, select *View•Find Key*. You will have to search separately in each of the five windows.

So what should you do if the problematic program is one that you want to continue to autoload? Your best bet is to follow the instructions above for cleaning the program from your Registry, and then to try reinstalling it. This solution is simpler and surer than trying to fix the existing file. Browse to [find.pcworld.com/47568](http://find.pcworld.com/47568) to read my instructions for clearing all the cobwebs out of Windows, and visit [find.pcworld.com/47570](http://find.pcworld.com/47570) to see a list of freeware and shareware system utilities, including several of PC World editors' favorite Registry cleaners, uninstallers, and hard-disk scrubbers.



**FIGURE 1: SEND FILES FROM OLD apps to a USB printer via the printer-pooling feature in Windows XP and 2000.**

that Windows is still attempting to load.

First, grab a pencil and paper and boot your computer. Write down the full text of the error message; the correct path and file names are especially important. Also, make sure that you get the spelling right.

Once you're back in Windows, select *Start•Search* (in XP), *Start•Search•For Files*

that Windows is still attempting to load. First, grab a pencil and paper and boot your computer. Write down the full text of the error message; the correct path and file names are especially important. Also, make sure that you get the spelling right. Once you're back in Windows, select *Start•Search* (in XP), *Start•Search•For Files*



## FROM OLD APP TO USB PRINTER



I HAVE AN OLD DOS-based database program that will print only to the LPT1 or LPT2 ports on my PC. My new printer is strictly USB. How do I print to it from my database application?

Walter Mueller, Regina, Saskatchewan

I'M BECOMING MORE and more convinced that you simply should not buy a printer that doesn't include a parallel port. USB printers have too many limitations (see [find.pcworld.com/47168](http://find.pcworld.com/47168) for another example). Fortunately, there's a work-around for this problem in Windows XP and 2000 that involves printer pooling, which is meant to allow one logical printer to print to two actual devices.

First, you'll need to open the Printers applet in Control Panel: In Windows XP, select *Start • Control Panel • Printers and Other Hardware* (if you are using XP's Categories view), *Printers and Faxes*. If you use Windows 2000, click *Start • Settings •*

*Printers*. Now right-click your printer's icon, and select *Properties • Ports*. Check *Enable printer pooling* near the bottom of the dialog box; then select *LPT1*: at the top of the port list, and click *OK* (see **FIGURE 1**).

Windows 98 and Me have what appears to be a built-in remedy—an option named *Capture Printer Port* on the Details tab of each printer's Properties dialog box. Unfortunately, this function works only for printers on a network, not for those connected directly to your computer.

## SPYBOT VS. THE DSO EXPLOIT



EVERY TIME I SCAN my PC for spyware using Spybot Search & Destroy, the program lists DSO Exploit as a problem. I instruct the program to fix the entry, but the next time I run Spybot, the same thing happens. What's going on?

Christopher McHenry, Portland, Oregon

YOU'RE ACTUALLY contending with two bugs. The first one, which Microsoft has addressed, resided in Windows. The sec-

ond one, as I write this, is still in Spybot.

Let's start with the Windows problem. The DSO Exploit was a security gap in Internet Explorer that allowed a malicious program to take over your PC. Microsoft plugged that gap, and if you use Windows Update to keep Windows nicely patched (as you should), it's no longer an issue.

Unless you're using Spybot Search & Destroy, that is. When you scan with this popular spyware-detection utility, it looks for the DSO Exploit. If it finds it, the program alerts you and gives you the option to fix it—as it should (see **FIGURE 2**).

Unfortunately, due to a bug in Spybot, the program doesn't delete the exploit, so it continues to tell you that the bug needs fixing. And it will still tell you this after Windows Update has plugged the hole.

In short, if Windows is updated, you don't have to worry about the DSO Exploit at all. Just ignore Spybot's warnings. The program's designers at Safer Networking know of the problem and plan to ►

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To: All persons or entities in the United States who purchased between December 1, 1999 and March 31, 2005 a D-Link Systems, Inc. wireless product. This Notice contains important information that may affect your legal rights. This Notice is only a summary of the detailed "Official Court Notice of Pendency and Proposed Settlement of Class Action." You may obtain the detailed Notice, which explains your rights and gives instructions on how to claim settlement benefits if the settlement is approved, from the following website: <http://www.d-link-resolution.net> (hereinafter "the Website"). To determine if the D-Link wireless product you purchased is covered by the settlement, read the list of "Covered D-Link Wireless Products" in the Notice on the Website.

**Description of the Actions:** In a coordinated action titled *Wireless Products Cases*, Case No. CJC 04-004381 (San Francisco Superior Court), plaintiffs allege that D-Link's advertising of the Covered D-Link Wireless Products is false and misleading. D-Link has denied and continues to deny these allegations and has asserted a number of affirmative defenses. You are a member of the Settlement Class if (1) you purchased a Covered D-Link Wireless Product at any time from December 1, 1999 through March 31, 2005, (2) you resided in the United States at the time of the purchase, (3) you purchased the Covered D-Link Wireless Product at a location within the United States, (4) you purchased the Covered D-Link Wireless Product new or refurbished (i.e., not second hand) from an entity that regularly sells/sold such devices or items, and (5) you did not purchase the Covered D-Link Wireless Product for resale to others.

**Description of Settlement:** If the court approves the settlement, each member of the Settlement Class who submits a valid proof of purchase by November 13, 2005 for a Covered D-Link Wireless Product is eligible to purchase a new D-Link wireless product from D-Link's online store at a 15% discount. To be eligible, you must visit the Website, and follow the instructions for making a claim. If the claim is timely and valid, you will be sent via e-mail a Promotional Code that will allow you to receive the 15% discount at the point of sale once the settlement becomes final in the courts. See the Notice on the Website for information about other terms of the Settlement (on file with the Court for your review), such as the Claim and Redemption Periods, charitable donation, changes to product packaging and advertising, and attorneys' fees and costs.

**Requests for Exclusions and Objections:** If you fit within the definition of the Settlement Class and you agree with the settlement, you need do nothing at all to indicate your consent. Any requests for exclusion from the settlement must be sent by mail to Weiss & Lurie, Jordan L. Lurie, 10940 Wilshire Blvd., 24th Floor, Los Angeles, CA 90024 and Morrison & Foerster, Lori Schechter, 425 Market St., San Francisco CA 94105, and **postmarked no later than June 30, 2005**. The procedures, rights, and effects of requesting an exclusion are explained in the detailed Notice on the Website. Any objections to the settlement must be in writing and mailed or hand-delivered to the Clerk of the Court, Superior Court of California, County of San Francisco, Civic Center Courthouse, 400 McAllister Street, San Francisco, California, 94102, must identify the case as *Wireless Products Cases*, Case No. CJC 04-004381 (San Francisco Superior Court), and must be received by the Court no later than **June 30, 2005**. You must also mail copies of your written objections to the counsel listed above, **postmarked no later than June 30, 2005**. The procedure for making an objection is explained in the detailed Notice.

**Hearing:** A hearing will be held before the Honorable Richard A. Kramer, Superior Court of California for the County of San Francisco, located at Civic Center Courthouse, Department 304 400 McAllister Street, San Francisco, CA, on July 27, 2005 at 1:30 p.m. The purpose of the hearing is for the judge to decide, among other things, (1) whether the proposed settlement is fair, reasonable and adequate, (2) whether the Settlement Class should be certified, (3) whether the Court should enter the proposed final judgment, and (4) whether the application of Class Counsel for an award of attorneys' fees and expenses should be granted. **PLEASE DO NOT CONTACT THE COURT OR THE CLERK'S OFFICE FOR INFORMATION.**



release a fix. (Note: As we went to press, Safer Networking claimed that it had set existing Spybot versions to ignore the bogus DSO Exploit return as of the February 16, 2005, program update. See [find.pcworld.com/47572](http://find.pcworld.com/47572) to read Safer Networking's explanation of the problem.)

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IS THERE any way for me to back up the CMOS chip on my PC's system board? Its data, some of which is necessary to boot a computer, will disappear if the motherboard's battery runs out.

*Charles Ruggles, Phoenix*  
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The CMOS backup is

in WinRescue's Boot Disk feature. Begin by opening WinRescue and clicking the *Boot Disk* tab. If you're running Windows 2000 or XP, select *DOS Boot Disk* from the pulldown menu (the other option produces a disk identical to the emergency boot floppy I described in my November 2003 *Answer Line* column, "What to Do When Windows XP or 2000 Won't Boot"; you can jump to that column at [find.pcworld.com/47166](http://find.pcworld.com/47166)). Click the *Boot Disk* button and then follow the prompts.

If that fateful day ever arrives when you find that you need to restore your CMOS, all you'll have to do is boot to the floppy disk that you just created and then click the *Restore CMOS* button.

Send questions to [answer@pcworld.com](mailto:answer@pcworld.com). *Answer Line* pays \$50 for published items. See [find.pcworld.com/31577](http://find.pcworld.com/31577) for more *Answer Line* columns. You'll find Contributing Editor Lincoln Spector's humorous and other writings at [www.thelinkinspector.com](http://www.thelinkinspector.com).

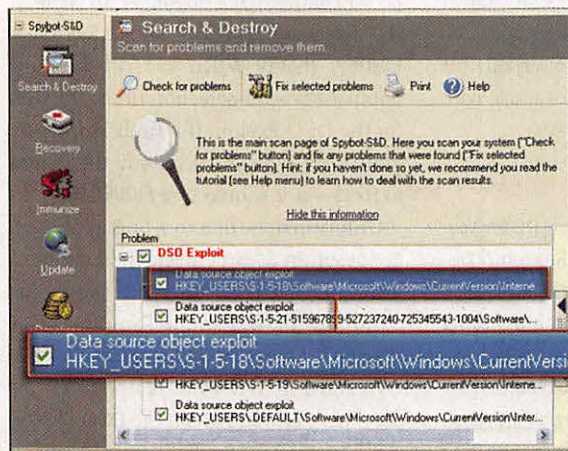


FIGURE 2: WHAT IS THAT EXPLOIT? This spyware scan entry may be a security hole, but it's probably just a bug in Spybot.

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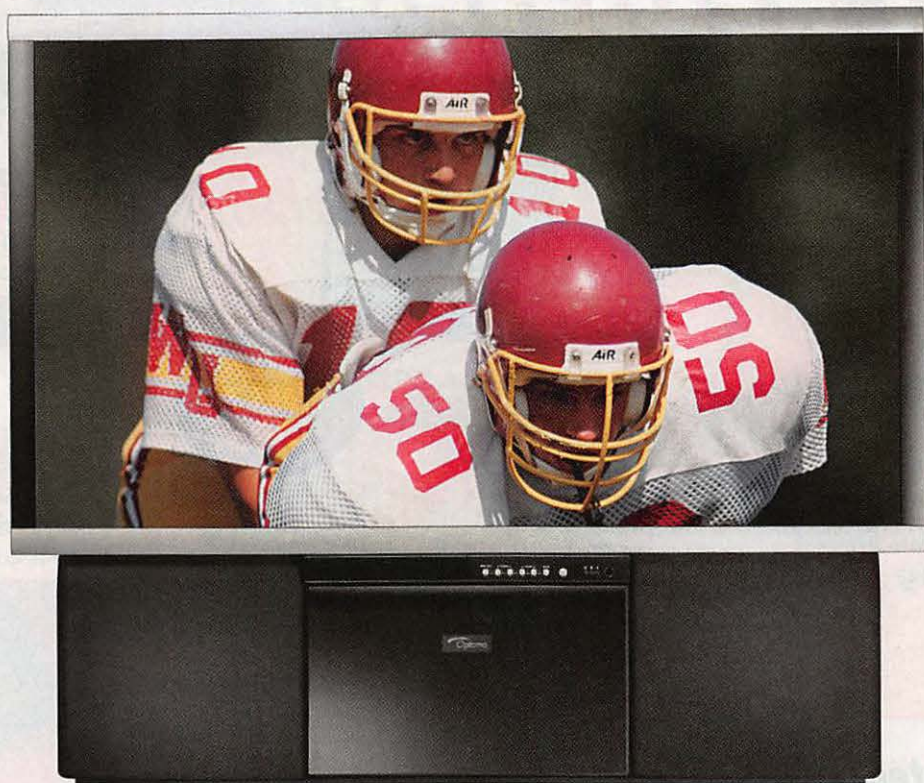
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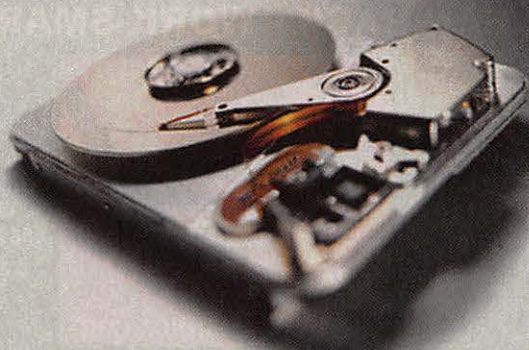
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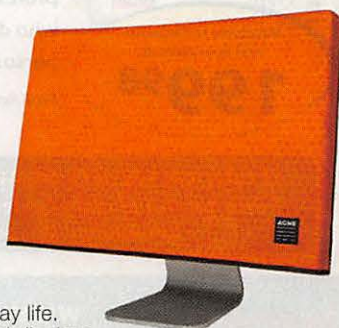
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## Plug and Play? No Way!

IT WON'T SELL AS well as those spring-break videos, but someone should offer a series called "Connectors Gone Wild!" Just when the industry seemed to be embracing genuine standards like USB and FireWire, pro-

prietary connectors as long-lived and useful as moths are back with a vengeance.

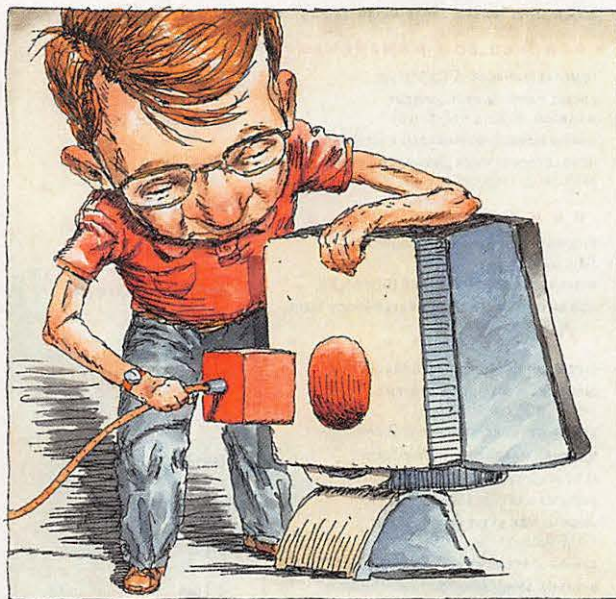
Take my PalmOne Treo 600: When I bought the thing in 2003, I ordered a clever folding keyboard that attaches to the connector on the bottom. But in a policy that can be viewed only as planned obsolescence, PalmOne installed an incompatible connector on the upgraded Treo 650. If I want the new model, I'll have to buy a "universal" infrared keyboard (no doubt the day before the company releases a Treo without an IR port). Cue up "Won't Get Fooled Again."

Then there's my wife's not-that-old Sony notebook. When the power brick died, Sony couldn't sell us a replacement, thanks to a plug that evidently never appeared on another product. I finally found a big, ugly, slightly scary third-party unit that won't work unless you insert it just right.

You may think that you're playing it safe with a "standard" connector, but new tricks can still turn your peripherals into worthless bits of wire. The other day I was testing a new cell phone and decided to try it with a headset I like. I popped open a cover on the phone marked with a head-phone icon, and found not the familiar round connector, but something that

looked more like a Mini USB jack. That's one phone I'm not likely to buy.

Even USB isn't truly standard. When I tested Sony's PlayStation Portable, which comes with a Mini USB jack but no cable, I ransacked the house and found lots of



**Haven't connector designers ever heard the word 'standard'?**

USB cables equipped with various small connectors. But only one fit the PSP.

When it comes to arcane power connectors, phones and cameras are among

the worst offenders. As manufacturers provide juice to slimmer and slimmer products, every model seems to use a different plug. Occasionally I consider buying a "universal charger" designed to help you avoid toting around multiple power bricks. But every time I search for one, something I own turns out to be off the charts. So much for universality.

At the AC prongs, things are improving. Increasingly, power bricks and battery chargers are designed to take up only one power-strip socket. But the other end of the wire is a different story.

A round plug for the cable that comes from the power brick eliminates any chance that you'll put it in the wrong way. That's brilliant design. So why are some new plugs square with odd flanges, giving you just a 25 percent chance of orienting things properly the first time?

All this makes you want to cut cords and cables entirely and demand wireless Bluetooth connections for everything. But I don't think a power charger based on Bluetooth is likely to appear anytime soon. Besides, the moment it hit the market, a bunch of clever engineers would proudly reveal something "even better"—and totally incompatible. ■

*Contributing Editor Stephen Manes is cohost of PC World's Digital Duo ([www.pcworld.com/digitalduo](http://www.pcworld.com/digitalduo)), a weekly series broadcast on public TV stations throughout the country.*



Volume 23, number 6. *PC World*® (ISSN 0737-8939) is published monthly at \$24.95 for one year (12 issues), \$49.90 for two years (24 issues), \$74.85 for three years (36 issues) by PC World Communications, Inc., 501 Second Street #600, San Francisco, CA 94107. Foreign orders must be prepaid in U.S. funds with additional postage. Add \$12 per year for Canada; add \$30 per year for airmail for all other countries. Canadian GST Registration #R12469680. Periodicals Postage Paid at San Francisco, California, and at additional mailing offices. Canada Post Publications Mail Agreement #2493993. Returns: 4960-2 Walker Road, Windsor ON N9A 6J3. POSTMASTER: Send address changes to *PC World*, Subscription Dept., P.O. Box 37571, Boone, IA 50037-0571. Editorial and business offices: 501 Second St., #600, San Francisco, CA 94107, 415/243-0500. Copyright © 2005, PC World Communications, Inc. All rights reserved. The trademark PC World is owned by International Data Group and used under license by PC World Communications, Inc. Technology Advice You Can Trust®, PC World Top 100®, Top 100®, PC World Top 100®, Top 100®, and Consumer Watch® are trademarks of International Data Group, Inc., and used under license by PC World Communications, Inc. Printed in the United States.



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- Up to 100 GB<sup>2</sup> 5400 rpm SATA hard drive
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- Up to DVD±RW drive<sup>4</sup>
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- ErgoBright™ technology
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- Port replicator for \$199<sup>99</sup>
- Additional battery for \$199<sup>99</sup>

**\$1,419<sup>99</sup>**

Leasing starts as low as \$38<sup>99</sup> per month<sup>9</sup>

#### UPGRADES

- 3-year On-Site Service plus Accidental Damage Protection<sup>8</sup> for \$315<sup>99</sup>
- Port replicator for \$199<sup>99</sup>
- Large-capacity battery for \$100<sup>99</sup>

**\$999<sup>99</sup>**

Leasing starts as low as \$26<sup>99</sup> per month<sup>9</sup>

#### UPGRADES

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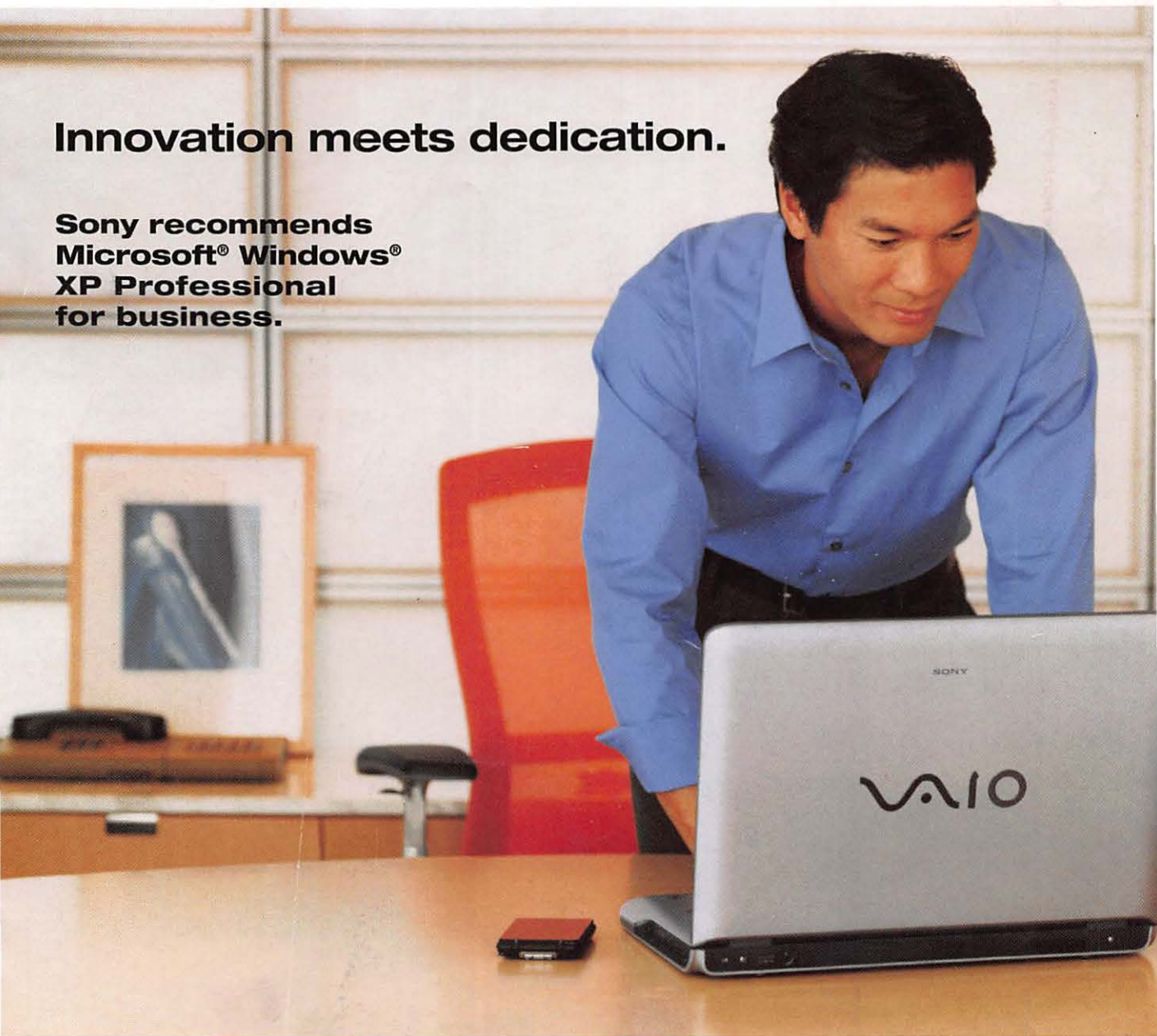
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