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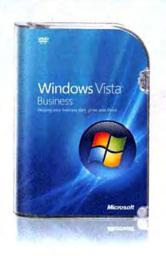1.800.320.5914 pcmall.com

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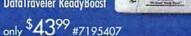
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Real Obstacles for the Virtual PC

Virtualization could transform computing forever. But only if OS companies let it.

WEIRD BUT TRUE: One of my favorite computers right now isn't real. It's the virtual machine that lets me run Windows applications on my Apple MacBook, via the amazing software known as Parallels Desktop. Thanks to Parallels and a copy of Windows XP, I'm merrily writing this column in my word processor of choice (Word 2007), even though it's not, in theory, compatible with the operating system I'm using (OS X). Yup, computing miracles *do* happen.

There's more. When I wanted to check out Ubuntu Linux, I used Parallels to install that OS in a virtual machine on a ThinkPad running Windows XP, allowing me to venture into Linuxland without so much as rebooting. And when I recently experimented in possibly dicey ways with Windows settings, I did so in a second, virtualized installation of Win XP on the ThinkPad, safe in the knowledge that no amount of messing around with that copy of XP could damage my main Windows installation.

A recent confluence of events is helping virtualization—which has been around for decades—go mainstream. Both Intel and AMD, for instance, have built support for it into their new CPUs; for the first time, programs such as Parallels and VMware run briskly enough that you just might forget you're working in a virtual environment. And Apple's move to Intel CPUs makes Parallels' near-seamless mixing and matching of OS X and Windows possible. In fact, virtualization is improving at such a rapid clip that it's fun to think about where it's headed. What if Parallels-style mixing and matching of apps were enabled at the OS level, so that every computer user could use any program—be it for Windows, Mac,

or Linux—without a second thought? What if a 'Launch in Virtual Machine' Windows menu item let you run iffy programs in a way that prevented them from wreaking havoc? What if the next big Windows upgrade loaded older programs in a virtual machine, ensuring backward compatibility while freeing Microsoft to rethink the OS from the ground up?

The thing is, these what-ifs assume that OS companies will make them happen. But neither Microsoft nor Apple seems to be a wholehearted fan of virtualization.

Apple loves the fact that Parallels lets you run Windows in OS X—so much so that the "I'm a Mac/I'm a PC" guys chattered about it in an ad. But OS X in Windows on a non-Apple PC? Given that Apple's business model assumes the company will sell a computer for every copy of OS X, it may never sign off on that scenario.

And then there's Microsoft, whose end-user license agreements for most Vista versions forbid you to run the OS inside a virtual machine. Only Vista Ultimate (which has a list price of $400) and Vista Enterprise (which isn't even sold as a retail product) have EULAs that are virtualization-friendly.

From a technical standpoint, all Vista editions are perfectly capable of being virtualized; it's Microsoft policy that's anti-virtualization, not its products. Scott Woodgate, a Vista director at the company, told me that it's fine by Microsoft if the PC enthusiasts and businessfolk who buy Vista Ultimate and Enterprise go virtual. But the company wants to discourage casual PC users from trying virtual computing just yet, due to potential security risks with CPU-level virtual machines as implemented by Intel and AMD. End result: It has made virtualization pricey.

I have a hard time entirely reconciling that philosophy with the fact that Microsoft offers its own competitor to Parallels and VMware (the appropriately named Virtual PC) for free, and distributes it on a section of its site that's devoid of scary warnings about security threats.

Still, talking to Woodgate left me cautiously optimistic. The company is working with chip companies on security concerns. And long term, he said, "Microsoft is a firm believer in virtualization." That's good to hear: A lot of us Microsoft customers firmly believe in it, too—and we want future versions of Windows to harness every bit of its awesome potential. ∎

Harry McCracken is editor in chief of PC World. Read his blog at blogs.pcworld.com/techlog.

NEWS & TRENDS

EDITED BY EDWARD N. ALBRO

Real-World Vista

WITH THE NEW VERSION OF WINDOWS FINALLY OUT, EARLY USERS SAY THEY'RE BEDEVILED BY HARDWARE AND SOFTWARE PROBLEMS—BUT SOME LOVE THE OS ANYWAY. BY DAN TYNAN

LAST FEBRUARY, BRYCE Parkhurst brought home a new Toshiba Satellite notebook with Windows Vista Home Basic installed. The 33-year-old Easton, Pennsylvania, circuit designer bought the PC to enjoy music, but it soon hit sour notes. Everything seemed to run a little slower under the new operating system. His Alesis Photon X25 MIDI controller no longer worked. His favorite DJ software didn't function properly either; when he tried to quit the program, Vista rebooted into Safe Mode. Any system change instigated a seemingly endless series of "Accept or Cancel" messages from Vista's User Account Control feature.

After five days Parkhurst had had enough. He removed

BRYCE PARKHURST, 33, of Easton, Pennsylvania, bought a Toshiba Satellite notebook with Vista Home Basic to enjoy music, but it soon hit sour notes.

Vista and installed Windows XP. Since then, his new notebook has been trouble-free.

In contrast, Bernard Mongeon is quite pleased with Vista Ultimate, despite problems getting it to work with the

scanner and security software on his three-year-old desktop. The 54-year-old weather forecaster in Kingston, Nova Scotia, accepts such glitches as a normal part of moving to a new operating system.

Mandar Jadhav, an 18-year-old Rutgers University student, is in between. He loves the slick 3D look of Vista Premium, but is pained by the software and hardware incompatibilities he encountered when he upgraded his nearly new Dell laptop.

These three users embody the disparate views of Vista during its first 30 days in the field. In *PC World*'s online survey of nearly 1000 early Vista adopters, slightly more than a third said they were very satisfied with the new OS. Another third reported being satisfied overall, but not exactly wowed; almost one in four were unimpressed.

And regardless of their overall verdict, a majority—some 61 percent—reported at

AERO: VISTA'S BEST FEATURE

VISTA'S AERO ENVIRONMENT is far and away the biggest improvement over XP, users say. But only about half of those surveyed say Vista performs noticeably faster.

FEATURE	Percentage that rated Vista much better than XP	Percentage that rated Vista somewhat better than XP
Interface	54%	29%
Security	32%	39%
Navigation	31%	35%
Networking	31%	28%
Performance	25%	26%

least one hiccup in getting Vista to work with their existing hardware or software.

APPEARANCE COUNTS

THE ONE THING just about everyone agrees on: Vista looks great. More than 80 percent of survey respondents said the new interface is an improvement. The translucent Aero environment available in the Premium and Ultimate versions may be one of the few features that live up to Microsoft's "The 'Wow' starts now" marketing campaign.

But not everyone has been able to enjoy Vista's beauty. One out of seven Vista users in our survey had trouble obtaining video drivers capable of handling Aero and DirectX 10, which allows for faster, more realistic gaming. (At press time, no DX10-capable games had been announced.)

Sergio Yanez, a 33-year-old banker in Jersey City, New Jersey, complains, "My nVidia GeForce 8800GTX [video card] dropped the Aero interface constantly when using the [beta] drivers." He says this behavior usually showed up when he was using a DivX conversion program.

In fact, graphics card problems topped the list of hardware issues with Vista, followed by sound card troubles and Webcam glitches.

nVidia issued certified Vista drivers for boards based on its GeForce 6– and 7–series chips on January 30, but it did not distribute final drivers for its high-end GeForce 8800 until about three weeks later. The driver delays and glitches even prompted disgruntled nVidia fans to set up a protest Web site. (Rival ATI, though, also needed an extra three weeks to provide drivers for several of its Radeon cards.)

MOST PROBLEMATIC PRODUCTS

HALF OF THE surveyed users had at least one program that wouldn't work under Vista, while more than a third of users surveyed reported at least one hardware problem.

HARDWARE		SOFTWARE	
Graphics board	38%	Antivirus	37%
Sound card	28%	Firewall	17%
Webcam	17%	Media player	17%
Wi-Fi adapter	15%	System utility	15%
Media card reader	10%	Web browser	13%

The reason? Building Vista drivers is more complex than for XP, requiring a new model, says Dwight Diercks, nVidia's vice president of software engineering. "It changes how basic display is handled, and it removes older driver portions of the code that have been there since NT 4.0 days."

PAINED ACCESS

ONE ALMOST UNIVERSALLY reviled Vista feature is its User Account Controls. In XP, installing software and making other system changes was much easier for users; under Vista's default settings, you must verify every system change—a procedure that helps prevent rogue software from installing itself but puts a burden on users. Many, like Eirik Lundmark, have simply turned off UAC (the only thing you can do, as it's not a configurable option) and are taking their chances.

"I'm an experienced user, but UAC wouldn't allow me to create a new folder in Program Files," says Lundmark, a 22-year-old student in Norway. So he finally shut it off.

Ironically, Vista's added ▶

Product Pipeline

CELL PHONE TV: Verizon Wireless has become the first major carrier to provide true broadcast-style TV on a cell phone. The company's V Cast Mobile TV (find.pcworld.com/56799) features *CSI: Miami, The Daily Show, The Tonight Show*, and other popular programs on eight 24-hour channels including CBS Mobile, ESPN, and Comedy Central. Launching in 19 cities with monthly charges of $15 to $25, the service employs technology from Qualcomm-owned MediaFlo and requires a compatible phone such as Samsung's SCH-u620 (shown above). Cingular has also signed a deal to deliver MediaFlo service to its customers.

PHOTOSHOP ONLINE: Graphics giant Adobe plans to make a basic version of its flagship image editing software, Photoshop, available as a free, Web-based application later this year. In public beta at the photo-sharing site PhotoBucket (www.photobucket.com), Photoshop's Web version won't be as full-featured as the desktop application, but it won't require a software installation, either.

security measures also make it harder for some legitimate programs—particularly security software—to work correctly. Half of the survey respondents had trouble getting applications to work with Vista; virus scanners, firewalls, and media players had the most difficulty.
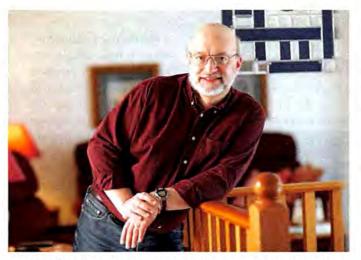
For example, after he upgraded to Vista, John Ohannessian, a 59-year-old computer consultant in Louisville, Colorado, couldn't reinstall Zone-Alarm Security Suite because it wasn't compatible with the new OS. He blames software firms for not having products ready when Vista shipped.

ZoneAlarm plans to release a Vista-friendly version of its suite in the spring, says Laura Yecies, general manager of the company's consumer and small-business division. Users who buy ZoneAlarm for XP today will receive free upgrades when the Vista version is available, the firm says.

Yecies says late changes to key APIs (protocols that apps use to talk to the OS), the need to integrate with Windows Security Center, and the complexity of security software all contributed to delays.

BERNARD MONGEON IS quite pleased with Vista Ultimate, despite problems with the scanner and security software on his three-year-old desktop.

Other security software vendors, such as McAfee and Symantec, also failed to make Microsoft's Vista-certified software list, released in February. Representatives for both firms say that their software is compatible with the 32-bit version of Vista, and that 64-bit security software will be available later this year. In contrast, security vendor Trend Micro issued a Vista-certified suite by the launch date.

At press time, more than 30 days after Vista shipped, Apple had released a free upgrade to iTunes that should work with most 32-bit editions of the OS, but the company warns that some users could still encounter prob-

lems with data corruption.

Other users may have to pay for the privilege of running their favorite apps. For example, QuickBooks 2006 and earlier versions won't work because of changes in the way Vista handles administrative rights. Intuit spokesperson Rachel Euretig says it isn't practical to update older products because of the big changes Microsoft has introduced. QuickBooks users with Vista PCs must upgrade to Quick-Books 2007, which is fully compatible with the new OS.

Ed Bott, author of *Windows Vista Inside Out* (Microsoft Press, 2007), says vendors who didn't always follow the rules in programming for XP

are paying the price with Vista—and so are their consumers, who must now upgrade even if they don't need or want the new product version.

HOLD OFF?

OFTEN, WHERE USERS end up with Vista depends on where they started. Respondents who bought new systems with Vista were less likely to report problems than those who upgraded older PCs. Obscure or less popular peripherals and apps, says Bott, also tend to have more trouble than mainstream ones.

Even people who say they like Vista don't necessarily recommend you rush out to buy it. Most advise waiting for more drivers and the first service pack to arrive before considering an upgrade, or waiting until you need a new PC.

Vendors say Vista's real benefits will start to appear after the familiar, awkward transition period is over (say, about the time SP1 comes out).

"In a few months' time, all of this will be a distant memory, and users will enjoy exciting games and features in Vista that redefine computing and entertainment on the PC," says nVidia's Diercks.

Users, however, aren't that impressed. "I consider Vista an evolution of Windows," says Jim Middleton, a 55-year-old IT analyst in Halifax, Nova Scotia, who's "somewhat satisfied" with Vista. "It takes advantage of modern hardware, supports new standards, etc. But there is nothing 'must have' in the OS. Given Microsoft had five years to work on this thing, I think they could have done a much better job."

WEB RESOURCES

VISTA 911: WHERE TO GO FOR HELP

• Check Microsoft's list of Vista-certified applications, updated regularly, at find. pcworld.com/56793. Microsoft also offers a searchable database of compatible hardware at find.pcworld.com/56794 (the site works only with Internet Explorer 6 and above).

• Get Vista driver downloads from nearly 30 manufacturers, all free, from utilities vendor Radarsync (www.radarsync.com/vista).

• For a convenient user-generated list of Vista-compatible applications, browse over to the IEXbeta Wiki (find.pcworld.com/56795).

• The HowToGeek blog (find.pcworld.com/56796) provides easy Vista usage tips.

• For the inside skinny on IE 7 issues and workarounds, check in with Sandi Hardmeier, long a part of Microsoft's Most Valuable Professional program, at find.pcworld.com/56797.

MOBILE COMPUTING

Windows Mobile 6: New E-Mail Options

HANDHELD OPERATING SYSTEM ALSO ADDS NEW EDITING POWERS IN CORE OFFICE APPS.

WINDOWS MOBILE 6—Microsoft's generally modest update of its operating system for handheld devices and smart phones—will debut by midyear with enhancements for e-mail and editing of Office documents.

Previously known by the code name Crossbow, Windows Mobile 6 simplifies e-mail account setup and also provides new shortcuts to a multitude of common e-mail management tasks such as replying to all or deleting a message.

You can flag messages more easily, as well as view a history of activity (calls and text messages) with contacts in your

NEW SHORTCUTS TO common tasks speed up e-mail management in Windows Mobile 6.

address book. In addition, you can read messages formatted in HTML, where applicable.

MOBILE OFFICE

THE THREE CORE applications in Office—Word, Excel and PowerPoint—more faithfully re-create and preserve desk-

top formatting in the new OS. And now you can edit data in an Excel spreadsheet (you still can't create formulas or new spreadsheets, though). Borrowing from Office 2007, the calendar has a vaguely ribbonlike interface that shows your free time. It also checks for schedule conflicts whenever you receive a meeting invitation.

Windows Mobile 6 supports some Windows Live services, including Windows Live Messenger. If your business works with Exchange Server 2007, you'll find some useful improvements, such as the ability to search your mail folder.

Microsoft says that people will be able to upgrade certain Windows Mobile 5 devices—like the T-Mobile Dash—to the new version. HP's first line of iPaq smart phones, the 500 series Voice Messengers, will be based on Windows Mobile 6.

Previous versions of Windows Mobile provided more functionality for Pocket PCs than for phones with keypads, but those distinctions are now largely gone. However, Microsoft will still offer two editions of Windows Mobile 6, based on a handheld's screen type: a standard version intended for devices that don't have touch screens, and Windows Mobile 6 Pro for devices equipped with touch screens and styluses.

—*Yardena Arar*

ULTRA MOBILE PCs

NEW FACE FOR TINY PCs

HIGH HARDWARE PRICES put a bit of a damper on the first generation of Ultra Mobile PCs. Despite this, Microsoft says it remains committed to the platform, and as hardware manufacturers work on new products, the software giant continues to improve applications for the devices. Here's a look at its most recent effort: a program launcher called "Origami Experience" included in the version of Windows Vista that runs on UMPCs.

—*Eric Dahl*

AN EVER-PRESENT Home button enables you to return to the main screen of Origami Experience, where you can choose to browse through your media or launch programs and favorites.

CRITICAL STATUS indicators are located on the title bar, making it easy for you to hop onto a wireless network without leaving the app.

WHEN YOU'RE VIEWING media, the edges of the screen become tabs that let you switch between your library and the Now Playing view.

CONTROLS FOR media playback are accessible from nearly every screen in Origami Experience, and the app remembers which media you were playing last, so you can easily pick up where you left off.

PORTABLE PC

Tech Innovations Fuel Low-Cost Laptop

STURDINESS AND SIMPLICITY ARE KEYS TO $150 NOTEBOOK FOR THE WORLD'S POOREST KIDS.

HOW DO YOU make a laptop that can tolerate sandstorms and monsoons, run on a car battery, and cost just $150? That was the challenge facing One Laptop per Child (www. laptop.org), a nonprofit group founded by MIT Media Lab veterans to get youngsters in developing nations online.

OLPC's XO notebook PC attains its ultralow price through a combination of innovative technology (such as its dual-mode LCD) and old-fashioned streamlining (it doesn't have a hard drive, and it uses a Linux-based operating system).

OLPC plans to start distributing 5 million XOs in July. As production ramps up, the price should approach the original $100 target, OLPC says.

—Tom Spring

DESIGN: THE XO'S case is made of 0.08-inch-thick plastic (standard laptops use a less sturdy 0.05-inch-thick plastic). Mesh network antenna "ears" double as covers for USB and audio ports.

UNDER THE HOOD: The XO has no moving parts; it relies on 512MB of flash and 128MB of RAM. Heat from its 366-MHz AMD Geode CPU dissipates via the keyboard and display.

WIRELESS: THE BUILT-IN 802.11b/g Wi-Fi allows XO units to function as mesh network nodes that can connect and communicate with other laptops even when no link to the Internet is available.

DISPLAY: A SWIVELING lid with a 7.5-inch LCD screen has a latch that can lock it against the keyboard to turn the XO into an electronic book reader. The display has a high-resolution black-and-white mode for easy reading in direct sunlight, and a back-lit, lower-resolution color mode.

Antennas

Audio ports and one USB port

Two USB ports under antenna

Microphone

Video camera

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Game pad

Power on/off button

Battery indicator

Keyboard LEDs

Directional pad

Back-light control

OPERATING SYSTEM: THE XO's Linux-based operating system can run only software that isn't hobbled by the notebook's storage and memory limitations (see "Under the Hood," above center). Open-Office, for example, can't run on the XO—but the XO does come with a version of the Opera Web browser.

Touchpad mouse

BATTERY: THE XO consumes just one-tenth the energy of a standard laptop. Powered by a nickel-metal hydride battery, the XO can run for 3 to 22 hours on a charge from a car battery, a foot pedal, a pull string, or a conventional wall outlet.

INPUTS: THE RUBBER keyboard is sealed to keep out dirt and water. In addition to the keyboard, the XO's inputs consist of a touchpad mouse (below the keyboard), a game pad (at lower right of screen), and a directional pad (at lower left of screen).

PHOTOGRAPH: MIKE MCGREGOR

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YOU MAY BE carrying a new type of credit card that can transmit your personal information to anyone who gets close to you with a scanner.

The new cards—millions of them have been issued over the past year—use RFID, or Radio Frequency Identification, technology. RFID allows scanners to use radio signals at varying distances to read information stored on a computer chip.

According to a study by researchers at the University of Massachusetts and at security companies RSA and Innealta, many of these cards will transmit your name, the credit card's number, and its expiration date (but not the three-digit security code) unencrypted to anyone nearby with an RFID scanner. (To see the full report, go to find. pcworld.com/56646.)

SWIPE AND PAY

RFID IS WIDELY used to track shipments and inventory. In credit cards, it allows customers to swipe the cards past readers in such establishments as McDonald's restaurants and CVS pharmacies, making for quick and easy transactions. Visa says it has distributed over 6 million "contactless" cards worldwide, and the UMass study estimates that at least 20 million exist, with the total growing rapidly.

In an e-mail, one of the UMass researchers, Kevin Fu, wrote that "in

our collection of approximately 20 cards, the vast majority revealed [the credit card holder's] name, CC number, and expiration" when the researchers scanned them with a commercial RFID reader they had modified to work with such cards. The cards in the sample came from American Express, Master-Card, and Visa, and had been issued by several major banks.

The credit cards use an encrypted security code to verify a transaction, which can protect against certain types of fraud—but not against someone who pulls the name and number from a card and uses the information to make online purchases, for instance. As added protection, Visa has begun requiring that banks not issue cards that transmit the cardholder's name, according to Brian Tripplett, the company's senior vice president of emerging product development (previously Visa only suggested this). Cards issued by American Express after this February also do not

EMBEDDED COMPUTER CHIPS allow for reading a credit card's information from a distance.

send the name, according to a spokesperson. MasterCard did not respond to *PC World*'s requests for information.

According to American Express, for added security its

cards transmit a card number different from that displayed on the card. Visa's Tripplett says that the contactless-card standard has a shorter read range and communicates differently than does the simple RFID used for such purposes as inventory management.

DO YOU HAVE RFID?

HOW DO YOU tell if your card has one of these chips? You can see the actual chip in the American Express cards (pictured above). And Tripplett says that Visa contactless cards have a symbol: four vertical wavelike bands on the front or the back. But to know for sure, and also to know whether your card sends your name, you must call your bank (or American Express) and ask. You should also be able to request a card that comes without the

contactless technology if you prefer, or at least one that doesn't transmit your name.

Also, you can block RFID signals with a "Faraday cage," which uses a metal mesh or casing. For instance, at ThinkGeek.com, you can buy an "RFID-blocking wallet" (go to find.pcworld.com/ 56780 for details).

Even for the first-generation cards that do send the holder's name, some other factors mitigate the risk.

First, while the researchers used a commercially available RFID reader, they made modifications to it that take "technical skills and know-how," Fu wrote. Also, the reader must be close to an RFID chip: Card specifications say only a couple of inches, but Fu points out that some research papers have put the maximum range at about 6 inches.

And most important, phishing, keyloggers, and other means of online ID theft are far too successful at this time for criminals to expend the effort required by this type of fraud. So the risk probably isn't significant—for now.

Major risk or not, however, credit cards should have included the recent security upgrades from the beginning. Whether the threat is large or small, adding another opportunity for ID theft where there simply doesn't need to be any clearly makes no sense.

—*Erik Larkin*

TO IDENTIFY VISA contactless cards, look for the wavelike symbol pictured here.

Fun 'n' Games 'n' Growth

Radical Entertainment scores a big hit with scalable AltiGen IP phone solutions

With a core value statement of "work hard, keep it fun," game maker Radical Entertainment is about as hip as a company gets. But when it comes to investing in technology to run the business, Radical is as value-conscious as a buttoned-down law firm. This is what explains the company's long-running love affair with AltiGen Communications.

It all started seven years ago when Radical went shopping for a new phone system that would be a good match for its swanky new headquarters in Vancouver, British Columbia. Eric Legaspi, director of information technology at Radical, said the company wanted a more flexible, function-rich and scalable phone solution than what they had.

Specifically, Radical wanted a solution that was compatible with the "let's try it ourselves" workforce culture, rather than a solution dependent on others to make changes.

The initial deployment of 140 analog phones from AltiGen would just be the beginning. "Right away we could see this was a good choice," Legaspi recalled. "The staff very quickly learned how to use advanced functions and make changes without any help from IT or some telecom provider."

A SCALABLE SOLUTION

Then a good thing happened at Radical, namely a lot of growth. In addition, AltiGen rolled out new IP phones, which greatly interested the innovative team at Radical. "But we didn't want to rip and replace our existing investment," Legaspi said. "And we did not have to. With very minor modifications, we are now up to 220 users reaping the benefits of an IP phone solution from AltiGen. I know with other solutions we would have ended up buying a lot of additional hardware. But AltiGen really keeps the customer in mind as it brings new technology to market, letting us keep our initial investments intact and building from them."

Today Radical is an enthusiastic user of AltiGen IP 710 VoIP phones. Legaspi said the Radical employees love the flexibility of taking their phones with them to any part of the building and "just punching in a couple digits to relocate themselves instantly." Plus, training staff on new features "is completely intuitive; really couldn't be easier."

Legaspi also lauded Optinet Systems, the AltiGen reseller partner, for consistently serving as a technology partner and adviser on phone technology and, in his words, "not just pushing the latest and greatest stuff at us to buy. We can continue growing this same system for at least another three to five years."

AltiGen's IP 710 Phone

"The ability of our AltiGen customers to continually build on their investments has made for excellent, long-term customer relationships at Optinet," said Denise Hodges, Optinet customer liaison. "And we know that new technology introduced by AltiGen always works the first time out of the box."

AltiGen Communications, Inc.

AltiGen Communications, Inc. (NASDAQ: ATGN) is a pioneering manufacturer of VoIP business phone systems and call center solutions. Founded in 1994, AltiGen was first to market with self-administration, and recently received *Internet Telephony Magazine's* 2005 Product of the Year for its IP 710 telephone.

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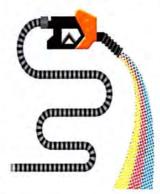
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PRINTS FOR PENNIES

The Buzz: Line up all the pages you could print using a gallon of ink, and you'd get almost as far as you would on a gallon of gasoline. Unfortunately, that gallon of ink would cost upwards of $3500. And you thought gas prices were out of control. Well, Kodak aims to change that with its new line of Easy-Share all-in-one inkjet printers that make use of cheaper pigment-based ink and special paper. Kodak says a color cartridge for one of the new models will go for $15, or a little over half the cost of most competing inks. That should drive the cost of printing a 4 by 6 photo down from 25 cents to around 10 cents. A

black ink cartridge good for 300 pages will retail for $10, compared with competing offerings priced at about $17.

Bottom Line: We'll have to wait and see how the output looks before we can render a final verdict; still, any news of cheaper printer ink—from a company as solid as Kodak, no less—is always welcome.

FUTURE TECH

WHAT'S NEXT FOR WINDOWS

HAVING FINALLY SHIPPED Windows Vista after years of development, Microsoft may feel its programmers are due a nice, long vacation. Hence, perhaps, the code names for the next major releases on the Windows road map: Fiji and Vienna. Microsoft won't say much about them, but observers point to Fiji as an interim release–either a service pack for Vista slated for the end of the year, or a larger Vista revision set for 2008. Vista's true successor won't arrive until 2009 at the very earliest, when Microsoft tentatively plans to roll out Vienna. According to Windows watcher Paul Thurrot, Vienna will be 64-bit only and should have a new Internet Explorer (designed by the team that created Office 2007's ribbon), an increased focus on virtualization, and (finally) the long-delayed file system update known as WinFS.

EXTERNAL PCI EXPRESS

The Buzz: Thanks to a new PCI Express spec, your next graphics card might reside in a box outside your PC. This February, the PCI Express group approved its first external cabling specification, which means system builders can bring the full speed of PCI Express x16 to external peripherals up to 10 feet away. With high-end graphics boards approaching 200 watts per card, the power and cooling demands they put on a system have become enormous. Gamers should quickly embrace this technology to move high-end graphics setups outside the PC case—even though such solutions could cost as much as $1200. External graphics boxes, with cooling and a power supply built in, should start arriving this year, yielding some interesting new designs.

Bottom Line: Imagine having a one-box PVR upgrade with a tuner and a hard drive, or a Mac Mini–size PC that morphs into a gaming rig, thanks to external graphics. External PCI Express should make both of them possible.

CAMPAIGNING 2.0

The Buzz: Bloggers, Internet polling, and MoveOn.org each had their

moment in the sun during 2004's presidential election. Three years later, it's clear the Internet will play an even larger role in the 2008 campaign. Staff bloggers now are nearly a requirement for presidential campaigns. And with socially filtered news sites and a burgeoning political blogosphere ready to seize on any misstep (and YouTube around to make the gaffes available in full audiovisual glory), the stakes at any public appearance have never been higher.
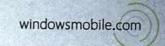
Bottom Line: If you thought political debate couldn't get any more high-minded, just wait till the first text message from a campaign leaks: OMG LOL, you call that policy?! ■

You can contact PC World Senior Editor Eric Dahl at eric_dahl@pcworld.com; visit find.pcworld.com/31643 to read additional Plugged In columns.

ILLUSTRATION: GORDON STUDER

LETTERS

VISTA TRIPS UP EARLY ADOPTERS **IMPROVE HOME NETWORK SECURITY** **THREE ACCOUNTS FILTER SPAM**

WINDOWS VISTA: NOT WORTH THE HASSLE?

I REALLY DO know better than to buy a new version of Microsoft Windows within the first year of its release ["Vista PCs Perform," *News and Trends*, March], but when my trusty notebook with Windows 2000 Pro started going south, I realized I had to buy a replacement. The day after Vista debuted, I went for a Gateway notebook with Vista Home Premium.

Hardware: Super. Software: Yuck.

Despite the notebook's having a gigabyte of RAM, a fast dual-core CPU, and a ton of hard-drive space, I had to turn off Vista's seductive Aero environment and all its CPU-intensive eye candy.

Next, I found that many of the productivity programs I depend on are broken. Trying to install them in some cases gummed up my new laptop. I have done several system restores as a result.

On the hardware side, my Bluetooth USB plug needed an upgrade, too. One was available, but the installer seemed confused as to whether I needed to have Bluetooth already running.

And my multifunction printer-scanner-copier-fax is, for now, just a printer.

Finally, the Macintosh/Windows TV ads have it right: Vista constantly asks you questions or permission to do, seemingly, even the smallest of chores. Vista acts like airport security on steroids.

Ronald M. Legro, Milwaukee

I RECENTLY PURCHASED a $900 multifunction color laser printer with software that's incompatible with Windows Vista. HP told me it might have the software for Vista—by the end of July this year.

Thomas J. Roveto
Haverhill, Massachusetts

MICROSOFT RECOMMENDS USING its Windows Vista Upgrade Advisor to see if your PC can run Vista. But the Advisor is not perfect. After using it and getting a go-ahead, I bought Vista Home Premium. Halfway through the setup, a message said my PC did not meet Vista's ACPI BIOS compatibility requirement.

My Toshiba laptop is only two years old! A Toshiba rep I talked to said they didn't know when or if the company would put out an updated ACPI for Vista. I've found others have the same problem.

Joe Mateus, New Bedford, Massachusetts
Editor's note: See this month's *News and Trends* story "Real-World Vista," on page 18, for results of *PC World*'s online survey of early Vista adopters.

"35 THINGS...": READER TIPS

TO THE ARTICLE "35 Things Every PC User Should Know" [March], I'd add a couple things on home network security:

1) Password-protect *every* account on every system—so even if an intruder breaks into your home network, he still can't access your data.

2) Have separate user and administrator accounts on every system, and give the user accounts only limited (or at most, power-user) privileges.

Richard Boylan, Holliston, Massachusetts

ON PAGE 77 the keyboard shortcut listed for opening the Start menu is the two-stroke <Ctrl>-<Esc>. But why not just tap the <Windows> key once—you will see that you achieve the same result.

Paul Bailey, Abilene, Texas ▶

HOT TOPICS IN FORUMS

Macs, YouTube, Registry Cleaners, Linux

HERE ARE SOME of the hot topics going on now in our forums. You can take part in our community discussions by heading to find.pcworld.com/55165.

SWITCHING TO MAC: If you want a machine that works and that you don't have to update with service packs and virus updaters and random driver installs ... try the Mac out. *—Skunky*

YOUTUBE: [With ads, user spam, declining usability, and other issues] no good news has come of Google's takeover of the popular video service.... I'll give YouTube a little while longer before I lose hope altogether.... But how much farther down the drain will YouTube continue to travel? *—AuroraManson*

REGISTRY CLEANERS: Cleaning the Registry in no way improves performance. Registry cleaners like CCleaner for the most part are safe, but ... if you think that they will improve performance, think again. *—Mastertech*

DELL TO SELL LINUX PCs: Very good! I run Ubuntu Linux on my machines, and I hate paying a useless Microsoft tax on a new PC. Hurray for Dell! *—pjotr123*

CONCERNING THE INSTRUCTIONS for Internet Explorer 7 in the chart "Don't Leave Browsing Tracks" on page 80: Clicking *Tools•Delete Browsing History•Delete all* will indeed clear your temporary Internet files, cookies, and history, but it will also empty your autocomplete data for all of your passwords and forms.

Part of the problem is that the badly designed box puts the 'Delete all' button dangerously near the 'Close' button, and hunting down all those errant passwords is far too demanding for this poor brain.

Joseph Hayes, Orlando, Florida

TELL US WHAT YOU THINK

RATE THIS ISSUE by going to www.pcworld.com/pcwinput—you could win a $300 Amazon.com gift certificate. The site explains the official rules and offers an alternate method of entry into the prize drawing.

CORRECTIONS

IN MARCH'S "35 Things Every PC User Should Know," we said that the online service MediaFire.com supported unlimited file sizes in uploads (page 78); however, uploads are now limited to files up to 100MB.

On page 77 of the article, the item "Turn Off Pesky Apps" suggested that you could stop Windows Messenger spam by going into Control Panel's Administrative Tools to disable Messenger. In actuality this action disables a different Messenger relating to communications between clients and servers.

PC World regrets the errors.

ANOTHER BROWSER ADD-ON

MARCH'S "BUILD THE Perfect Browser" mentions my favorite Firefox add-on, ForecastFox, but not a close second: ReminderFox (reminderfox.mozdev.org). It's a popular, easy-to-use calendar tool.

Bernard Mayoff, Richardson, Texas

FIGHTING SPAM

I ENJOYED THE March *Consumer Watch* on spam. I use three e-mail accounts: One for only my closest friends and relatives (I never get spam on it), another for my legitimate online accounts (it gets only occasional spam), and a third for other sites—it's always loaded with spam.

Walt Halagarda, Mission Viejo, California

PC World welcomes letters to the editor. We reserve the right to edit for length and clarity. Send e-mail to letters@pcworld.com. Share your thoughts in the Comments area under each story on our site, or visit our Forums. ∎

CREDIT SCORE: CAPTURED
SOCIAL SECURITY NUMBER: CAPTURED
IDENTITY: CAPTURED

Who's lurking in your computer?

And how did they get there? You might be under surveillance and not even know it. The world of computer hacking has changed. When it comes to virus outbreaks, there's a deafening silence. No longer do we hear the constant noise, the almost weekly reports of viruses and worms hitting high profile targets.

The digital vandals writing malicious code have not all been captured and they haven't been rehabilitated; they're less visible only because many of them have regrouped and changed their purpose. The old objective was to create a big, loud, destructive splash. Today the intent of spyware writers and Trojan makers is to infiltrate your computer silently and secretly—not to destroy, but to steal. The thief asks, "How can I get as many credit card numbers, bank account logins, passwords and social security numbers as possible without anyone knowing that I even exist."

How can you as a computer owner "detect the undetectable" to prevent such a break-in? What no one needs is another "motion sensor" type solution that only turns on a light to help the thief see more clearly while ransacking your house. What every computer user really needs is a system that identifies intruders, freezes them immediately, and kills them on the spot.

This is exactly how Panda's Internet Security 2007 is designed to operate. It can tell the difference between a cat and a cat burglar, allowing the one to roam freely while accurately destroying the other. Highly powerful and easy to use, Internet Security 2007 is the modern way to stop a thief. Protect all of your valuable belongings and your identity with one simple, easy to use tool.

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HEADACHES WITH HP VISTA UPGRADE

Used Phones: The Deals and the Duds

Buying a refurbished phone can sometimes be the smarter way to go.

MY CONTRACT WITH Cingular is drawing to a close and my Treo 650 is feeling long in the tooth, so I've been prowling the shopping pages on Cingular.com. Lately, nestled between the GoPhones and the PDA/smart phones, I've noticed a new category: refurbished phones.

Now, I'm the type of person who's willing to pay for the latest and greatest when I get a new phone. But looking over Cingular's list of refurbished handsets made me wonder. What exactly are refurbished phones? Who sells them? Are they really a good bargain? And in an era when carriers routinely offer great deals on new phones, when does it make sense to consider a refurbished model?

It turns out that Cingular's modest refurbished-phone program (only 14 models of phone were available) is just the tip of the iceberg: The used-phone business is booming, which, if you think about it, isn't surprising. "The refurbished-phone market growth is mirroring the growth in recycling programs for old phones," says Mike Newman, vice president at Re-Cellular, a phone recycling business. "People are returning their old phones instead of just throwing them in the trash."

BUYER'S-REMORSE PHONES

IN THE CASE of a major wireless carrier such as Cingular, people are returning new cell phones, too. Cingular spokesperson Kelleigh Beal explains that customers who purchase a new phone have 30 days to return it, no questions asked. If a phone has been used, even once, and it is returned during this 30-day period, it can't be resold as new.

When this happens, Cingular removes all data from the phone, repairs any damage (which can include replacing the case or display), and runs a series of tests to make sure it works like new, Beal wrote in response to my e-mail queries. "These are high-quality phones," she noted. "They are a great deal to customers, however, because they are discounted." One

key difference with a refurbished model (and this is true wherever you buy it) is that warranty protection typically lasts only 90 days, if it's offered at all. Most new handsets carry a one-year warranty.

With some refurbished models, you get the best deal only if you sign up for a contract, as with any new phone. For example, Cingular at this writing is offering refurbished Treo 650 units for $100 if you commit to a two-year contract—these discontinued phones still cost $400 if bought without a contract. The $100 price may not seem like such a bargain, since

you can find the same handset sold used by individuals on eBay for $200 or less, no contract required (again, at this February writing). On the other hand, most used handsets on eBay are sold as is—you don't get a single day of warranty protection.

Cingular sells a new LG CU500—a flip phone that supports the high-speed HSDPA network—for $150 with a two-year contract (a $50 mail-in rebate brings it down to $100); a refurbished model is $50 with a two-year contract, no mail rebate required (or available).

But the most inexpensive refurbs on Cingular's site are for the carrier's Go-Phone prepaid services. In fact, refurbished GoPhone handsets all cost $30 (after instant online discounts). Of course, these phones are pretty inexpensive to begin with: Cingular's GoPhone handset page, for example, offers a refurbished Nokia 6030 for $30—right next to the $70 new version.

My repeated queries over several weeks to the other major national carriers—Sprint, T-Mobile, and Verizon—about refurbished phones went unanswered: If they sell them, it's not obvious from their Web sites. Cingular's Beal says that the carrier has been selling refurbished models for at least a year and a half, though it only recently began promoting them as a category on its Web site. Once you look around, however, you'll find plenty of places to buy refurbished phones.

CHARITY HANDSETS

RECELLULAR'S NEWMAN SAYS that his Michigan-based company now processes some 15,000 phones a day, from recent models to oldies dating back to the ▶

Motorola Star-tac. Most of them arrive via carrier recycling programs: "Virgin Mobile, for example, includes a recycling envelope with every phone that they sell," Newman says. Companies such as Best Buy and Verizon Wireless encourage phone recycling by giving any proceeds from the donated phones to charity.

Older phones that are still functional but banged up typically go to third-world countries, Newman says. But ReCellular also spruces up more-recent handsets and distributes them to U.S. resellers.

Houston-based Wireless Galaxy sells a variety of refurbished handsets (as well as new ones) online, says manager Shabaz Khan. Customers who buy refurbished phones often are people who have lost or damaged a fairly high-end phone midway through a contract and don't want to pay the unsubsidized price the carrier will charge for a replacement, Khan says. A cheap, refurbished phone can bridge the

gap between the loss of the expensive phone and the end of a contract, at which time the customer can again qualify for a carrier subsidy on a new high-end model.

The other big market for refurbs is the prepaid-service business (hence the high

Refurbished phones should come with at least some warranty protection.

proportion of $30 GoPhones in Cingular's refurbished-handset list). Pay-as-you-go customers are usually the most price-sensitive of cell phone users: Many cannot qualify for contracts and subsidized phones, and are trying to keep their up-front costs down, Khan says.

Regardless of where you purchase your phone, a reputable dealer will typically offer at least some warranty protection: "Buying from [Wireless Galaxy] gives you a 30-day warranty, and we usually extend that to 90 days," Khan says.

If you are contemplating buying a refurbished phone, check the warranty closely—and not just its length. Find out exactly what it covers, and who's going to be responsible for it. Don't expect support from the manufacturer; you'll probably be at the mercy of the outfit that manages the refurbishing program. Get all the details in writing, Newman says.

A good phone-refurbishing company will supply all of the equipment and manuals you'd get with a new handset. And reputable factory refurbishers will always properly remove data from old phones. (If you're giving away a phone and are concerned about protecting your privacy, ReCellular provides free data- ▶

PRIVACY WATCH

Use Disposable E-Mail Addresses to Shut Down Spammers

ANYONE WHO HAS ever had an inbox full of penny-stock tips, pharmaceutical offers, and phishing attempts has had two fantasies: To turn off the spigot, and to find out who gave the spammers their address. Throwaway e-mail addresses can make both fantasies come true, at least for some of your spam.

With the right e-mail service, you can set up unique, disposable e-mail addresses for any transaction in which you're worried about getting spammed. The e-mail arrives in your regular inbox, but if you start to receive spam from the disposable address, you can just turn it off. In addition, the address can help you pinpoint exactly which company sold you out.

I looked at three services: Yahoo AddressGuard (part of the $20 per year Mail Plus service at mailplus.mail.yahoo.com), Gmail disposable addresses (free at gmail.com), and a relatively new one called Anonymizer Nyms ($20 per year at find.pcworld.com/56464). With Yahoo's feature you choose a single unique prefix for all of the addresses you create, such as "erik-," and then append a suffix for each new address. I tend to use a site's domain name for the suffix, so an e-mail address might look something like erik-*sleazycompany*@yahoo.com. You can add notes about when and why you did business with the company when you create the address.

With Nyms, you select a unique name for each address by

visiting the Nyms Web site or by using software on your PC. All your Nyms addresses end in "nyms.net," and mail sent to any of them ends up at whichever e-mail address you list in your account. Of the three services, Nyms offers the most features, such as the ability to specify an address's expiration date.

If you respond to e-mail sent to the Nyms or Yahoo addresses, your responses show as coming from the temporary address. In addition, either service allows you to create a new address in roughly 30 seconds with a toolbar bookmark.

Gmail's feature is more convenient than Yahoo's or Nym's in that it requires no additional setup, but it carries some significant drawbacks. To use it, you add "+*anyword*" to your regular Gmail address, as in elarkin+*sleazycompany*@gmail.com. Any such e-mail will come to your regular account.

Because you don't specifically create an address, however, you can't simply delete it if spam starts flowing. You must create a mail filter to block or delete any mail sent to the address. Also, if you reply to a message, the reply shows as coming from your regular Gmail address. And finally, smart spammers can just strip out the "+sleazycompany" and use your true address. Still, it's better than directly handing out your actual e-mail address.

I regularly use Yahoo's service because I'm also a fan of the site's new Web mail interface. But if I didn't already have a Yahoo account, I'd probably fork over the $20 for Nyms, since it works smoothly with any other e-mail account.

–Erik Larkin

61"

IT'S YOUR SHORTEST DISTANCE BETWEEN A PRESENTATION AND A SALE.

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3LCD

erasing software for assorted popular models at its WirelessRecycling.com Web site; see find.pcworld.com/50670.)

And if you're shopping for a refurbished phone, don't expect to see a lot of superhot models. Carriers typically use refurbished versions of popular new handsets as replacements for defective phones under warranty, and ReCellular's Newman says that there simply aren't enough of them left over to satisfy the demand. Oh, well—it's back to prowling the shopping pages for me. ∎

Yardena Arar is a senior editor, Erik Larkin is an associate editor, and Amber Bouman is an editorial assistant for PC World. You can send them e-mail at consumerwatch@ pcworld.com, privacywatch@pcworld.com, or onyourside@pcworld.com. To read previously published Consumer Watch, Privacy Watch, or On Your Side columns, visit find. pcworld.com/31703, find.pcworld.com/31706, or find.pcworld.com/31709, respectively.

ON YOUR SIDE

Problems With Vista Upgrade Offer

I PURCHASED A new HP Pavilion d4650y desktop PC last November. The computer ran Windows XP Media Center Edition, but came with a guarantee that I would receive an upgrade to Windows Vista Home Premium once it was released. In December, HP provided a Web address where I could apply for the upgrade kit. When I applied for the upgrade, however, I kept getting a notice that my Certificate of Authenticity, a registration number proving that I had bought the computer, was not recognized. I contacted HP's customer service department, and was told that the problem was Microsoft's. When I called Microsoft, it said the fault was with HP.

Palmer Gilleland, Spring Branch, Texas

On Your Side responds: After we contacted both companies, a representative with ModusLink, an HP contractor, assisted Gilleland in completing the upgrade application. At press time an HP rep said Gilleland should receive his copy of Vista within four to six weeks.

HP gave this explanation for Gilleland's problem: When customers entered their COA number on the company's Web site, that number was blocked from future use, as a security measure. If the application process got interrupted, however, the COA number could have been locked before the application was complete. The application process has since been changed to fix this problem, the HP representative said.

–Amber Bouman

How to Free Your PC From Spyware

Use these cheap and no-cost tools to boot even really stubborn malware.

I HATE WEASELS who use deceptive Web sites and e-mail messages to foist spyware on us. But I have strategies to help remove all the junk—and outsmart anyone who tries to trick you into installing more.

Hassle: *I use a free antispyware program, but an online scanner showed that I still have about a dozen spyware programs. Will I ever be free of spyware?*

The Fix: Getting rid of every trace of spyware takes work, but it can be done. (Think you have it bad? Check the infestation at find.pcworld.com/56456.)

This will sound extreme, but I want you to scan your PC with three antispyware programs—one commercial, the other two freebies—to capture and remove everything. In my experience, each scanner finds different spyware. (All noncommercial products I mention are available at find.pcworld.com/56459.)

Start with *one* of my three top-rated commercial favorites: SpySweeper, Spyware Doctor, or (the one I use) Counter-Spy. Don't install all three; they'll just fight each other. (You can find reviews of each at find.pcworld.com/56457.)

After you've completed a scan, follow the antispyware software's advice to quarantine the nasties. Then scan again, this time with TrendMicro's online House-Call, followed by Spyware Guide's online X-Cleaner Micro Edition. Follow the advice of each utility as you proceed.

You're not done yet. Scan once more with your antivirus program. Reboot and rescan once more with the commercial program. Your system *should* be clean.

Warning: Trust only antispyware programs recommended by sites such as *PC World*, and *never* touch the pop-up offers on unknown Web sites. Eric Howes's Spyware Warrior site (find.pcworld.com/56461) reports on malware masquerading as antispyware applications.

The Hassle: *Your scanning strategy didn't work. What do I do now?*

The Fix: Give extratough malware a swift kick with these tactics. Spyware can lurk in old System Restore points, so remove all except the latest one. Read the directions at find.pcworld.com/56492 to learn how.

Repeat the three-program scan strategy discussed earlier.

Still no luck? Some spyware components are obstinate. To pry them loose, boot to Safe Mode: Hold down **<F8>** while rebooting the PC, and then choose *Safe Mode*. Rescan and reboot.

If you're still struggling, call for help. My number is—just kidding. Download and run HijackThis. Click *Do a system scan and save a logfile*. Save the file and post it to the forum at either SpywareInfo (find.pcworld.com/56476) or Tech Support Guy (find.pcworld.com/56477).

To keep your rig spyware-free going forward, set your antispyware and antivirus apps to monitor your system. And use a firewall, such as ZoneAlarm Free.

Quick tip: Don't fall for the spyware trick using phony messages that pop up in your browser. Test whether a message is legit by right-clicking the image. If you see the 'Save Picture As...' option, it's likely a trap. Close your browser. ∎

TOOL OF THE MONTH
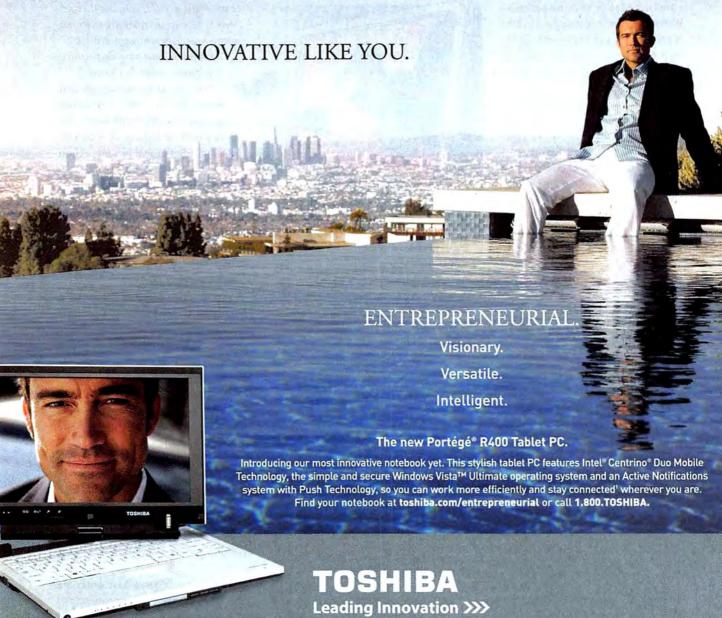
Use Restricted Zones to Stop Spyware

MY SYSTEM IS clean and I keep it that way with three free tools. SpywareBlaster (find.pcworld.com/56478) adds the URLs of risky sites to your browser's Restricted Sites list, preventing malware from installing. This program doesn't scan or work in the background; but for a $10 registration, it will automatically download Restricted Sites lists. The only downside, and it doesn't happen often, is that the tool may lock out a site you visit. To avoid this result, remove the site from SpywareBlaster's list. If you are feeling especially geeky, use ZonedOut (find.pcworld.com/56480) to add IE-SPYAD's (find.pcworld.com/56479) list of dangerous and annoying sites to IE's Restricted Sites.

Toshiba recommends Windows Vista™ Ultimate.

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Cruising the Internet at 70 MPH

Soon you'll be able to surf the Web, download music, and check e-mail in your car.

AS REGULAR READERS of this column are aware, I can't go on vacation or to the grocery store without my Internet fix. So naturally, I crave a constant high-speed connection for my car so that I can download MP3s as I roll down I-40 (a robotic chauffeur would be nice, too).

The good news is that the Internet is coming to automobiles later this year. And when it arrives, it will start to change how we interact with each other and the world around us.

LIFE IS A HIGHWAY

2007 WILL BE the year cars and tech really mesh, thanks in part to Ford's Sync, a hands-free cell phone gizmo running on Microsoft's Auto operating system. It also lets you control your MP3 player using voice commands. Sync will be available on about a dozen 2007 car models in the fall, and, yes, it even works with iPods.

But this is only the beginning, says Velle Kolde, product manager for Microsoft's in-vehicle systems. Future versions of Sync could incorporate Wi-Fi, so you could download your e-mail while driving through a Net cloud and then have the system read it to you.

Autonet Mobile (autonetmobile.com), meanwhile, wants to turn your car into a rolling hotspot. Autonet's book-size router plugs into your cigarette lighter and connects to the same kind of high-speed cell networks used by wireless PC Cards, while broadcasting a secure 802.11g network in your car (and a little beyond).

Autonet has two big advantages over wireless cards, according to the company's CEO, Sterling Prantz. It is better at managing handoffs when you move from fast networks to slower ones, allowing for seamless data streaming. And everyone can share one connection, so Mom can watch YouTube on her laptop while Sis IMs her posse and Junior plays multiplayer games on his PSP—assuming, of course, that you're hooked into a fast EvDO Rev A network. By the time you read this, cars with Autonet inside

should be available at select Avis Rent A Car locations; late this spring you'll be able to buy the router for $399, plus $50 a month for access to Autonet's network.

MOVING TARGETS

IF YOU WANT broadband built into your car, you'll have to wait a bit longer, says Bob Schoenfield, senior vice president for Aeris (aeris.net), a company that runs a communications network for telematic services. Aeris is working with a "non-U.S. car company" on a 2008-model automobile that can download data at up to 2 megabits per second. As today's fastest cellular networks get even faster, we will

see a tsunami of mobile content, from movies and music to live broadcasts.

Moreover, as Internet Protocol version 6 becomes more common, cars could be used to gather data about the weather, traffic patterns, and more, says Tom Patterson, CEO of Command Information (commandinformation.com), a consultancy that specializes in IPv6. The firm has built the "Veesix," a 1970s-era Porsche designed to show off IPv6's automotive potential.

Because IPv6 allows for trillions of new IP addresses, your speedometer and windshield wipers could have their own addresses, enabling them to broadcast data to a server that aggregates the information and feeds back real-time weather and traffic reports.

IPv6 also lets devices communicate automatically. So if another car were approaching a blind intersection at high speed, your car could detect it and sound an alarm.

IPv6 is being built into cars in Europe and Japan, and car area networks that connect all of the devices inside your ride should start appearing in 2009. Important questions remain, of course—like whether you'll have to share your driving data with the police or your insurance company, or what happens when you send an angry text message to the Hummer driver who just cut you off.

But the potential is awesome. I'd take the Veesix in a heartbeat—and a designated driver when I just have to surf. ∎

Contributing Editor Dan Tynan is the author of Computer Privacy Annoyances *(O'Reilly Media, 2005). You can send him e-mail at* gadgetfreak@pcworld.com.

ILLUSTRATION: BARRY BLITT

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▶ 802.11g Wireless Hotspot Gateway with printer (G-4100)

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Go to find.pcworld.com/56666

Microsoft Security Programs Create Risk

Plus: Fixes for Internet Explorer and Office, and changes to Windows support.

A NEW FLAW in Microsoft security software turns the software that's supposed to be protecting you into a threat.

This critical hole appears in Microsoft's Malware Protection Engine, a part of Windows Defender and Windows Live OneCare, as well as of the Microsoft Antigen and Microsoft Forefront Security business programs. Through it, attackers could take over a vulnerable PC running the security software on any supported version of Windows, including Vista, if one of the affected programs scans a doctored PDF file sent as an e-mail attachment or downloaded from the Web.

No active attacks against this hole are known to exist, but if you haven't already received the fix through Automatic Updates, get it now from find.pcworld.com/56578.

Microsoft also patched a

fistful of critical holes affecting Internet Explorer 6. Some of the flaws actually reside in Windows, but all create the risk of drive-by downloads if you browse a poisoned site with IE 6 on Windows 2000

A virus scan could trigger the attack.

SP4 through XP SP2. Vista is not affected, and IE 7 offers additional protection by requiring multiple confirmations to run ActiveX. All the patches have been distributed via Automatic Updates; the fixes appear to have come out before any known attacks.

The first two fixes close holes in two different ActiveX controls used by Windows (and loadable by IE) for HTML Help and Microsoft Data Access Components. The second two repair flaws involving IE's handling of COM objects. Get more on the Help flaw at find.pcworld.com/56579 and on the MDAC problem at find.pcworld.com/56580.

Details on the COM flaws are at find.pcworld.com/56581, along with info on the final hole, which can be targeted if you click a poisoned FTP (file transfer protocol) link in an e-mail or on a hacked site.

OFFICE ATTACKS

JUST AS MICROSOFT thought it had fixed the last of a string of exploited holes in its Office applications, another one popped up. The fixed portions (distributed via Automatic Updates) close vulnerabilities considered critical in Word 2000 and rated important in Works and in other Word versions (more at find.pcworld.com/56582). The new, as-yet-unpatched bug is rated the same, and involves the usual tainted e-mail attachments or downloaded file (details at find.pcworld.com/56585). ■

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

VISTA PHOTO GOTCHAS, SOFTWARE FIX

IF YOU CREATE digital photo tags using Microsoft's Photo Info program in Vista, existing tags can become unreadable. Worse yet, photos in Nikon's raw format can become unviewable.

Until camera companies provide driver updates, the workaround is, first, to avoid using the Photo Acquisition Wizard. Instead, use the camera maker's software to upload pics, or drag and drop them directly from the camera. Second, don't use Windows Photo Gallery or Windows Explorer to edit photo tags or properties. Read more at find.pcworld.com/56583.

In other Vista news, a compatibility patch allows a slew of older programs and games to run under the OS. For the fix and the list of affected software, see find.pcworld.com/56584.

IN BRIEF

Costlier Support

VISTA BUYERS RECEIVE free support for 90 days from the activation date, after which calls will cost $59 per incident. XP support has changed as well: You get two free support calls, and then must pay $59 per call (up from $35). Read more at find.pcworld.com/56586.

Firefox Update

NEW VERSIONS OF Firefox (2.0.02 and 1.5.0.10) and Thunderbird (1.5.0.10) close a number of holes, two of which are critical. Upgrade via either program's automatic update feature, and obtain more information at find.pcworld.com/56651.

Google Desktop Fix

RESEARCHERS discovered that an infected Web site or e-mail could trick Desktop into divulging your data (find.pcworld.com/56650). If Google's auto-update fix (to 5.0.701.30540) didn't reach you, grab the new version at desktop.google.com.

BUGGED?

FOUND A HARDWARE or software bug? Send us an e-mail on it to bugs@pcworld.com.

REVIEWS & RANKINGS

EDITED BY LIANE CASSAVOY AND ALAN STAFFORD

Put the You in YouTube

We test five kinds of video-capture devices to find out which ones are best for posting online.

VIDEO TEST Center I'M STILL ON the waiting list for my 15 minutes of fame. To hurry things along, I started posting videos to YouTube, the video sharing site that claims 65,000 new videos are posted every day (and none of mine are pirated TV shows—honest).

I use a MiniDV camcorder to capture footage, and video editing software to fine-tune my videos, but often the process takes more time than I'm at liberty to spend. So I decided to look for a combination of hardware and software that would make the process easier and faster while retaining the high quality my prospective fans would no doubt expect.

Our Test Center analysts, unconcerned with my lack of a fan base but intrigued by the prospect of comparing dissimilar devices, agreed to test five products: the Canon Elura 100, an inexpensive MiniDV camcorder; the Creative Live Cam Optia Webcam; the Digital Blue American Idol Digital Camcorder, which is aimed at kids; the Palm Treo 750 camera phone; and the Panasonic Lumix DMC-LX2, a digital camera that captures video.

Even a low-end camcorder captures better video than a camera phone can. After all, the primary function of a camcorder is video, not telephony. But uploading video to YouTube requires that you either compress it or start out with already-compressed footage, since the site limits files to 100MB—and anyway, most home broadband connections have pitiful upload speeds. So

CANON'S $350 ELURA 100 and Digital Blue's $50 American Idol Digital Camcorder.
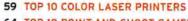
the end product won't look nearly as good as the original did, and that can level the playing field substantially.

For our tests, we captured footage of the same scene, using each device's best quality settings. We then compressed and converted each clip with AVS Media Video Tools 5.5 (find.pcworld.com/56532), a video-conversion utility, using YouTube's recommended settings: 320 by 240 resolution and MPEG-4

format for the video track and MP3 as the audio format. (YouTube accepts several different formats, including those generated by most digital cameras, camcorders, and cellular phones). We then loaded the original footage onto five identical systems we'd connected to identical, color-calibrated 19-inch ViewSonic VG1930WM wide-screen LCD monitors, and uploaded the compressed footage to YouTube. A panel of editors and Test Center

57

60

analysts then judged both the original and the compressed movies for color, detail, motion, and overall quality. You can watch our test videos at find.pcworld.com/56784.

Our chart doesn't report the PCW Rating for each product, because we judged only their video features for this review. It wouldn't have been fair to try to compare all of the features of a camera phone to all of the features of a camcorder, for example. You can read a full review of each product by visiting the *PC World* Find-It URLs listed in our chart.

STAR-QUALITY VIDEO

YOU CAN GET a pretty good-looking movie out of a couple of these devices. Four of the models we tested shoot video at 30 frames per second, and three of them capture VGA (640 by 480) resolution or higher. But our tests suggest that data rate is a better indicator of video quality. In general, the higher the data rate, the better the color, the smoother the motion, and the sharper the details. The Canon Elura 100, for instance, takes uncompressed, 720-by-4800-resolution video at 30 fps, with a data rate of 3.6 MBps. For our 2-minute

test, this resulted in a 434MB file. The Treo 750 compresses on the fly to only 0.05 MBps; the same 2-minute shoot produced a file size of just 6MB.

A mere 6MB over 2 minutes doesn't translate into a lot of

GOOD IMAGES, GOOD calls, so-so video: Panasonic's Lumix DMC-LX2 camera (below) and Palm's Treo 750 phone.

visual information, as the end results of our tests showed. Judges rated the Treo 750's as-captured video Poor for color accuracy, detail, and overall quality, and Fair for motion. The camera phone's color accuracy score improved to Fair on its optimized footage, but only because optimized video from the better performers degraded more noticeably.

Even the $50 American Idol camcorder beat the Treo 750,

with a score of Fair for overall quality of both as-captured and optimized video. Nevertheless, the Idol fared much worse than any of the other devices did under low lighting.

As you'd expect, the Canon Elura MiniDV camcorder won the competition, with Good overall ratings for both as-captured and optimized footage. It excelled at maintaining motion quality in optimized movies.

Surprisingly, however, the Creative Webcam came pretty close to the Elura. It, too, received Good overall ratings for as-captured and optimized footage. Finally, the Panasonic digital camera scored aver-

age or above on most criteria, though its overall scores were only Fair for both the original and the optimized footage.

INSTANT UPLOAD VS. PAINSTAKING EDIT

BUT WHILE OUR lab-based video tests provide a good indication of how the different devices will perform under the same conditions, this isn't entirely an apples-to-apples test: They are all different enough that you must take their features into account to understand how they'll work in different settings.

For example, the Elura 100 has a 20X zoom lens—above average for a camcorder, and considerably more powerful than anything else we looked at for this review. It also has two weak LED lights that help the exposure in dim settings, if your subject is within a few feet of the camcorder. It has a 2.7-inch wide-screen display, and it shoots in wide-screen mode, too—great for viewing output on a wide-screen TV (though it's still a standard-definition camcorder). It does not capture video in low light as well as other camcorders do, but it's far and away the best here in dim settings. ▶

You'll have to use a video editing app or a conversion utility to compress your footage.

Unlike some digital cameras, the Panasonic Lumix DMC-LX2 will adjust the exposure as you shoot a movie, but the focus remains fixed, and you can't zoom while you're in movie mode. If you limit your movie's duration, or if you reduce the quality setting, you may not have to recompress it; otherwise, you must start up the video editing software.

The Creative Live Cam Optia has a spring-loaded clip for attaching it to an LCD screen. The Webcam rotates 270 degrees, so you can take videos of yourself or of someone in front of you, and you can adjust exposure settings manually with an on-screen utility.

However, you must twist the lens to adjust the focus, and hard light caused flaring. The Webcam works only when it's attached to a computer. But YouTube allows you to upload video directly to its servers if you are using a Webcam, with no software required; that is about as easy as it gets.

YOU CAN UPLOAD video directly to YouTube from a Webcam such as the Creative Live Cam Optia.

The Palm Treo 750 camera phone has few mobility constraints, but it has a fixed lens with no focusing capabilities and only digital zooming. You can upload to YouTube directly via MMS (Multimedia Message Service), but we found that we couldn't upload videos longer than 5 seconds at the phone's best resolution, or longer than 10 seconds at 176 by 144 resolution, because the Cingular service it was using limits files sent via MMS to 300KB. (Verizon limits MMS video transmissions to 350KB, and Sprint limits them to 15 seconds). For our tests, we chose the higher resolution, transferred video to a mini-SD card, and then copied our movie to a computer before uploading it to YouTube.

I had a difficult time finding the Digital Blue American Idol Digital Camcorder at my local Best Buy store—but I was too embarrassed to ask staffers where they kept it. It comes with fun, kid-focused software and an external microphone (though you can connect it to your PC only, not to the actual camcorder). When you're capturing video, you must keep the capture button pressed down—up to a limit of 4 minutes at its best-quality setting, or about 6 minutes at its worst setting, unless you connect it to a PC via USB, as we did. You can also use the Idol to upload directly to YouTube, if the device is connected via USB, though the quality isn't nearly as good as the Optia's.

VIDEO HARDWARE

So You Want to Be a YouTube Star? Use a Camcorder

NO SURPRISE: A MiniDV camcorder will give you the best-quality video. But if convenience is a priority, use a Webcam and skip the camera phone, because cellular services limit file sizes.

PRODUCT	Video specs[1]	Performance
Canon Elura 100 **$350** find.pcworld.com/53792	• Resolution: 720 by 480 pixels • Frame rate: 30 fps • Data rate: 3.6 MBps	• Original quality: Good • Compressed: Fair • Uploading ease: Fair
▶ **Bottom line:** This inexpensive MiniDV camcorder captures wide-screen video. But you'll need video editing software to scrunch the files it creates.		
Creative Live Cam Optia **$65** find.pcworld.com/56528	• Resolution: 640 by 480 pixels • Frame rate: 30 fps • Data rate: 1.4 MBps	• Original quality: Good • Compressed: Good • Uploading ease: Superior
▶ **Bottom line:** The tiny Optia has a clip for mounting it on a laptop's LCD panel, and you can upload directly to YouTube with it, no software required.		
Digital Blue American Idol Digital Camcorder **$50** find.pcworld.com/56525	• Resolution: 320 by 240 pixels • Frame rate: 15 fps • Data rate: 0.4 MBps	• Original quality: Fair • Compressed: Fair • Uploading ease: Fair
▶ **Bottom line:** The low price and software make it great for kids, but the video is weak in good light, and it degrades to Bigfoot-film quality in low light.		
Palm Treo 750 **$499** find.pcworld.com/56526	• Resolution: 352 by 288 pixels • Frame rate: 30 fps • Data rate: 0.05 MBps	• Original quality: Poor • Compressed: Poor • Uploading ease: Fair[2]
▶ **Bottom line:** Carriers' file-size limitations choke MMS video uploads, so to get even the poor quality we saw, we first had to download to a computer.		
Panasonic Lumix DMC-LX2 **$500** find.pcworld.com/56527	• Resolution: 640 by 480 pixels • Frame rate: 30 fps • Data rate: 1.4 MBps	• Original quality: Fair • Compressed: Fair • Uploading ease: Fair
▶ **Bottom line:** This point-and-shoot model captures okay video, and often you won't have to recompress before you upload to a video sharing site.		

CHART NOTE: Prices are as of 2/14/07. For how we tested, go to find.pcworld.com/56786. **FOOTNOTES:** [1] fps = frames per second; MBps = megabytes per second. [2] For videos longer than 10 seconds; rating for uploading shorter videos directly through cellular network is Very Good.

MULTITASKERS WIN

USING A MINIDV camcorder requires the most effort if you want to post videos online, but most other devices don't make things much easier, unless you accept compromises. But I'm willing to sacrifice if the price is low (in the case of a Webcam) or if the device excels at other tasks (as in the case of a digital camera).

Meanwhile, the blogosphere has yet to notice my videos. Fame is fleeting *and* fickle.

—*Alan Stafford*

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- VGA, DVI-D signal connectors
- 300 cd/m² brightness
- 5ms response time
- Internal power adapter
- Black color

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- 700:1 contrast ratio
- 150° horizontal viewing angle
- 135° vertical viewing angle
- VGA, DVI-D signal connectors
- 300 cd/m² brightness
- 5ms response time
- Internal power adapter
- Black color

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(ET.1916B.WDA)

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- 1280 x 1024 native resolution
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$499

AMD Athlon™ 64 Processor 3800+
Genuine Windows Vista™ Home Premium
1GB DDR2 SDRAM and 160GB[3] SATA hard drive

Acer Aspire AST180-US340B

$399

AMD Sempron™ Processor 3400+
Genuine Windows Vista™ Home Basic
512MB DDR2 SDRAM and 160GB[3] SATA hard drive

AMD 64 Athlon X2

- Up to AMD Athlon™ 64 X2 Dual-Core Processor
  - HyperTransport™ Technology
  - Enhanced Virus Protection Technology[2]
  - Cool'n'Quiet™ Technology
- Genuine Windows Vista™ Home Premium or
  - Genuine Windows Vista™ Home Basic
- DVD-Dual drive (DVD+/-RW)
- 9-in-1 card reader
- Integrated NVIDIA® GeForce® 6100 and
  NVIDIA® nForce® 430 graphics
- Gigabit LAN, V.92 modem
- PS/2®-style keyboard and mouse
- One-year limited warranty[4]

Display sold separately.

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

- 2600 ANSI lumens
- XGA (1024 x 768)
  native resolution
- SXGA (1280 x 1024)
  maximum resolution
- 2200:1 contrast ratio
- 4.8 lb. (2.2kg)

(EY.J4301.007)

**Acer PD311
Portable Projector**

$739

- 2000 ANSI lumens
- SVGA (800 x 600)
  native resolution
- SXGA (1280 x 1024)
  maximum resolution
- 2000:1 contrast ratio
- 2.9 lb. (1.3kg)

(EY.J3401.006)

acer

Stylish Vista-Based Tablet Lacks Juice

TABLET PC

TEST Center HP'S CONVERTIBLE Windows Tablet PC, the Pavilion tx1000, is artfully arranged. This $1855 ultraportable is light (4.2 pounds) and has a distinctive design, but its poor battery life and reflective screen make it an imperfect traveling companion.

Among the tx1000's features are a built-in Webcam at the top of the screen and a fingerprint reader set into the lid. It also carries a three-in-one memory card reader, a trio of USB 2.0 ports, and a double-layer DVD±RW drive.

Converting from notebook to slate mode is simple. The tablet has an easy-to-use touch screen that is quite responsive to either a fingertip or the included HP stylus.

Unfortunately, the display lacks an antireflective coating. Strangely, it seems to have been treated with some kind of smoky-hued coating that makes seeing anything on the screen from an angle difficult.

THE TOUCHPAD HAS indentations to sense your finger's movements.

The tablet was unimpressive in our performance tests. On a beta version of WorldBench 6, the tx1000, equipped with a 2-GHz AMD Turion 64 X2 TL-60 processor and Windows Vista Premium Home Edition, earned a middling mark of 74. It ran down quickly in our battery tests, lasting just 1 hour, 47 minutes. (Since our Vista-based benchmark is still in beta, we can't assign the notebook a PCW Rating.)

Still, it's easy to use, despite the screen glare. Just be sure to pack the AC adapter.

—*Kalpana Ettenson*

> **Pavilion tx1000**
> **HP**
> PCW Rating pending
> The tx1000 is easy to use and offers great design touches, but its battery life is poor.
> List: $1855
> find.pcworld.com/56592

Nokia Upgrades Its Internet Tablet

HANDHELD

UNTIL YOU USE it, Nokia's N800 Internet Tablet seems impressive. It has an attractive, svelte design, and it's meant to let you surf the Web and check e-mail on the go. But using the N800 is frustrating.

Measuring 5.7 inches by 3.0 inches by 0.5 inch and weighing just 7.3 ounces, the N800 is 0.2 inch slimmer and 0.8 ounce lighter than last year's 770 model. The N800's bright, crisp, 800-by-400-pixel, 4.1-inch touch screen shows photos, Web pages, and videos with near-cinematic clarity.

The N800 offers 802.11b/e/g wireless and Bluetooth 2.0 for Internet access; with the latter, you have to use a Bluetooth-enabled cell phone. A Linux-based device, the N800 comes with the Opera 8 Web browser, an RSS reader, an e-mail client for accessing POP3 and IMAP accounts, support for instant messaging, and a media player that plays audio and video.

The built-in Webcam supports video calls, but only via a Nokia app currently in beta testing. Setup was difficult, but afterward my video calls were excellent, with no major lags or audio stuttering.

Unfortunately, in other respects the N800 is a bundle of frustrations. The device renders Web pages exactly as they would look on a regular-size display, so viewing pages on the small (albeit sharp) screen requires constant zooming in and out. Most damning of all is the N800's lack of such basic PDA functions as a calendar. And it doesn't work with Outlook or any other Microsoft Office application either.

The device has two good on-screen keyboards—one for a stylus, and a larger one for fingers—but I would have preferred an integrated keyboard. While audio playback was superb, streaming video playback looked choppy. (Downloaded video played better.)

Not really a PDA or a cell phone or a UMPC, the Nokia N800 is ultimately just a $400 toy for tech enthusiasts.

—*Don Lipper*

> **N800 Internet Tablet**
> **Nokia**
> PCW Rating **70 Good**
> The N800 sports a beautiful display, but it lacks basic PDA and office applications.
> List: $400
> find.pcworld.com/56530

THE NOKIA N800 handheld has a built-in Webcam on its left side.

PHOTOGRAPHS: MARC SIMON

ZoneAlarm Internet Security Suite 7.0 Performs

CHECK POINT'S NEW Zone-Alarm Internet Security Suite 7.0 significantly improves on version 6.0, reviewed almost a year ago in our security suite roundup "All-in-One Internet Security" (find.pcworld.com/56576). The mediocre antivirus engine licensed from CA has been replaced with a superior one from Kaspersky Labs, resulting in a high-performance suite whose only weakness is its antiphishing protection.

The suite's core components include antivirus, antispyware, and anti-adware protection, courtesy of the Kaspersky engine, along with the house-developed network firewall and the OSFirewall, a supplemental protective layer to block malicious changes to your PC.

In a battery of tests conducted by AV-Test.org, the suite's Kaspersky engine performed creditably, halting 98.3 percent of backdoor programs, 97 percent of bots, and 99 percent of Trojan horses. It also caught 74 percent of adware samples. The OSFirewall detected a similarly solid 80 percent of network and e-mail worms, based on their behavior alone. The suite spotted all pieces of malware hidden inside common compressed file formats, and the firewall prevented all attacks from both inside and outside the PC.

The suite's on-access scanner, however, failed to detect the PP97M/Tristate.C macro virus, which targets Microsoft Office 97 files. AV-Test.org reports that Kaspersky's own

THE EXCELLENT VIRUS protection comes from a Kaspersky engine.

version of its virus engine successfully identified this threat, which suggests that the problem relates to Check Point's implementation of it. While most security companies rate this virus as a low-risk threat, ZoneAlarm's overlooking of it came as a surprise.

ZoneAlarm offers most of the usual suite extras. Its Privacy section selectively blocks Web site cookies, advertisements, and embedded objects and scripts. Its instant messaging security protects users of AOL, ICQ, MSN, and Yahoo services from bad links and attachments, though it added so many warnings to my outgoing IM messages that I turned it off. Spam protection, provided through MailFrontier, adds a configurable toolbar to Outlook and Outlook Express. Parental controls block all sites included on Check Point blacklists, along with unknown sites identified via effective dynamic analysis. The Vista version of this product is expected to arrive in the second quarter of 2007, and ZoneAlarm customers within the one-year subscription window will be

able to upgrade to it for free.

Noticeably missing from the suite is an antiphishing toolbar. In fact, the suite lacks anything capable of blocking known phishing sites instantly (though you can download a free tool such as the Netcraft Toolbar, available at toolbar.netcraft.com). But ZoneAlarm does provide other, less effective Web protection. The MyVault tool will block data such as Social Security, credit card, and password digits from exiting your PC—but first you'll have to enter the information (encrypted if you want).

At $50 per PC per year, the ZoneAlarm security suite is priced on a par with competing suites. It performs well, though it could benefit from better phishing protection.

—*Narasu Rebbapragada*

ZoneAlarm Internet Security Suite 7.0

Check Point

PCW Rating 88 **Very Good**

A new antivirus engine from Kaspersky significantly improves performance, but the suite still lacks antiphishing features.

List: $50 (single user)

find.pcworld.com/56622

GOTCHA!

Can Cameras Do SDHC?

JUST BECAUSE YOUR digital camera uses SD Cards to store photos doesn't mean that it will work properly with just any SD Card. Older cameras can't recognize new Secure Digital High Capacity (SDHC) media, which can hold 4GB to 32GB of data and cost as little as $50.

Older SD Cards have typically maxed out at a storage capacity of 2GB. Some 4GB SD Cards appeared prior to the new high-capacity format's release, but using these cards isn't recommended, due to compatibility issues. Unfortunately, most digital cameras sold before summer 2006 are unlikely to be SDHC-compliant (though a couple of models can be made compatible with a firmware upgrade).

If a camera (or other device) does not state support for the SDHC format (look for the SDHC logo on the box), you won't be able to use the higher-capacity cards with it.

—*Eric Butterfield*

New Network-Ready Color Lasers From $350

TEST Center EACH OF THE color laser printers on this month's chart, including our Best Buy, the $400 Oki Printing Solutions C3400n, can be attached to a network. Though the C3400n delivers high text quality and fast color printing speeds, its operating costs are on the high side. (Our online reviews provide details about each printer's ongoing costs.) Konica Minolta's new Magicolor 2530DL sells for $399,

ECONOMICAL: THE KONICA Minolta Magicolor 2530DL.

about the same as the Oki, but it prints a bit more slowly.

The number three Lexmark C500n and Samsung's debuting CLP-300N (in fifth place) both cost about $350. And to think we imagined color laser prices couldn't go any lower.

With prices falling across the board, you might consider Lexmark's C530dn at number four; it costs $499 but includes a duplexer at that price.

—*Danny Allen*

ONLINE

FOR MORE INFORMATION about the color laser printers reviewed in this chart, including details on how we tested them, go to find.pcworld.com/55225.

COLOR LASER PRINTER	PCW Rating	Performance	Features and specifications [1]
1 Oki Printing Solutions C3400n — **Best BUY** $400 — find.pcworld.com/55217	**82** Very Good	• Text quality: Superior • Graphics/photo quality: Good/Fair • Tested speeds (ppm): 20.7 text/4.6 graphics	• 20 ppm text • 16 ppm graphics • 1200-by-600-dpi maximum resolution
► **Bottom line:** This entry-level model is small and fast at printing both text and color graphics, though paper-handling capabilities are limited.			
2 Konica Minolta Magicolor 2530DL — $399 NEW — find.pcworld.com/56555	**81** Very Good	• Text quality: Very Good • Graphics/photo quality: Good/Fair • Tested speeds (ppm): 17.3 text/2.6 graphics	• 20 ppm text • 5 ppm graphics • 2400-by-600-dpi maximum resolution
► **Bottom line:** The compact Magicolor 2530DL can print directly from a digital camera, and it offers competitive costs per page.			
3 Lexmark C500n — $349 — find.pcworld.com/55219	**79** Good	• Text quality: Superior • Graphics/photo quality: Fair/Good • Tested speeds (ppm): 24.9 text/3.0 graphics	• 31 ppm text • 8 ppm graphics • 1200-by-600-dpi maximum resolution
► **Bottom line:** The C500n prints fast, high-quality text at a competitive price, though color graphics quality was disappointing.			
4 Lexmark C530dn — $499 NEW — find.pcworld.com/56554	**78** Good	• Text quality: Very Good • Graphics/photo quality: Good/Fair • Tested speeds (ppm): 20.7 text/3.6 graphics	• 24 ppm text • 22 ppm graphics • 1200-by-1200-dpi maximum resolution
► **Bottom line:** This model's price is quite attractive for a color laser that handles double-sided prints and has two paper trays.			
5 Samsung CLP-300N — $350 NEW — find.pcworld.com/56553	**78** Good	• Text quality: Good • Graphics/photo quality: Fair/Fair • Tested speeds (ppm): 17.7 text/2.4 graphics	• 17 ppm text • 4 ppm graphics • 2400-by-600-dpi maximum resolution
► **Bottom line:** The CLP-300N won't thrill anyone with its unexceptional print quality, but it's small and inexpensive for a color laser.			
6 Dell 3110cn — $499 — find.pcworld.com/55216	**78** Good	• Text quality: Very Good • Graphics/photo quality: Fair/Good • Tested speeds (ppm): 25.3 text/1.7 graphics	• 31 ppm text • 17 ppm graphics • 600-by-600-dpi maximum resolution
► **Bottom line:** The 3110cn is economical to run, and takes an optional duplexer that costs just $199. It's slow to print in color, however.			
7 Ricoh Aficio CL3500N — $500 — find.pcworld.com/55218	**77** Good	• Text quality: Fair • Graphics/photo quality: Poor/Fair • Tested speeds (ppm): 19.3 text/4.3 graphics	• 22 ppm text • 22 ppm graphics • 1200-by-1200-dpi maximum resolution
► **Bottom line:** Excellent paper handling is the CL3500N's best feature, though print quality for both graphics and text was disappointing.			
8 Oki Printing Solutions C5500n — $595 NEW — find.pcworld.com/56552	**77** Good	• Text quality: Very Good • Graphics/photo quality: Good/Fair • Tested speeds (ppm): 23.9 text/5.0 graphics	• 24 ppm text • 20 ppm graphics • 1200-by-600-dpi maximum resolution
► **Bottom line:** This mid-priced GDI-based printer comes equipped with dual paper trays and turned in fast print speeds, especially for graphics.			
9 Xerox Phaser 6180/N — $499 NEW — find.pcworld.com/56551	**76** Good	• Text quality: Very Good • Graphics/photo quality: Fair/Fair • Tested speeds (ppm): 23.7 text/1.9 graphics	• 26 ppm text • 20 ppm graphics • 600-by-600-dpi maximum resolution
► **Bottom line:** The Phaser 6180/N printed high-quality text at decent speeds in our tests, but color images were more of a challenge for it.			
10 Brother HL-2700CN — $500 — find.pcworld.com/45958	**75** Good	• Text quality: Very Good • Graphics/photo quality: Fair/Poor • Tested speeds (ppm): 24.4 text/2.6 graphics	• 31 ppm text • 8 ppm graphics • 2400-by-600-dpi maximum resolution
► **Bottom line:** This model prints text fast, but letters looked fuzzy and graphics were dark. Compact design has a letter-size paper limit.			

CHART NOTE: All prices and ratings are as of 3/7/07. **FOOTNOTE:** [1] Print speeds are as listed by the vendor.

Palm's Sleek, Sophisticated Treo 750

PDA PHONE

TEST Center DON'T LET the sleek design of Palm's **Treo 750** fool you: This phone is a serious business device. It includes mobile Office apps, world phone capabilities, and high-speed data access, but suffers from poor battery life.

Available from AT&T's Cingular Wireless unit for $500

Treo 750

Palm

PCW Rating 72 **Good**

Users will appreciate the 750's impressive array of software and its high-speed data access.

List: $500 (with a two-year contract from Cingular)

find.pcworld.com/56531

(with a two-year contract), the 750 offers support for the 200-to-300-kbps UMTS service. Though the 750 doesn't come ready to support Cingular's speedier HSDPA network, accessing e-mail and the Web over UMTS was reasonably fast. (A free firmware upgrade, expected later this year, will add HSDPA support.)

The soft-touch, midnight-blue casing is attractive, and the device is comfortable to hold. Call quality and volume were good, but talk-time battery life was not: The Treo 750 lasted for a skimpy 3 hours, 53 minutes in our lab tests—very close to Palm's advertised talk time of 4 hours, but neverthe-

less the lowest among all PDA phones we've tested recently.

The unit's QWERTY thumb keyboard is easier to use than were those on past Treos, but it feels cramped, and the keys are stiff compared with those on competing PDA phones.

The keyboard does permit you to take advantage of the Windows Mobile–based PDA phone's messaging capabilities. These include both a mobile version of Outlook—for accessing POP3 and IMAP e-mail accounts—and Cingular's Xpress Mail application, which provides access to corporate e-mail accounts.

The Treo 750 is an impressive device—and it will be bet-

THE TREO 750 has an internal antenna and a slimmer design.

ter once it adds HSDPA support. But keep your battery charger handy; you'll need it.
—*Liane Cassavoy*

CrossoverGPS Is Too Big to Take for a Walk

GPS

WITH ITS WATERPROOF case and rubberized edge protector, Magellan's **CrossoverGPS** is designed to withstand the bumps, dust, and precipitation that sometimes attend outdoor activities. Unfortunately, the $500 device is a bit too big for a person to carry

MAGELLAN'S GPS DEVICE has a protective case for outdoor use.

comfortably while walking.

As an in-car guide, though, Magellan's GPS shines: The 3D maps on the 3.5-inch display show your route distinctly, the voice directions emerge loud and clear, and you receive plenty of warning when turns or other maneuvers follow one another quickly.

On the road, I was pleased with the routes the CrossoverGPS suggested; and when I drove off course, the device calculated a revised route for me in just a couple of seconds.

Using the unit's Outdoor application to navigate on foot, though, is far less rewarding. To specify a location for the device to direct you to, you must either choose it on the map or enter its latitude and longitude. You can't specify street addresses,

as with the in-car navigator.

The CrossoverGPS is also a tad too hefty to tote around with comfort. It measures 3.4 inches tall by 4.3 inches wide by 1.1 inches deep and weighs 8.5 ounces (9.4 ounces when bundled up in its Sport Guard protective wrapper), making it unduly cumbersome to carry on an extended outing. But you needn't worry about the CrossoverGPS running out of power on anything short of a trek along the Pacific Crest Trail. In my tests, the device ran for 7 hours, 45 minutes on a single battery charge; Magellan claims that the product has a battery life of 8 hours.

Media-player applications on GPS devices tend to be bare-bones affairs, and that's the case with the Crossover-GPS. The built-in speaker may suffice for projecting driving

directions, but it isn't satisfactory for reproducing music.

Besides wishing that I could enter street addresses in the device while it was in walking mode, I regretted not being able to listen to music files while viewing the street or trail map. Frustratingly, Magellan doesn't let you use both applications simultaneously.

With a little less heft and a little more guidance for pedestrian users, the CrossoverGPS could be a navigator for all methods of locomotion, and in all types of weather.
—*Dennis O'Reilly*

CrossoverGPS

Magellan

PCW Rating 80 **Very Good**

Pedestrians are likely to find this rugged GPS device a bit too bulky.

List: $500

find.pcworld.com/56538

Transcend
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Music

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Your Perfect Mobile Partner

microSD™ Card

Transcend's microSD™ card is the perfect choice to get the most out of your mobile devices. Give your mobile phone or PDA the extra memory that will allow you to store music, videos, and pictures – all in the convenience of a memory card about the size of a fingernail. 2GB: about 2000 pictures or 480 MP3 songs.

Hi-Speed with SLC Flash Inside.	Normal-Speed with MLC Flash Inside.
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SD™

Multi-Card Reader M2

* Supports microSD™ without Adapter

LIFETIME Warranty
* Excludes Multi-Card Reader M2

* Please see Warranty Card for details and limitations

Go to find.pcworld.com/56660

SightSpeed 6.0 Lets You Make Video Calls Easily

VIDEOCONFERENCING

VIDEOCONFERENCING software has come a long way since the late 1990s, when unsophisticated programs and limited bandwidth made participants sound and look like astronauts aboard the Space Shuttle. In those days I half-expected to see a coffee mug float across the screen, but no longer. I tested the new video-calling app SightSpeed 6.0, and though its video quality wasn't perfect, I was impressed by its performance—in particular at syncing audio and video.

SightSpeed is available in two versions, a free edition and a Pro package; the latter costs $5 per month and adds features designed for business users, such as multiparty video calls and priority tech support. Both versions require

WHEN YOU'RE CONNECTED on a video call, SightSpeed lets other users know that you're busy so your call won't be interrupted.

a Webcam plus devices for audio input (microphone) and output (speakers or a headset). To try it out, I used various combinations of speakers, Webcams with integrated microphones, and headsets with embedded microphones.

Downloading and installing the software is a snap. It automatically locates your audio and video source, and helps you adjust their settings for peak performance. Following the initial setup you can tweak the settings, but unfortunately you can't do so when you're on a call. That means that if you're in the middle of a conversation and you notice, for example, that the tint of your camera is slightly off, you will have to hang up before attempting to correct the problem.

Version 6.0 sports a new tabbed interface for access to all of SightSpeed's features. To add a contact, you simply enter an e-mail address on the Contacts tab; if the person is already a SightSpeed user, you'll see their name appear on your list. If the person isn't a user, SightSpeed will issue an e-mail invitation to download the software. All of your contacts are listed on the main screen, with a green icon indicating when they are available. When you mouse over a name, you'll see icons for connecting via video call, PC-to-

PC voice call, or text chat. In addition, you can send video e-mail to your contacts.

According to SightSpeed, the video quality in version 6.0 is 25 percent better than that of past versions. I can't verify that claim, but overall the video seemed quite good, although some colors looked dim.

When I tested SightSpeed at home over a cable modem, the video looked very clear, with audio and video in sync. When I used a speaker-and-microphone setup, my caller noticed an echo. This probably occurred because my microphone picked up her voice as it came out of my speakers, so she heard her own words shortly after speaking them. The problem vanished when I switched to a headset.

The quality of SightSpeed's PC-to-PC voice calls is on a par with that of services such as Skype. In version 6.0, the text-chat feature occupies its own window, and as a result it feels more like a stand-alone IM app (though you can chat only with other SightSpeed users).

Though you wouldn't mistake a SightSpeed video call for a movie, the image quality is good. Unlike PC-calling apps such as Skype that have added video features, SightSpeed's focus has been on video from the start—and it shows.

—*Liane Cassavoy*

SightSpeed 6.0

SightSpeed

PCW Rating `88` **Very Good**

This easy-to-use, no-cost program supports good-quality videoconferencing and calling.

Free

find.pcworld.com/56790

ASK OUR EXPERTS

Laptop Board Swaps?

I HAVE BEEN searching for a replacement motherboard for a Dell Inspiron 8100. Dell offered to do the repairs for $499, which would cover a new case, palm rests, and anything else except the LCD. But I just need the motherboard, which it won't sell direct.   —*Baci, via PCWorld.com Forums*

Senior Editor Anush Yegyazarian responds: Replacing the motherboard in a laptop is not for the faint of heart. But if you're tech-savvy and have experience poking around in the guts of your system, try searching on eBay for a used or refurbished replacement—I found some for $100 to $130—and consult FRC Tech's disassembly guide (find.pcworld.com/56588) to get started. The replacement operation can take an hour or two. Don't attempt this yourself unless your warranty has already expired; doing so will void the warranty, according to Dell and HP.

Replacing your LCD screen on your own is much easier. Vendors like Screentek (www.screentekinc.com) sell kits for hundreds of dollars less than laptop manufacturers do.

IN THE OFFICE, OUT OF THE BOX.

Motion™ recommends Windows Vista™ Business.

Motion *Computing*®

Get down to business with the option-packed LE1700 Tablet PC from Motion Computing.® This next generation Tablet PC is powered by the Intel® Core 2 Duo processor and offers ultimate performance and a demanding day's worth of battery life. Move your business forward with the latest mobile technology by choosing the Motion LE1700wт with WriteTouch technology and easily switch from touch screen to pen mode, throughout your day. With optional embedded wireless broadband (WWAN), you can now conduct business from anywhere, no matter where your work takes you.

Choose the Motion LE1700 Tablet PC today and bring your work performance to a new level.

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Duo   *inside*™
Dual-core.
Do more.

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TOP 10 DIGITAL CAMERAS

New Cameras Know Your Face Anywhere

TEST Center IN DIGITAL cameras, the gee-whiz feature of the moment is facial recognition, which aims to improve portraits by adjusting the exposure and by focusing more accurately. Two cameras we tested this month have this feature: Fujifilm's $350 FinePix F31fd and Canon's $450 PowerShot SD900 (the latter missed our chart, due in part to its high price).

The feature helped the FinePix F31fd deliver better exposures in backlit environments; we noticed that the camera's portrait mode by itself some-

FUJIFILM'S FINEPIX F31FD uses facial recognition to improve portraits, and takes 500-plus shots on one battery charge.

times left our subjects' faces underexposed. Similarly, the impressive PowerShot SD900 produced accurately exposed shots. Both models focused sharply on our subjects and avoided mistakenly homing in on a strongly contrasted edge in the background.

—*Eric Butterfield*

ONLINE
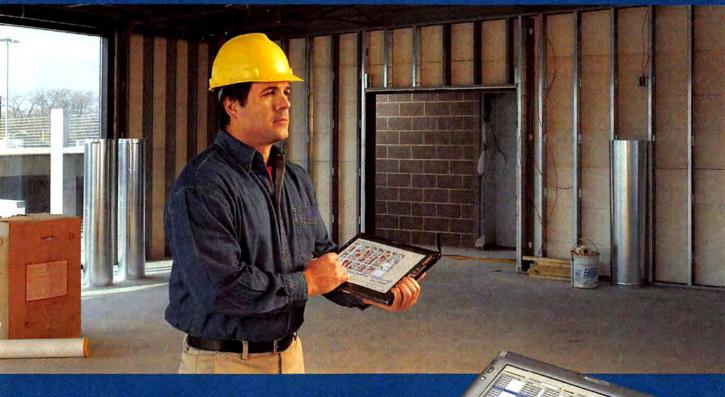
FOR MORE INFORMATION on the cameras reviewed in this month's chart, including testing details, see find.pcworld.com/55287.

	POINT-AND-SHOOT CAMERA	PCW Rating	Performance	Features and specifications
1	**HP Photosmart R727** **Best BUY** $149 find.pcworld.com/54050	**82** Very Good	• Image quality: Good • Battery life: Good • Overall design: Good	• 6.1 megapixels • 39mm-to-118mm zoom • 12 scene modes • 6.4 ounces
	▶ **Bottom line:** The R727 has a bright 2.5-inch LCD and features such as panorama stitching and image advice, but it lacks manual settings.			
2	**Nikon Coolpix S6** $225 find.pcworld.com/54054	**82** Very Good	• Image quality: Good • Battery life: Good • Overall design: Very Good	• 6.0 megapixels • 35mm-to-105mm zoom • 15 scene modes • 4.9 ounces
	▶ **Bottom line:** Thin model has Wi-Fi, a sharp 3-inch LCD, and an easy-to-use selector dial and thumb pad. Some common controls aren't included.			
3	**Canon PowerShot A540** $190 find.pcworld.com/54046	**82** Very Good	• Image quality: Good • Battery life: Poor • Overall design: Good	• 6.0 megapixels • 35mm-to-140mm zoom • 16 scene modes • 6.6 ounces
	▶ **Bottom line:** Low-priced model offers many manual controls, a generous 4X zoom, and a wide-screen mode. Battery life was unimpressive.			
4	**Canon PowerShot SD630** $275 find.pcworld.com/54056	**79** Good	• Image quality: Good • Battery life: Good • Overall design: Very Good	• 6.1 megapixels • 35mm-to-105mm zoom • 13 scene modes • 5.2 ounces
	▶ **Bottom line:** Compact body sports a big (3-inch) LCD. You get a wide-screen mode and exposure compensation, but no image stabilization.			
5	**HP Photosmart R927** $269 find.pcworld.com/53582	**78** Good	• Image quality: Very Good • Battery life: Poor • Overall design: Very Good	• 8.2 megapixels • 35mm-to-105mm zoom • 12 scene modes • 7.0 ounces
	▶ **Bottom line:** The R927 carries a 3-inch LCD and performs in-camera panorama stitching, albeit slowly. A camera dock is included at this price.			
6	**Kodak EasyShare C663** $200 find.pcworld.com/52044	**78** Good	• Image quality: Good • Battery life: Very Good • Overall design: Good	• 6.0 megapixels • 34mm-to-102mm zoom • 14 scene modes • 7.6 ounces
	▶ **Bottom line:** The C663 has a button to mark images for sharing or e-mailing, and menus are easy to use. The joystick knob is too small, though.			
7	**Kodak EasyShare C875** $200 NEW find.pcworld.com/56546	**78** Good	• Image quality: Good • Battery life: Poor • Overall design: Good	• 8.0 megapixels • 37mm-to-185mm zoom • 21 scene modes • 7.4 ounces
	▶ **Bottom line:** This point-and-shoot is easy to use, has a long zoom, and comes with many appealing features. However, battery life is short.			
8	**Sony Cyber-shot DSC-W100** $250 find.pcworld.com/54142	**77** Good	• Image quality: Good • Battery life: Superior • Overall design: Fair	• 8.1 megapixels • 38mm-to-114mm zoom • 6 scene modes • 7.0 ounces
	▶ **Bottom line:** The unit has a high ISO 1250 setting and a 455-shot battery life. It shoots in wide-screen mode but lacks a shutter-priority mode.			
9	**Fujifilm FinePix F31fd** $350 NEW find.pcworld.com/56545	**77** Good	• Image quality: Very Good • Battery life: Superior • Overall design: Very Good	• 6.3 megapixels • 36mm-to-108mm zoom • 15 scene modes • 6.9 ounces
	▶ **Bottom line:** The F31fd delivers long battery life, and its face-detection utility improves portraits. Some common features are absent, though.			
10	**Kodak EasyShare C743** $160 find.pcworld.com/55188	**77** Good	• Image quality: Good • Battery life: Good • Overall design: Poor	• 7.1 megapixels • 37mm-to-111mm zoom • 13 scene modes • 7.6 ounces
	▶ **Bottom line:** This basic model is easy to operate and offers high image quality, but it omits manual controls and advanced features.			

CHART NOTE: Prices and ratings are as of 2/9/07.

PHOTOGRAPH: MARC SIMON

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Camcorder Records HD Movies to SDHC Cards

V I D E O

I WAS SKEPTICAL about a camcorder that records high-definition video onto an SD Card. What kind of compression is going on to make it fit? My doubts soon faded—the Panasonic **HDC-SD1** captures (and stores) video of exceptional quality. However, for the moment, the compression format that it uses introduces a different problem: It leaves you unable to edit your video.

At its best quality setting, the $1500 HDC-SD1 records 40 minutes of 1080i video to an included 4GB SDHC Card (the HDC-DX1, a similar model, records to miniDVD and costs $100 less). Both use the AVCHD format developed by Panasonic and Sony. When I tested the HDC-SD1, no video editing software supported the format, but Sony says that it will offer a free update this spring to allow its Vegas video editor to import such files. Forget about using the software included with the camcorder; although you can use the app to export standard-definition video to a DVD, it's nearly useless beyond that.

Since the camcorder has component outputs and an

PANASONIC'S HDC-SD1 is small and (almost) totally tubular.

HDMI port, however, you can play back the unedited footage in high-definition on an HDTV set. Video I captured in well-lit settings looked great, and even video taken in relatively dim, indoor rooms looked surprisingly good— and much better than footage

from the standard-definition camcorders I've seen.

Right now, the video editing limitations are significant, but once the software catches up and HD disc recording becomes affordable, the HDC-SD1 will be high on my list.

—Alan Stafford

HDC-SD1

Panasonic

PCW Rating 87 Very Good

This camcorder can capture outstanding footage, but you can't edit the video—yet.

Street: $1500

find.pcworld.com/56524

Adobe's Lightroom Processes Gobs of Images

I M A G I N G

MY BIGGEST question about **Photoshop Lightroom**, Adobe's new $299 photo management and processing application designed for professional photographers, was: Why should I work with this instead of with

another Adobe application?

After trying Lightroom, I got some answers. Photoshop Elements has a great organizer and good editing tools but no batch image-processing capabilities. Photoshop CS3 has much more powerful edit-

ing tools but no organizational tool. And the Bridge organizer that ships with Adobe's Creative Suite serves the multiple applications in that suite, not just Photoshop.

Lightroom, meanwhile, has tools for importing, managing, and processing large quantities of images. Its basic tagging system isn't nearly as attractive as Elements', but it allows you to search and find images by an incredible array of metadata elements—for example, by camera lens.

You'll find few of Photoshop's micro-level features in Lightroom—it lacks selection tools, for instance. But you do get a huge variety of color and exposure adjustments. Unlike Photoshop, Lightroom writes edits to a database rather than

to the original files, so they're nondestructive. And when you print multiple images on a page, sliders let you adjust how many rows and columns you want on the page; you see the results in a live preview.

Lightroom is a sophisticated, intelligent application. I just wish that its features were included in other Adobe programs; I am a little annoyed that it's an extra expense.

—Alan Stafford

Photoshop Lightroom

Adobe

PCW Rating 82 Very Good

This image-management app is an excellent tool for professional photographers, but some people may balk at paying extra for it.

Street: $299

find.pcworld.com/56524

YOU CAN USE keyboard keys in Lightroom to attach flags, ratings, and color codes, thereby processing a large batch of images quickly.

FreshBooks.com Helps Businesses Get Paid

IF YOU RUN a small service business and want a simple way to bill customers, Fresh-Books.com could be just what you need. This Web-based invoicing service is easy to set up and use, and it's relatively inexpensive at just $14 per month if you have fewer than 25 clients. (For a higher fee, you can use it to manage as many as 5000 customers.) If you want a complete accounting package, though, you must supplement FreshBooks with third-party software.

FreshBooks handles only invoicing, accounts receivable, collections, and basic time tracking. You'll need to use a small-business application such as Intuit's QuickBooks or Sage's Simply Accounting

to manage other aspects of your books, including paying expenses and preparing financial statements, such as profit and loss. You can export data to and import it from recent versions of any accounting program that can work with data in the CSV (Comma Separated Values) format.

One alternative to Fresh-Books is the Online Edition of Intuit's QuickBooks, which is priced at $20 per month (and up) and performs a generally broader range of accounting functions than FreshBooks does. The online QuickBooks doesn't support online invoice payment, however (the packaged program will support it, but only with an add-on); and if you require time tracking, you'll need to get the $10-per-

USING A SERVICE such as PayPal, customers can pay their invoices on FreshBooks electronically, speeding up your account collections.

month Sales Package add-on.

Because FreshBooks is designed for service businesses such as consultants, it doesn't track inventory. That omission makes it unsuitable for businesses that sell products, unless they have no need to track quantities of stock on hand. And while FreshBooks' parent company, 2ndSite, says that the service has more than 130,000 users based in more than 100 countries, it doesn't support multiple currencies in the same account.

FreshBooks lets you import a customer list from an accounting application or enter customer information directly. Creating an invoice in Fresh-Books using an online form is simple. You can customize the look of the invoice by changing the colors and adding your company logo. You can notify your client of the invoice by e-mail (they receive a link to view the invoice online; you do not send the invoice itself) or have it printed remotely and then sent via U.S. Mail—an extra-cost ser-

vice (the fee is $1.39 each, but you can get quantity discounts; invoices sent outside the U.S. and Canada cost double).

Your customers can visit the FreshBooks site to view their invoices and account-history details. You can allow them to dispute invoices or to pay electronically with a debit or credit card through one of ten supported payment gateways, including PayPal (normal user charges apply). This convenient capability ranks as one of the program's highlights.

FreshBooks has its limitations, but if you don't need all the capabilities of QuickBooks or the like, this online service will handle your billings and collections with aplomb.

—*Richard Morochove*

FreshBooks.com
2ndSite
PCW Rating **74** **Good**
This easy-to-use service handles invoicing but lacks complete accounting features.
List: $14/month for a single user managing up to 25 customers
find.pcworld.com/56570

TECH TREND

Touch Screens Take Off

ONE OF OUR "100 Fearless Forecasts" (find.pcworld.com/56556) last year said that touch-screen interfaces would become commonplace, and back then we noted the amazing prototypes that NYU researcher Jeff Han had developed. Though not quite as futuristic, several touch-screen products are now hitting the mainstream.

Lenovo's ThinkPad X60 Tablet with MultiTouch (available now) can be controlled with either a stylus or a finger. Apple's button-free iPhone (which reportedly is slated to ship in June) responds to gestures formed by multiple, simultaneous finger touches.

HP's TouchSmart IQ770 all-in-one desktop PC (reviewed at find.pcworld.com/56557) also lets you poke about its 19-inch display. However, though the Windows Vista operating system supports multipoint touch screens, the HP's screen recognizes only single touches. —*Danny Allen*

TOP 10 HARD DRIVES

Samsung's 500GB Internal Hard Drive Wins

TEST Center GIGANTIC, CHEAP, and fast are flattering adjectives for a hard drive—and they perfectly describe Samsung's SpinPoint T Series HD501LJ 500GB internal drive, which earned our Best Buy distinction. We also tested two 750GB drives: a Seagate unit with an 8MB cache, and a faster CMS Products drive with a 16MB cache. CMS Products does not manufacture drives; its 750GB

SAMSUNG SPINPOINT T Series HD501LJ: big, cheap, and fast.

offering is a repackaged Seagate model that comes with software for transferring data from another drive and creating a bootable disc. CMS Products' 500GB drive also comes with the software; it is a repackaged Western Digital drive, though not the same Western Digital model that outranked it on our chart.

—Narasu Rebbapragada

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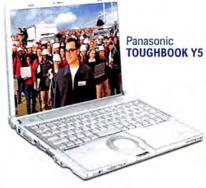
FOR MORE INFORMATION on the hard drives we reviewed in this chart, including testing details, go to find.pcworld.com/56534.

	INTERNAL HARD DRIVE	PCW Rating	Performance	Features and specifications
1	**Samsung SpinPoint T Series HD501LJ** **Best BUY** $150 NEW find.pcworld.com/56507	**87** Very Good	• Overall performance: Superior • Copy files: 119 seconds • File search: 162 seconds	• 500GB • 7200 rpm • SATA-300 • Cost per gigabyte: $0.30
	► **Bottom line:** Among the 500GB competitors, Samsung's model performed the best and cost the least.			
2	**CMS Products 750GB SATA Internal Drive** $386 NEW find.pcworld.com/56496	**78** Good	• Overall performance: Very Good • Copy files: 138 seconds • File search: 167 seconds	• 750GB • 7200 rpm • SATA-300 • Cost per gigabyte: $0.51
	► **Bottom line:** This repackaged Seagate drive costs slightly more than Seagate's version but also comes with data-transfer software.			
3	**Western Digital Caviar SE16 500GB** $200 NEW find.pcworld.com/56510	**77** Good	• Overall performance: Very Good • Copy files: 142 seconds • File search: 161 seconds	• 500GB • 7200 rpm • SATA-300 • Cost per gigabyte: $0.40
	► **Bottom line:** This inexpensive 500GB model is fast and comes loaded with the freely available Google Desktop software.			
4	**CMS Products 500GB SATA Internal Drive** $232 NEW find.pcworld.com/56497	**76** Good	• Overall performance: Very Good • Copy files: 147 seconds • File search: 162 seconds	• 500GB • 7200 rpm • SATA-300 • Cost per gigabyte: $0.46
	► **Bottom line:** Though this repackaged Western Digital Caviar drive carries a price premium, it has solid data-transfer software.			
5	**Hitachi Deskstar 7K400** $165 NEW find.pcworld.com/56500	**75** Good	• Overall performance: Very Good • Copy files: 162 seconds • File search: 158 seconds	• 400GB • 7200 rpm • SATA-300 • Cost per gigabyte: $0.41
	► **Bottom line:** Hitachi's inexpensive 400GB drive performs well, but 500GB drives are comparable in cost these days.			
6	**Hitachi Deskstar T7K500** $204 NEW find.pcworld.com/56498	**75** Good	• Overall performance: Good • Copy files: 166 seconds • File search: 159 seconds	• 500GB • 7200 rpm • SATA-300 • Cost per gigabyte: $0.41
	► **Bottom line:** It's difficult to recommend this drive when other 500GB models are cheaper and faster.			
7	**Seagate Barracuda 7200.10 750GB SATA** $409 NEW find.pcworld.com/56503	**73** Good	• Overall performance: Good • Copy files: 157 seconds • File search: 169 seconds	• 750GB • 7200 rpm • SATA-300 • Cost per gigabyte: $0.55
	► **Bottom line:** Seagate's 750GB drive has only an 8MB buffer; it performed worse than the CMS Products equivalent with 16MB of buffer.			
8	**Seagate Barracuda 7200.10 500GB SATA** $204 NEW find.pcworld.com/56506	**73** Good	• Overall performance: Good • Copy files: 154 seconds • File search: 167 seconds	• 500GB • 7200 rpm • SATA-300 • Cost per gigabyte: $0.41
	► **Bottom line:** This model, with only an 8MB cache, was an average performer. It carries a five-year warranty, however.			
9	**Western Digital Caviar SE16 400GB** $170 NEW find.pcworld.com/56513	**71** Good	• Overall performance: Good • Copy files: 148 seconds • File search: 171 seconds	• 400GB • 7200 rpm • SATA-300 • Cost per gigabyte: $0.43
	► **Bottom line:** Western Digital's 400GB drive performs marginally worse but costs slightly more than its Hitachi counterpart.			
10	**Samsung HD252KJ** $92 NEW find.pcworld.com/56508	**71** Good	• Overall performance: Good • Copy files: 131 seconds • File search: 169 seconds	• 250GB • 7200 rpm • SATA-300 • Cost per gigabyte: $0.37
	► **Bottom line:** This sub-$100 drive is a solid performer, but the company backs it with only a one-year warranty.			

CHART NOTE: Prices and ratings are as of 3/7/07.

Seagate's Elegant Drive Delivers

TEST Center "SLEEK" ISN'T A typical descriptor for a desktop hard drive. Nevertheless, it is the first word that comes to mind for describing Seagate's **FreeAgent Pro**, one of four models in the company's new FreeAgent line of external hard drives—units that range in size from 12GB to 750GB. I looked at the FreeAgent Pro,

the biggest drive, and was left impressed by both its aesthetics and its operation.

The $350 drive I tested has several noteworthy attributes. One is the FreeAgent Tools software, which provides an accessible, easy-to-use interface for creating restore points so that you can roll back your PC to a previous state (though in actuality, this part just puts Seagate's face on Windows XP's System Restore feature). Also included is Seagate's Auto-Backup application (based on Memeo's software of the same name), which permits you to schedule automated backups to any of multiple locations—for example, to a flash drive,

an MP3 player, or even an on-line photo sharing service.

The unit I tried was bundled with a module that enabled me to connect it via USB 2.0 or eSATA. For $30 more, you can buy a drive that ships with both this module and one that has two FireWire 400 ports.

The PC World Test Center's evaluation of the drive showed it to be an effective performer. It required just 80 seconds to copy 3.06GB of files and folders from our test system via an eSATA connection, besting the next-fastest drive, Seagate's eSATA External Hard Drive, by 10 seconds.

The FreeAgent Pro comes with a terrific software bundle

THE FREEAGENT PRO'S upright design enhances its sleek look.

and is a strong performer. Add in Seagate's standard five-year warranty, and this hard drive makes an attractive package.

—*Melissa J. Perenson*

FreeAgent Pro

Seagate Technology

PCW Rating **67** **Very Good**

This excellent drive sports an eye-catching design, along with a well-rounded software suite.

Street: $350

find.pcworld.com/56722

Microsoft's Web-Design Software Grows Up

MICROSOFT HAS finally embraced Web standards. The proof is its new **Expression Web** program, which puts Cascading Style Sheets (CSS), XML, and other standards at the core of the application's site design and management strategy.

From a developer's perspec-

tive, Expression Web feels a lot more grown-up than Front-Page. While the program still shields Web designers from much of the code that underlies their pages, the resulting sites should meet all Web design and accessibility standards. The trade-off for all of the added functionality is the

hours of training the program requires for noncoders.

Expression Web goes to considerable pains to make CSS as approachable as possible. For example, when you choose a style, a drop-down menu lists the attributes you can use for that style. The IntelliSense function enables you to type just a letter or two to select options, and you can drag small pieces of code from one of the program's palettes directly onto your page to add navigation elements, form fields, or other components.

But even with all that help, making the switch to CSS requires quite a bit of training. People migrating to this program from FrontPage should be prepared to set aside a day or two to get up to speed.

Another feature that many designers will welcome is Ex-

pression Web's support for XML and Extensible Style-sheet Language Transformations (XSLT), which permits you to drag and drop links to dynamic XML data into your pages and format them easily for presentation on the Web.

Despite a few lingering traces of old FrontPage features (such as the spinning-globe icon you see as files transfer), Expression Web is a giant step up from that program.

—*Dennis O'Reilly*

EXPRESSION WEB ALLOWS you to edit your site's CSS style sheets easily by selecting from a drop-down menu of available styles.

Expression Web

Microsoft

PCW Rating **80** **Very Good**

With its focus on CSS and XML, this app lets you create modern, data-driven sites—but it presents a difficult learning curve.

List: $299 ($99 upgrade from FrontPage)

find.pcworld.com/56540

Nokia's Nifty Music Phone Shines

AT FIRST GLANCE, you may not realize that the Nokia 5300 XpressMusic Phone is a cell phone at all. With its external music controls and large screen, you could easily mistake it for a digital audio player. And you wouldn't be wrong: The 5300 is almost equal parts music player and cell phone, and its music features are among the best we've seen on a phone.

When closed, this slider-style phone looks somewhat bulky, but it features a gorgeous 2-inch display. The music controls frame the display; to the left are keys for scrolling through your digital music collection, along with buttons for playing and pausing your tracks. Volume keys sit on the right side of the handset.

The music player lets you quickly scroll through your music library, which you can sort by artist, album, genre, composer, or playlist. The handset comes with Nokia's Music Manager application for organizing your library on your PC, a USB cable for transferring tunes, and a 1GB microSD card for storing files.

YOU COULD EASILY mistake the 5300 for an audio player.

The Nokia's audio quality won't rival that of your iPod, but it beats what we've heard from most music phones. Songs occasionally sounded tinny when played over the external speaker, but overall the audio was quite good.

As a phone, the 5300 works very well. Its rubbery exterior makes it comfortable to hold, and it slides open nicely with one hand. Call quality and volume were impressive, but the unit's talk-time battery life was merely fair: It lasted 5 hours, 6 minutes in our lab tests.

The 5300 also includes a 1.3-megapixel camera; still-life photos came out great, but like many camera phones, this one suffers from a significant shutter delay, so capturing moving subjects is hard. The phone takes video clips, too, but they look pixelated.

Overall, the 5300 is impressive, especially when you factor in the price: T-Mobile is offering the phone for $150 with a two-year contract. That is about what you might pay for a dedicated MP3 player—so it's an excellent price for a device that makes calls, too.

—*Liane Cassavoy*

5300 XpressMusic Phone
Nokia
PCW Rating 77 Good
This handset offers excellent music playback features and works well as a phone, too.
List: $150 (with a two-year contract from T-Mobile)
find.pcworld.com/56558

Earbuds Let You Plug In, Block Out the World

WALKING THROUGH A noisy downtown is a lot more enjoyable if you're wearing a pair of Shure's SE210 sound-isolating earbuds. The preproduction set that I tried delivered full, rich sound and kept all but the loudest outside noises from intruding on my music.

The set sells for $150, and that may seem like a big investment considering the low price of some of today's portable audio players. But one reason those players are so affordable is that they come with mediocre headphones. When I compared the Shure earbuds with

SHURE'S EARBUDS BLOCK out all but the loudest external noises.

those included with an Apple iPod, I found the sound quality of the SE210 much better, adding depth and reproducing subtleties I hadn't noticed with the Apple earbuds. I also thought the Shure set outperformed the $99 Creative Zen Aurvana In-Ear Headphones, which I felt suffered from a harsh-sounding upper midrange that was unpleasant

to listen to and likely to cause me ear fatigue over time. The SE210's full bass response and crisp highs make for a pleasant listening experience.

The SE210, the entry-level model in Shure's new SE product line, has a single microspeaker for each channel. In comparison, the $350 SE420 earbuds each have a dedicated tweeter and woofer. I tried the SE420 as well, and appreciated that pair's better-defined low end and subtly smoother response in upper frequencies. That extra fine-tuning, however, comes with a price that's more than double what you'd pay for the SE210.

The short cable of the SE210 is ideal if you have a small

flash player that you want to clip to your jacket or put in a shirt pocket. The included 3-foot extension cable allows you to stash your player in a bag.

Shure's SE210 earbuds may seem expensive, but the price is a small one to pay for full-bodied sound and the ability to enjoy your music without any interruptions from the noisy outside world.

—*Eric Butterfield*

SE210
Shure
PCW Rating 86 Very Good
Rich audio makes these earbuds a great accompaniment to your music player, but they're pricey.
List: $150
find.pcworld.com/56542

New Ways to Watch Movies on Your PC

V I D E O

REMEMBER WHEN YOU had to drive to a store to rent a movie? Two new services—one from Netflix, the king of online DVD rentals, and the other from Wal-Mart, the king of retail—aim to make that a faint memory.

If you're a Netflix subscriber, the company's **Instant Movie Watching** feature lets you watch streaming movies on your PC without waiting for a DVD to arrive in the mail—or for a movie to download. Wal-Mart's **Video Downloads** store, meanwhile, allows anyone to purchase and download flicks for watching on a PC or a portable media player.

The Instant Movie Watching service will be included with all Netflix subscriptions, which range in price from $5 to $48 per month, for no additional fee. Each month, users are allotted a number of viewing hours that corresponds to the monthly fee for their account. If you subscribe to the

NETFLIX'S APP LETS you pause, fast-forward, and rewind movies.

$15-per-month service, for example, you'll receive 15 hours of instant movie watching.

Wal-Mart's service, currently widely available in beta, follows the iTunes Music Store model: It offers TV shows and movies for download and purchase for between $1.96 and $14.88. Once you buy a video, you own it. You can play it on the computer that you used to purchase it, or transfer it to up to three portable devices.

MOVIE SELECTION

NETFLIX SAYS THAT its service currently has 1000 titles ready for instant viewing and will offer 5000 by the end of the year. This modest quantity of available titles is the service's biggest drawback; I saw only a handful of movies from 2006 listed, and of those I recognized few of the titles. Netflix attributes its limited offerings to the reluctance of movie studios to release their titles for electronic distribution, but Wal-Mart's service has a much better selection. The store currently offers more than 3000 titles, and I saw many newer films, including *The Departed* and *Little Miss Sunshine*.

With Netflix Instant Movie Watching, you must be connected to the Internet to watch a movie. Though video quality was decent, it never matched that of a DVD; the video often seemed blurry, and I noticed occasional pixelation. Wal-Mart's store permits you to download a movie in a portable format, which is compressed for transfer to a portable device, or in a standard format, which is designed for playing on your PC.

Unfortunately I had some problems getting my movies to play after they downloaded. You initiate the playback from within the Wal-Mart Movie Downloader app, which identifies all of your available titles.

When I tried to play *Running With Scissors*, I was repeatedly told that I did not have the rights to do so, even though I had just downloaded and purchased it. Wal-Mart's customer service reps were unable to solve the problem, and I never could watch the movie. A similar issue arose with another title that I downloaded on another PC: Every time I tried to play the movie, I ran into the same error message. But on that PC, after I clicked Play four times, the error disappeared and the movie started. These difficulties may be due to the fact that the service is in beta, but they still hampered my ability to watch and enjoy movies that I had paid for.

Overall I felt that Netflix Instant Movie Watching offered a smoother experience. The service is severely held back by its limited array of titles, but I like that it's included with an existing Netflix membership. Wal-Mart Video Downloads allows you to watch your videos offline and has a much broader array of movie choices. If you can't get a movie to play, however, being able to select it doesn't mean a lot.

—Liane Cassavoy

Instant Movie Watching
Netflix
PCW Rating `80` **Very Good**
This service offers an easy way to watch movies on your PC, but its selection of titles is meager.
Free with Netflix subscription ($5 to $48 per month)
find.pcworld.com/56536

Video Downloads
Wal-Mart
PCW Rating `75` **Good**
Wal-Mart's beta service provides plenty of titles, but playback problems mar the experience.
List: $1.96 to $14.88 per download
find.pcworld.com/56537

CLICK A BUTTON in Wal-Mart's player to view movies full-screen.

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– Venture Development

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WANTED:
Nimble Security Solutions

Bloated and sluggish.

That's the state of most workstations equipped with typical security software.

Computer users want protection that operates nimbly and without complexity. But many security software suites have been justly criticized for slowing systems to a crawl, being too complex, and providing inadequate or inconsistent protection. Instead of performing efficiently and transparently, resource-hogging virus scans and never-ending alerts deter computer users from their work.

Access Markets International (AMI) Partners, Inc. last year said small and medium businesses (SMBs) worldwide would spend $11.4 billion on beefing up their IT security and infrastructure in 2006. Despite that investment, poorly performing or overly intrusive security software often causes users to turn off protection or ignore policy so they can go about their tasks without interference.

As the range of malicious threats has expanded, many software vendors have responded by acquiring other programs to respond to the latest threat category, and bolting them into an ever-growing software suite. The result has been the bloated, patchwork-quilt security suites that exasperate many users with confusing interfaces and mixed results.

Traditional antivirus products rely heavily on virus signatures to detect viruses. Too often, infection occurs as an antivirus product awaits a signature update. That leaves systems open to "zero-day attacks"— exploits of vulnerabilities that are unleashed on the Internet before a patch or fix is available. According to the SANS Institute, zero-day attacks saw a significant upward trend in 2006.

INTELLIGENT SECURITY

Scanning for known viruses is the bare minimum that should be expected from an antivirus product. A robust and nimble security program should also be able to detect adware, spyware and riskware, as well as detect and inoculate against rootkits—those malicious sets of tools that enable a hacker to take control and, while appearing hidden to many antivirus programs, operate processes on a target system and the network it is connected to.

When installed and active, rootkits may "hide" files from the operating system. Many antivirus detection systems are limited to finding rootkits as they are being installed and cannot detect one that is already active inside the operating system.

Nimble security solutions utilizing advanced heuristics provide more proactive detection against the array of threats facing computer users today. By analyzing application behavior in real time, in addition to scanning for known signatures and executing suspect code in an emulated environment, modern protection software can prevent damage and contain the threat before it's too late.

Instead of chasing after new threats, ESET stays a few steps ahead

The ThreatSense® engine at the core of ESET's NOD32 is a well-balanced system of advanced heuristics and malware signatures, providing the best detection without compromising speed. Attacks by a variant of a malware family are diagnosed using next-generation generic signatures, and detection of malware that is unspecified in the signature is dealt with by proactive handling and analysis of code.
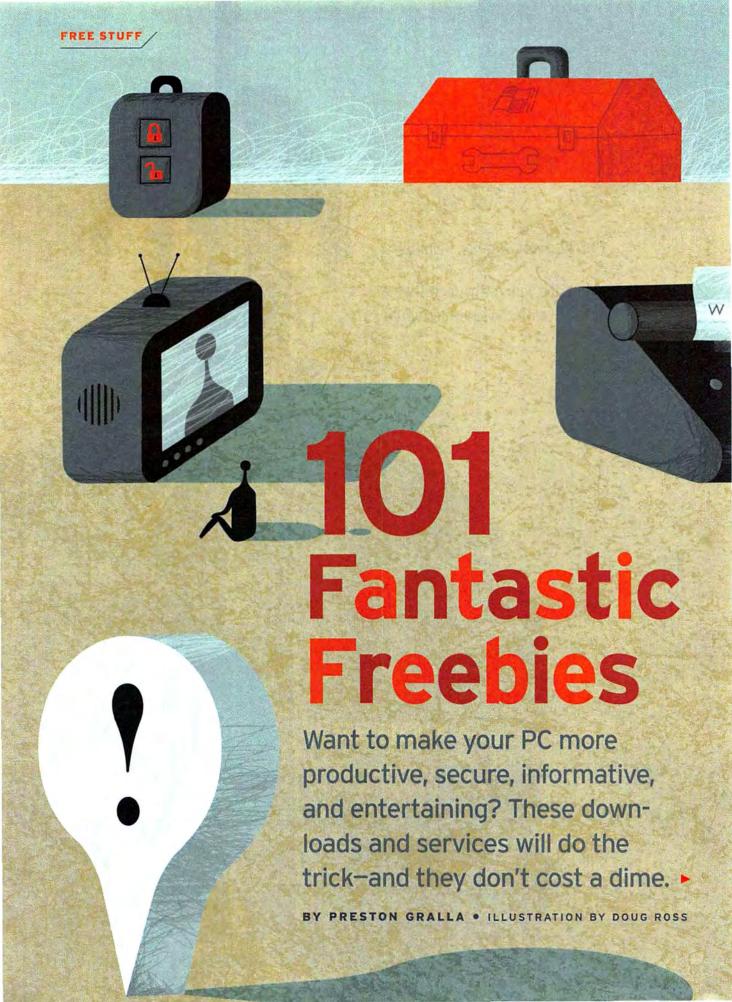
"Our philosophy is that great protection doesn't have to slow down your computer," says Randy Abrams, ESET director of technical education. "NOD32 was designed from the core as a single, highly optimized engine that works as a unified Anti-Threat® system to protect against a broad spectrum of malware."

Designed with streamlined and efficient code, NOD32 consumes a mere 23 megabytes of workstation memory during active scanning, and offers multiple layers of protection for your organization, at the desktop, file server and mail gateway.

ESET

NOD32. Swift. Nimble. Relentless.

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antivirus system

Just set it and forget it. That's the beauty and the power of NOD32's
ThreatSense technology. NOD32 proactively protects against viruses,
spyware, rootkits and other malware. And, its high-performance engine
won't slow your system down. Take a free NOD32 30-day test drive.
Call 866.503-ESET or download at ESET.com.

101 Fantastic Freebies

Want to make your PC more productive, secure, informative, and entertaining? These downloads and services will do the trick—and they don't cost a dime. ▶

BY **PRESTON GRALLA** • ILLUSTRATION BY DOUG ROSS

O NCE UPON A time you actually had to *pay* for great software and services—hard to believe, but true.

Luckily, we no longer live in that world. The Internet is stuffed with great downloads and Web sites offering free software and services of every kind. Want to tune up your PC, keep it safe, create graphics, or back up your system with gobs of free storage space? You can find free software and sites to do all that, and plenty more.

We revved up our cable modem and searched for the most intriguing free offerings out there. After we took each download or service for a test-drive, we picked the very best, and came up with the following list of 101 great freebies.

We didn't do it alone, though—you helped. We polled *PC World* readers, asking for your top freebies in several categories, so here you'll find your favorites as well as ours. (See the chart on page 80; for more details on the People's Choice winners, see find.pcworld.com/56820.)

ple, familiar Google interface as a plus, and also like the program's speed. Says Donnie Proffitt of New Carlisle, Ohio: "It's extremely fast and makes finding photos and music files on my PC easy

Windows XP Tweaks

WINNER Fresh UI (www.freshdevices.com) Fresh UI is a tweaker's heaven: With it you can change scores of settings in XP, many of which you probably never knew existed. Want to alter most any aspect of the Windows interface? Go ahead. Customize the Start menu? No problem. Change global menu settings and dozens of network and Internet settings? You can do them all, and a whole lot more.

Microsoft PowerToys for Windows XP (find.pcworld.com/56138) Who says Microsoft can't write great software? These easy-to-use tweaking tools allow you to customize XP in countless ways.

TWEAK VI OFFERS 100 different ways to customize Windows Vista to your own taste.

Desktop Search

WINNER AND PC WORLD READER WINNER Google Desktop (desktop.google.com) Google has done more than just conquer the Internet—with Google Desktop, it has conquered your PC as well. The program brings the same kind of fast, accurate searching to your desktop that Google does to the Web. It searches as you type, and displays the results in your browser. One nice touch: When the program is installed and you search via the Google Web site, the results will also include those from your computer.

Polled *PC World* readers cite the sim-

even on my large, cluttered hard drive."

Copernic Desktop Search (www.copernic.com) With an interface designed for your PC rather than for the Web, this search tool may be the easiest to use.

Windows Desktop Search (find.pcworld.com/56747) One big benefit of Microsoft's desktop search program is its integration with both Microsoft Outlook and Outlook Express e-mail.
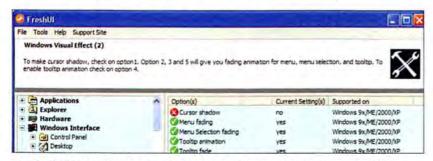
Yahoo Desktop Search (desktop.yahoo.com) Among the better features of this offering: file viewers that let you preview files with all formatting intact.

Tweak and Tune (find.pcworld.com/56755) This freebie doesn't have as many options and tools as Fresh UI does, but it's simple to use and well laid-out.

Windows Vista Tweaks

WINNER TweakVI Basic (find.pcworld.com/56750) If you want to do some serious Windows Vista tweaking, you need this utility. Microsoft seems to have gone out of its way to make Vista unfriendly to power users. But this great freebie gives you hundreds of ways to adjust the operating system, tasks that otherwise would be extremely difficult to do. Whether you want to, say, hack the Start menu, put an image on Internet Explorer's toolbar, or optimize your CPU's cache, this program has something for you.

VistaBootPRO (www.vistabootpro.org) Want to change how Windows Vista boots? Ordinarily you'd have to learn the ins and outs of the incomprehensible BCDEdit command-line tool. But this

FRESH UI GIVES you the tools to mold Windows XP to look and act just as you want it.

simple, graphical program lets you master Vista's boot-up and startup without ever touching the dreaded BCDEdit.

Easy BCD (find.pcworld.com/56752) Another BCD editor, this one is great for setting up a machine with Vista and other operating systems, such as Linux or XP.

Instant Messaging, Voice, and Video

WINNER Meebo (www.meebo.com) How can you be in two or more places at once—that is, use multiple instant messaging services simultaneously? Use Meebo. It lets you log in simultaneously to seven instant messaging services, namely AIM, Google Talk, ICQ, Jabber, MSN Live Messenger, Yahoo Instant Messenger, and Meebo's own network. You see all your contacts in a single list, and you can correspond with them all from a single interface. It's perfect for instant messaging on the road, since you don't need to download a client; everything is available on Meebo's Web site.

Jajah (www.jajah.com) Use this Web site to make local, long-distance, and international calls using your existing phone, for free. The catch: Both your phone number and the one you're calling must be registered with Jajah, and Jajah users are limited to 30 minutes of talk time a day. Just type in your phone number plus the number you're calling, and your phone will ring. Pick it up, and you make a connection to the other party.

Skype (www.skype.com) Phone other Skype members free, enjoy video calls, and make cheap international calls.

Gizmo (www.gizmoproject.com) With this service you can make free calls to Google Talk, Windows Live, or Yahoo Messenger users, as well as to Gizmo users, of course. Gizmo also integrates with Asterisk PBX; if your company uses an Asterisk-based system, you can log in to it and receive calls that way.

Yahoo Messenger (messenger.yahoo.com) *PC World* readers named this IM tool their second-favorite behind Windows Live Messenger; in particular ▶

CAPTAIN RONNIE YOUNG (center), Master Sergeant Frank Bernal (left), and Major Kyle Cowherd used Google Earth to save lives during Katrina rescue missions.

FREE IMPACT

Freebies That Saved Lives

CAPTAIN RONNIE YOUNG of the United States Air Force says that Craigslist (craigslist.org) and Google Earth (earth.google.com), both popular freebies, saved lives during the Hurricane Katrina disaster. "Just because it's free, that doesn't mean it's not up to the task of doing great things," Young says.

The eureka moment came to Young days after Katrina devastated New Orleans. As a senior intelligence officer with the 347th Expeditionary Rescue Group, his job was to help helicopter pilots locate people who needed rescuing. On a tip, Young went to Craigslist and began scouring hundreds of postings on its New Orleans message board—pages of messages left by worried relatives and friends inquiring about missing loved ones.

Young remembers reading postings pleading to any rescue worker to save family members and friends who were either too old or too sick to stand on their rooftops and wave down a passing helicopter.

The Air Force certainly wanted to take action, but there was one significant problem: Maps of New Orleans were useless, because half the city was underwater and the topography ravaged by the hurricane left too few discernible landmarks for helicopters to navigate to specific addresses. "We had the street addresses of people who needed help, but the streets were gone. It was almost impossible to find these addresses from Craigslist from the air," Young says.

That's when Young got the bright idea to use Google Earth to cross-reference the street addresses culled from Craigslist. By this point Google had integrated post-Katrina aerial photographs of New Orleans into its Google Earth program—which, unlike the existing U.S. military maps available at that time, could overlay street addresses on top of the new aerial images of New Orleans.

From Jacksonville, Mississippi, where Young was based at the time, he used the addresses and the images to pinpoint the exact location of Katrina victims. After compiling this information, Young and a cadre of intelligence professionals were able to hand Air Force pilots flying rescue-helicopter missions the precise GPS coordinates of the stranded, along with recent aerial photographs of their whereabouts.

"I definitely can credit those free tools for absolutely saving lives," Young says.

—Tom Spring

they liked its group videoconferencing, emoticons, and sounds.

Trillian (www.ceruleanstudios. com) Like Meebo, Trillian lets you log in to multiple instant messaging systems simultaneously. The difference is that it's a download, not a Web site.

Windows GAIM (find.pcworld. com/56740) This Windows version of the open-source client lets you log in to and communicate on multiple IM networks, including AIM, ICQ, IRC, Jabber, MSN Messenger, Yahoo, and more.

Google Talk (www.google.com/talk) Though Google Talk doesn't have the big installed base of other instant messaging systems, its clean, simple interface and voice features make it a good choice.

AVAST CAN STOP viruses threatening your inbox and chat client.

Security Software

WINNER Avast (www.avast.com) In a world filled with high-priced subscription-based antivirus programs that bog down your PC while protecting it, Avast stands out. This program is one of the few free antivirus applications that do as good a job as any of the big boys. Avast includes more than seven different varieties of shields, safe-surfing tools, and real-time virus protection for your OS, as well as for Outlook. The program downloads and installs updates automatically, and Avast works with both Windows Vista and XP. Given all this, why pay?

ZoneAlarm (www.zonealarm.com) This free firewall still beats anything Microsoft puts into Windows, including the features in Windows Vista. It offers outbound as well as inbound protection.

AVG Anti-Virus Free (free.grisoft.com/ doc/1) Protecting against viruses and hackers, this app works with both Windows Vista and earlier versions.

SMAC (www.klcconsulting.net/smac) This utility lets you change the MAC address—the unique ID—of a wireless adapter. Use it to perform vulnerability testing, or to keep your identity private.

Microsoft Windows Defender (find. pcworld.com/56636) Though not everyone is a fan of Microsoft's antispyware program, we love some of its tools. We're particularly fond of the Software Explorer feature, which lets you disable programs that launch on Windows startup.

Spybot Search & Destroy (find.pcworld. com/51646) We still adore this perennial favorite. But remember—since no single antispyware program can detect and kill all spyware, Spybot should be just one piece of your security arsenal.

SURVEY RESULTS

People's Choice Awards

MORE THAN 1800 READERS of PCWorld.com rated their satisfaction with prominent free software or services. See find.pcworld.com/56820 for more details.

SOFTWARE/SERVICE	Extremely satisfied (%)	Very satisfied (%)	Total extremely/ very satisfied (%)
Antispyware			
Ad-Aware SE Personal	18	37	55
Spybot Search and Destroy	13	32	45
Windows Defender	5	16	21
Web e-mail			
Google Gmail	30	33	63
Yahoo Mail	19	24	43
Windows Live Mail	6	10	16
Image editing			
Google Picasa	22	30	52
Irfanview	19	21	40
GIMP (GNU Image Manipulation Program)	13	21	34
Media playback			
Nullsoft Winamp	14	21	35
Apple iTunes	12	22	34
Windows Media Player 10	9	24	33
Instant messaging			
Windows Live Messenger	10	28	38
Yahoo Messenger	12	23	35
Trillian	7	23	30
AIM	4	19	23
Desktop search			
Google Desktop	13	23	36
Windows Desktop Search	7	9	16
Video sharing			
YouTube	19	29	48
Google Video	14	21	35
Yahoo Video	6	9	15

Entertainment Software

WINNER VLC Media Player (www. videolan.org/vlc) If you play a lot of video and use Windows Media Player, you've

probably come across a number of files that you can't play—you're told you need to have a codec to handle them. Good luck finding that codec. Instead, try the VLC media player. This software plays pretty much every media type you can think of—and likely a few you haven't imagined. Not only will it play audio and video formats, but it will also play DVDs, VCDs, and many streaming protocols.

iTunes (www.itunes.com) Winamp barely edged out iTunes as the favorite media player of surveyed *PC World* readers. Says one reader about the Apple program: "Exemplary audio organization and custom playlist creation."

Foobar2000 (www.foobar2000.org) This straightforward audio player won't take up much RAM or system resources, and plays a wide variety of audio formats.
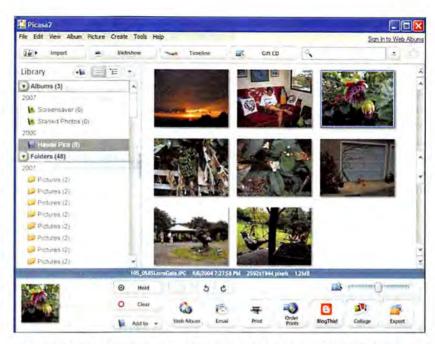
Image Editing

WINNER AND PC WORLD READER WINNER Google Picasa (picasa.google.com) Why spend several hundred dollars for graphics software when you can use the top-notch free app Google Picasa? This photo editing and sharing program from Google is a big hit with *PC World* editors and polled readers alike. Says one reader: "Beautiful interface. Excellent for organizing or anything else—touching up, slide show, screen saver, and wallpaper." Other respondents like Erich Tucker, of Woodbridge, Virginia, gave Google Picasa kudos for making it a breeze to find and edit pictures. We agree.

Snapfire (www.snapfire.com) SnapFire juggles all your image editing, management, and sharing tasks with ease.

Irfanview (www.irfanview.com) Yes, we know this one has been around a while. But it's still one of the best free image viewers for just about any file type, showing detailed information about images, helping you create slide shows, and performing tasks like eliminating red-eye.

StudioLine Photo Basic (find.pcworld. com/56625) Here's a great program for archiving photos and for organizing your collection. We were sold on the app when

WITH GOOGLE PICASA, finding, organizing, sharing, and editing photos has never been easier.

we found its handy "Web galleries," which are HTML-coded Web pages, complete with navigation links to your photos.

Microsoft Photo Info (find.pcworld. com/56626) This useful freebie, which integrates directly into Windows Explorer, lets you preview an image and embed metadata into it by right-clicking it.

FastStone MaxView (www.faststone. org) This petite (1.3MB) image editor is small enough to store on an old floppy disk. Don't let its size fool you, though: FastStone MaxView sports lots of photo manipulation tools, such as those for rotating, flipping, resizing, and blurring.

Media Purveyor (www.mediapurveyor. com) If you have gigabytes of stored media—including music, images, and videos—in need of some taming, this free program is for you. Not only does Media Purveyor edit images, but it also organizes and sorts your multimedia library. Plus, the app indexes your library for searching and plays back video and audio, to boot.

GIMP—GNU Image Manipulation Program (www.gimp.org) This program is a

favorite of open-source software fans everywhere. No, it isn't the easiest to use, but it's nearly as powerful as Photoshop.

Paint.Net (find.pcworld.com/56630) This surprisingly powerful image editing and manipulation program includes unlimited undos and special effects, and even provides the ability to work in layers.

E-Mail for Free

WINNER AND PC WORLD READER WINNER Gmail (www.gmail.com) The heavyweight champ of free e-mail is clearly Gmail, and not just because it gives you as much storage space as you'll ever need.

Though Gmail may not have the prettiest interface of the bunch, it's speedy, it does away with frills, and it has all kinds of features if you're willing to do a bit of digging. For example, Gmail doesn't handle just Web-based e-mail; unlike other free services, it can work with your existing e-mail software. You can also use it to forward mail to other accounts. (Click *Settings•Forwarding and POP* to con- ▶

GOOGLE'S GMAIL IS a winner. It delivers lots of features for free that many other Web-based mail services charge for.

figure both of these options.) Gmail allows you to create rules to handle incoming mail automatically. And you can easily search through your messages via Google.

It's no wonder that the *PC World* readers we surveyed rate Gmail as their favorite e-mail service. Says Chuck McNevich of Lexington Park, Maryland, "The interface is considerably faster than Hotmail, Yahoo, and the like. I don't have to pay for the huge storage it gives me."

Yahoo Mail (mail.yahoo.com) Be sure to keep this service on your radar. During the writing of this story, Yahoo was beta-testing a new version of its mail service. We love the interface, which works more like desktop e-mail software than traditional Web mail does.
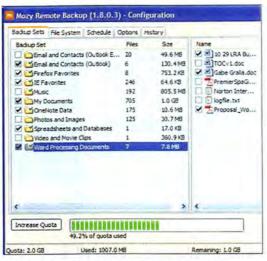
Microsoft Windows Live Mail (find. pcworld.com/56638) The e-mail service formerly known as Hotmail has received a significant makeover, becoming appealingly slick and Outlook-like.

Spamato (www.spamato.net) Tired of wading through the spam clogging your inbox? This add-on for Outlook, Thunderbird, and Mozilla Mail does everything it can to eradicate the junk.

Thunderbird (find.pcworld.com/56640) This downloadable e-mail client has a nice, simple interface, spam filtering, antiphishing features, RSS news-feed functions, quick search, and a spelling checker. It's also from the folks who brought you the Firefox Web browser.

Eudora (www.eudora.com) Sure, this freebie e-mail favorite has been around for quite some time. But there's a good reason for that: Eudora includes features like Mood Watch (which rates messages on a mood meter) that no other tool has. People who suffer from e-mail overload (and that's everyone, isn't it?) will treasure the program's unique folders-based approach to message organization.

IncrediMail (www.incredimail.com) If you're partial to animations, 3D effects, sounds, and other kinds of froufrou in your e-mail program, this downloadable software is the choice for you.

MOZY WILL STORE up to 2GB of your files for free.

File Sharing

WINNER AllPeers (www.allpeers.com) Need to share files? Forget e-mail, BitTorrent, and instant messaging apps—you won't find a better program than this. AllPeers, which works from within Firefox (an Internet Explorer version is planned, but not yet available), lets you set up folders for file sharing. You can specify who has access to those files, and you can send messages to those people to alert them when files are ready. In addition, you can share Web pages or images from Web pages, and you can view any media files you receive from other people right inside Firefox. It's the easiest way to share files of any kind with anyone.

Pando (www. pando.com) This peer-to-peer software lets you easily send and receive large files through e-mail or instant messaging clients. The utility is particularly helpful because most ISPs have size limitations for sending or receiving e-mail file attachments.

uTorrent (www.utorrent.com) Though the BitTorrent standard is the best protocol for sharing files, uTorrent is better than the BitTorrent client: This program

ALLPEERS LETS YOU share pictures, music, and videos within your Firefox browser.

has an array of extras, such as a tool for limiting the upstream and downstream bandwidth.

Backup and File Synchronization

WINNER Mozy (www.mozy.com) Free backup programs and Web sites tend to give you only the basics, hoping that you'll then pay extra for additional features. That's not the case with Mozy, a full-featured online backup service. You can, for example, back up only the portions of files that have changed, saving considerable backup time and space. You can also browse through 30 days' worth of backups to locate previous versions of files. Techies will appreciate features such as bandwidth throttling for backups, and halting backups if the CPU usage exceeds a certain percentage. You get 2GB for free; beyond that, you'll have to pay.

MediaMax (www.mediamax.com) You want free storage space—how about 25GB of it? That's what you get from MediaMax. We love the feature that allows you to stream your audio and video to your desktop, skipping hefty downloads from your digital storage locker.

XDrive (www. xdrive.com) With this service, you receive 5GB of backup for free, as well as a nice, free backup client and a way to share your folders with others.

Microsoft Sync-Toy (find.pcworld. com/56648) This great Microsoft freebie permits you to keep folders on different machines automatically synchronized—so it's perfect for synchronizing folders on a laptop and a desktop.

Everyday Auto Backup (find.pcworld. com/56778) If you're looking for a ▶

To protect your Windows Vista™, get behind the ball.

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simple, no-frills download that will back up your data, this is the tool to try.

Microsoft Foldershare (www.folder-share.com) Use this tool to synchronize files with multiple desktops—including Apple machines—over the Internet.
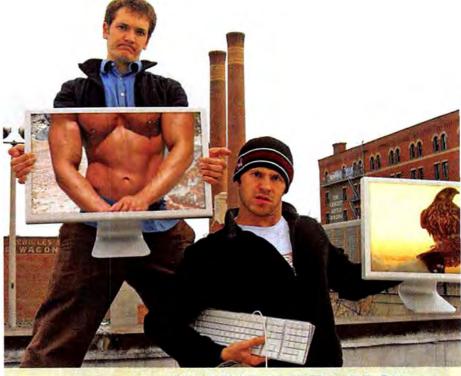
Office Productivity Software & Services

WINNER Zoho (www.zoho.com) What makes Zoho the winner is that it doesn't merely try to copy Microsoft Office functionality. It's Web-based, so you can collaborate with others on your documents, for example. But the functionality of even the base software beats Microsoft's offering in some areas; for creating HTML and graphics-heavy documents, for instance, it surpasses Word. This is the best and most comprehensive Web-based office suite you can find. Included are a word processor, a spreadsheet, a presentation program, and a database builder—and plenty of other productivity applications are being added all the time.

Portable Apps (www.portableapps.com) Do you find yourself frustrated when you're on the go, without all your applications and data? Copy this software suite to a USB flash drive, iPod, or similar device, plug the unit into a PC, and all your apps—plus your contacts, documents, and bookmarks—are available.

Google Docs and Spreadsheets (docs.google.com) Like Zoho, the Web-based Google Docs and Spreadsheets lets you work with others as well as create and edit documents and spreadsheets. Its collaboration features are particularly noteworthy, and it uses Google's search to make finding any document fast.

Num Sum (www.numsum.com) While Num Sum includes all of the features you would expect it to have, it's also a social-networking site where you can share spreadsheets with like-minded others. It's a great setup for anyone who's interested in sharing spreadsheets to track home maintenance, a workout schedule, or a Super Bowl pool, for example.

Ajax 13 (www.ajax13.com) This ▶

LUKE BARATS AND JOE BERETA credit YouTube for their success in breaking into Hollywood.

FREE IMPACT

YouTube Stars Hit the Big Time

HOW'S THIS FOR AN IMPROBABLE TALE: Upon their college graduation, a comedy duo hailing originally from the wilds of Montana and Idaho hit it big in Hollywood—all without setting foot in New York or Los Angeles. They go on to star in a pilot for NBC, and to negotiate for a feature film with a major studio, while still living in laid-back Spokane, Washington. Improbable, but true. The team of Luke Barats and Joe Bereta has ridden the power of YouTube to bypass the usual Hollywood madness, and the performers are on the cusp of being stars.

Film-and-theater majors Barats and Bereta met as undergraduates at Gonzaga College in Spokane, in the college's improv troupe. When courses called for them to make comedy-sketch videos, they decided to share the videos with their parents back home, on their own Web site. Their parents, unfortunately, couldn't view the videos there. "Then someone told us about this Web site called YouTube, where you could post videos and anyone could watch them," remembers Barats. "We started posting so our parents could see what we were doing in college."

On Mother's Day of 2006, YouTube featured a Mother's Day video that the two had made—and then everything changed. "We went from 200 hits a day of our video on our own Web site to 40,000 hits a day on YouTube," Barats says.

In August talent manager Dan Farah saw their videos on YouTube. "I thought they were hilarious," he says. "I immediately got in touch with them, told them I wanted to be their manager, and we signed a contract."

The rest, as they say, is history.

Soon after, Farah negotiated a deal with NBC for a pilot for Barats and Bereta, and began talks with various film studios.
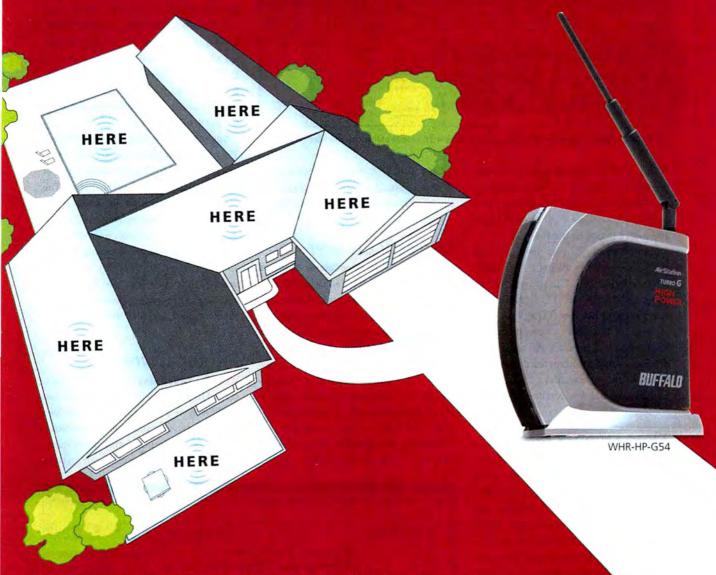
Although all of those developments sound as if they were parts of a well-thought-out plan, Barats says that their success was entirely accidental.

"We never planned on having our careers explode out of the Internet," Barats says. "That was never really the intention. We had no idea how Hollywood worked... we didn't even know what a manager was."

–Preston Gralla

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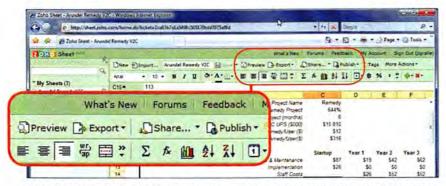- Easy & Secure Push-button Setup

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ZOHO DELIVERS A powerful Web-based office suite with unique online collaboration features.

Web suite has more features than competitors like Zoho, including everything from a word processor to a drawing program, a spreadsheet, a presentation app, and even a digital music player.

OpenOffice.org (www.openoffice.org) Not happy with the idea of a Web-based office application? Then you want the downloadable OpenOffice.org, the free competitor to Microsoft Office. A complete suite, it provides a word processor, a spreadsheet, a presentation program, a database—and, for übergeeks, a "mathematical function calculator" (but if you have to ask what it is, you don't need it).

Time Management

WINNER Backpack (www.backpackit. com) Juggling multiple projects has never been so easy. For every project you create a separate page, each of which can include to-do lists, freeform text, notes, links, files, images, and reminders. Backpack also has a calendar, and if you use Apple iCal, Mozilla Calendar, or any program that supports the iCalendar format, your reminders will be automatically added to your Backpack calendar. You can even have reminders sent to you via e-mail or to your cell phone.

Google Notebook (www.google.com/ notebook) If you need a simple way to save clippings from the Web, organize them, and then search through them, look no further than Google Notebook.

Sticky Notes (www.sticky-notes.net) This downloadable program does exactly what its name says: It allows you to create virtual sticky reminder notes that you place right on your computer's desktop.

Easy To-Do (www.xanadutools.com) With this small, simple download, you can quickly create and track to-do lists.

Registry Cleaner

WINNER TweakNow RegCleaner Standard (find.pcworld.com/56754) The Registry is a scary place; like Dante's underworld, it should have a sign reading "Abandon all hope, ye who enter here." TweakNow RegCleaner Standard is your virtual Virgil, a guide into the depths of the Registry. It automatically scans your Registry and reveals problems. After you examine the changes and tell the software to do its magic, it cleans the Registry for you.

Clean My Registry (find.pcworld.com/ 56756) This Registry cleaner will not show you quite as much information as TweakNow does, but it is fast and it does a good job of sweeping away the junk.

Hardware Utility

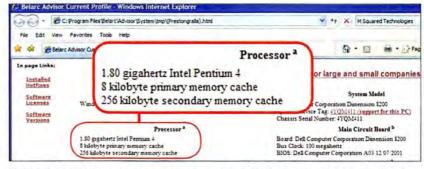**WINNER Belarc Advisor** (find.pcworld. com/54965) If you're looking for an exquisitely detailed audit of your hardware, this is the download you need. The program starts with the basics, such as the computer manufacturer, installed RAM, hard-disk size, and processor type and speed. But it also shows you the motherboard maker, hard-disk manufacturer, chassis serial number, PC service tag, bus type and speed, multimedia devices... the list goes on and on.

SpeedFan (find.pcworld.com/55716) This must-download for serious overclockers touts itself as a monitor for your system's temperature and fan speed. The real reason it's worthwhile is that it lets you easily overclock your PC and adjust the fan speed so it doesn't overheat.

M2 Information (find.pcworld.com/ 56643) This program performs a quick scan of your computer and lists details such as the processor type and speed, the RAM amount, and disk information.

Personal Web

WINNER Pageflakes (www.pageflakes. com) Home pages are passé—what you really want is a Webtop, a personal Web space you can customize with news feeds, chat tools, weather info, and plenty more. With Pageflakes you build your custom

WITH BELARC YOU can quickly take inventory of your PC's installed hardware and software.

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Netvibes (www.netvibes.com) With dozens of feeds, news sources, and widgets to choose from, you'll find it easy to build the exact Web home you want.

Protopage (www.protopage.com) This site is more for play than work, with plenty of cartoons, podcasts, video feeds, and widgets. But if you must get something done, it has productivity tools as well.

Google Personalized Home (www. google.com/ig) For fans of minimalism, this clean-looking Webtop is mainly all text, but it has an array of feeds and tools.

Windows Live (www.live.com) Though Microsoft's Webtop is buttoned-down and corporate-looking, it offers lots of customizable content, plus access to your Windows Live Mail or Hotmail account.

Blogging Site

WINNER Google Blogger (www.blogger. com) Blogger is home to tens of thousands of blogs, and with good reason. Because it's template driven, getting started is simple; posting is also a snap. But you have plenty of powerful tools here, as well, such as the ability to make RSS feeds yourself, and the ability to create posts merely by sending an e-mail message containing the text.

PC World readers also love Blogger, with one reader noting the service's "easy-to-use features [and] nice themes."

WordPress (www.wordpress.com) Another worthy blogging competitor is WordPress.com, a site that's brought to you by many of the same people who develop the open-source blogging software available at WordPress.org.

LiveJournal (www.livejournal.com) This blogging site is noteworthy for letting you create private "journals" that you can share with family and friends, and it includes easy-to-use community features for putting you in touch with other people who share your interests.

Microsoft Windows Live Spaces (spaces. live.com) Though this offering isn't the most sophisticated of blogging sites, both setting up your blog and posting entries are simple—plus, a big community ▶

THROW THE FIGHT (from left): Ryan Baustert, Cory Huppert, Joey Ulrich, Paul Kreuger, Aaron Huppert.

FREE IMPACT

Band Works the Web and Finds Fame

IF YOU CAN MAKE IT HERE, you can make it anywhere...and no, we're not talking about New York, New York. Instead, we're talking about music and social-networking sites such as Last.fm (www.last. fm), MySpace (www.myspace.com), and PureVolume (www.purevolume.com).

Throw the Fight, a five-piece rock band from Minneapolis, has become a well-known fixture on all of those sites. And by collecting a devoted mass of fans in cyberspace, the group has managed to avoid the usual lengthy, school-of-hard-knocks rock apprenticeship, moving from being an unknown, unsigned regional band to one with a national following—and one that now has a deal with the Warner Music Group's Cordless Recordings.

"The band started about four years ago, and right away we began using those kinds of sites," says Ryan Baustert, guitar player and a vocalist for the band. Baustert says that literally every day band members spend time on one or more sites to build up their following by signing up new friends and posting their music.

The effort quickly paid dividends: More fans who had listened to or heard about Throw the Fight online started coming to their local shows.

On MySpace, the band has signed up 24,000 friends and logged 100,000 plays of its music. On PureVolume, it has received 53,000 plays. In July 2006, Throw the Fight was the number one unsigned band on PureVolume.

A manager in New York came across the group online, and the parties entered a management contract. Then Cordless Recordings approached the manager, looking for a hard-rock band—and Throw the Fight was signed.

"Without these kinds of sites and the Internet, it takes much longer for a band to become known and get signed," Baustert says. "You've got to be out there at the grass roots and playing as many shows as you can, of course, but using the Internet makes it that much more likely you can be a success."

Though the band now has a label, it has no plans to stop using networking sites like Last.fm, MySpace, and PureVolume.

"We remember where we came from. It just comes down to being accessible to everyone," Baustert says. "And also, we've got to keep the buzz going."

—Preston Gralla

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is there, just waiting to hear from you.

AOL People Connection (peopleconnection.aol.com/journals) AOL keeps blogging easy. The sheer size of its massive community, however, is what makes visiting worthwhile: If you have an interest,

SAGE COMPLEMENTS FIREFOX, marrying an RSS reader to the browser; this Firefox extension is both easy to use and great at managing feeds.

you can be sure lot of others will share it.

Yahoo 360 (360.yahoo.com) Here is the blogging site to watch. Yahoo 360 was in beta as we went to press; but we liked what we saw, in particular the simplicity of starting your page and posting.

Online RSS Reader

WINNER Bloglines (www.bloglines.com) The Web-based Bloglines loads quickly, sports a sophisticated interface, and delivers such snappy responses that you'd almost think you were using downloadable software. Bloglines makes subscribing to and reading feeds easy, as well. We're particularly fond of the Clippings feature, which allows you to add any blog or Web page text to a special Clippings tab; that way, you can keep all of your important posts in a single location for easy retrieval. We also like Clip Blogs, which are clips from blogs that you can keep private or share with others.

NewsGator Online (www.newsgator.com) NewsGator Online comes a close second to Bloglines. We particularly like the way this offering delivers feeds in a clear, clutter-free display.

Google Reader (www.google.com/reader/view) Google excels at many things, but simple Web-based software interfaces is not necessarily one of them. Though this site does the job, nontechies might be confused by the arcane interface.

Software RSS Reader

WINNER Sage (sage.mozdev.org) What's the best way to integrate RSS news feeds and the Web? Don't use a separate RSS reader. That's the secret behind Sage, which integrates directly into Firefox (but not Internet Explorer). Using it is simple: Click the Sage icon in your toolbar; Sage will then drop down on the left. Whenever you visit a page that has an RSS feed, you click the Discover Feeds button to add the feed. The rest of the Firefox window then becomes your reader. Sage lets you organize your folders, search through feeds, and import and export feeds lists.

Active Web Reader (www.deskshare.com/awr.aspx) If you'd prefer an Internet Explorer plug-in, this simple-to-use, downloadable reader is a fine choice. Active Web Reader lets you organize feeds by category, import and export groups of feeds, and search feeds.

Tristana RSS Reader (find.pcworld.com/56610) Fans of Microsoft Outlook will like this reader: It mimics the overall Outlook interface, with folders on the left

RSS READER BLOGLINES is Web-based, but it acts like a peppy software program on your PC.

and a reading pane on the right that shows RSS topics. The program can download podcasts, too.

MCE RSS Reader (find.pcworld.com/56611) Here's an RSS reader with a difference: It downloads RSS feeds and then displays them on your Media Center PC.

Why would anyone want such a thing? Some RSS feeds now include videocasts (sometimes called vodcasts), but Windows Media Center unfortunately has a problem handling certain video formats; this tool, though, can deal with them all.

Web Video Site

WINNER AND PC WORLD READER WINNER YouTube (www.youtube.com) No need for a drum roll here: YouTube wins this one, hands down. It has the biggest collection of videos, it's easy to search, it's well organized, the video streams quickly and smoothly, uploading your own videos is easy...what else do you want?

One surveyed *PC World* reader explains his vote for YouTube succinctly: "Billions of videos. Loads fast." Another cites the service's sizable storage space. And yet another reader speaks directly about why people like video sites in general—it's a "decent source of diversions," he says. We couldn't agree more.

Blinkx (www.blinkx.com) Rather than being a video site, Blinkx is a search engine that trolls selected sites for videos. It has partnerships with more than 100 content and media companies, so you'll find lots of video from leading news sites.

Yahoo Video (video.yahoo.com) Here's another ideal site for your serious video-watching habit. The stripped-down interface will please fans of simplicity.

Google Video (video.google.com) ▶

Even though Google bought YouTube, it continues to run this site too, offering plenty of videos. Oddly enough, when we last checked, videos from Comedy Central shows were still here, even though they had been removed from YouTube. That may not be the case by the time you read this.

Notepad Replacement

WINNER NoteTab Light (www.notetab.com) This utility improves on Windows' Notepad in so many ways, it's hard to count them. Start with the basics: You can open multiple files, not just one, as you must in Notepad. Each file runs in its own tab, so switching between them is easy. The program comes with all kinds of nifty built-in tools, too, such as a feature that strips HTML out of a document, a Paste Board that saves text clips automatically, macros, and plenty more.

Crimson Editor (www.crimsoneditor.com) Do you need a geeked-out Notepad replacement? Look no further. This text editor for programmers includes syntax highlighting for HTML, C/C++, Perl, and Java.
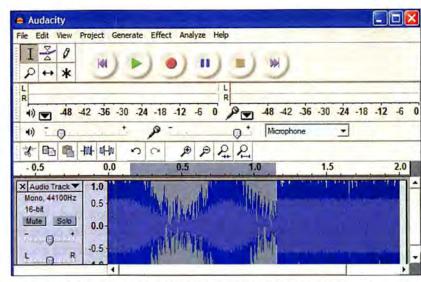
EditPad Lite (find.pcworld.com/56633) This text editor opens multiple files (each in its own tab), opens files of any size, and allows you unlimited undo and redo—in other words, it has everything that Notepad doesn't.

Multimedia Tools and Toys

WINNER Audacity (audacity.sourceforge.net) If you want to create media, not just consume it, try this program, which includes audio recording tools and sophisticated editing functions. You can even create audio soundscapes from scratch. You can add any of several dozen effects, use a sound mixer...in short, the

AUDACITY AUDIO EDITOR lets you record, play, convert, and edit various audio files.

app has everything you need. While you don't have to be well-versed in sound editing to use it, people with some experience will particularly enjoy its power.

Free iPod Video Converter (www.jodix.com) This tool does precisely what its name says: It converts videos from a variety of formats so that you can watch them on your iPod's screen.

PSP Video 9 (psp-video9.com) Sony's PlayStation Portable handheld makes a terrific video player. The PSP Video 9 program converts PC video files (.avi, .mpg, DivX, etc.) into the PSP video format for playback.

DVD Shrink (www.dvdshrink.org) If you have ever attempted to make a backup copy of a DVD movie to a DVD-R, you've probably discovered that you can't do it because DVD movie discs are dual-layer and have more data than can fit on a recordable disc. DVD Shrink solves the problem by compressing the DVD data, letting you make the copy fit on a DVD.
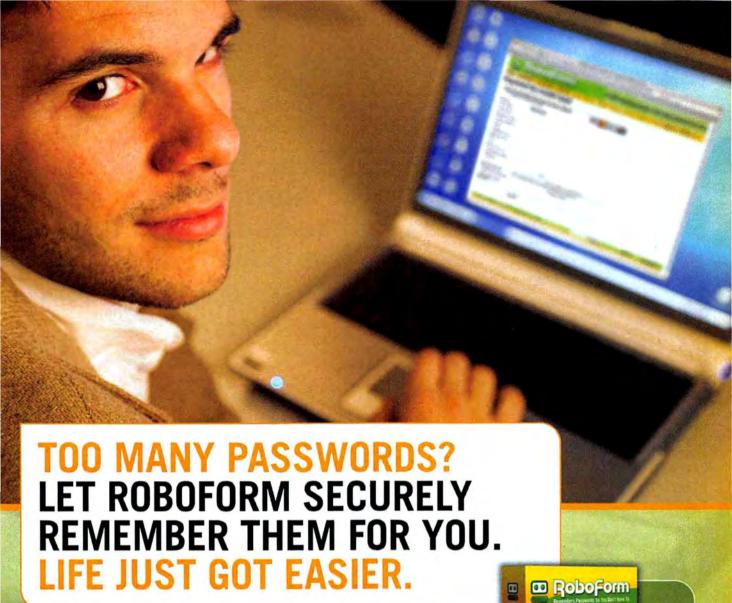
Business Productivity

WINNER Google Apps for Your Domain (www.google.com/a/) If you're running a small business, why pay for collaboration

NOTETAB LIGHT CAN open many documents at once and strip HTML; it has lots of editing utilities, too.

software when this site can give you a lot of what you need for free? Google Apps offers group calendaring, portals for each employee, and Gmail accounts for everyone using your business domain. In addition, you get a simple Web page creator for building and managing your site, and you can register a domain for only $10 per year. Google also has Google Apps Premier Edition, a for-pay version ($50 per employee) with extra features for large companies; but Google says it will continue to offer Google Apps for Your Domain to small companies for free.

Microsoft Office Live (officelive.microsoft.com) Don't be confused by this site's name—the service it offers has nothing to do with the Microsoft Office suite. Though it provides much of what Google Apps for Your Domain does, it's not as well integrated. Office Live storage can hold up to 500MB of data and e-mail management for up to 25 accounts with 2GB of storage each. It does give you free domain registration and a better Web page editor than Google's, however.

FreeCRM.com (find.pcworld.com/56758) If managing sales teams and contacts is all you're after, this site will do the trick. It includes a free document repository of 10MB for your staff, as well. ∎

Preston Gralla is a freelance writer based in Cambridge, Massachusetts, and the author of Windows Vista in a Nutshell. *Tom Spring is senior reporter for* PC World.

Which next-generation movie format is better: Blu-ray or HD DVD? Who makes the best high-definition player? And how can you play high-def discs on your PC? We have the answers.

TEST Center HIGH-DEFINITION MOVIES ARE here. Whichever format you choose—be it Blu-ray Disc or HD DVD—you'll find your viewing experience enhanced by more-accurate and better-saturated colors, and greater detail. These two formats are vying to be the sole successor to standard-definition DVD, the dominant format for the past decade; with no clear winner in sight, you'll have to pick sides when buying a player, whether it's for your living room or your PC. Choose the wrong format, and your player's technology—and your movie collection—may become obsolete. ▶

High-Def Video Superguide

BY JON L. JACOBI, MELISSA J. PERENSON, AND LINCOLN SPECTOR | TESTING BY JEFF KUTA

PHOTOGRAPHS BY MARC SIMON

HIGH-DEF PLAYERS take flight (from top): Our Best Buy, Samsung's BD-P1000; Toshiba's HD-XA2; Panasonic's DMP-BD10; and Sony's BDP-S1.

The Format War Rages

| BY MELISSA J. PERENSON |

THE COMPETING BLU-RAY Disc and HD DVD formats aren't entirely dissimilar (see the chart below). Their differences, however, are significant. Blu-ray supports higher-capacity discs, which gives the format more headroom to mature. Blu-ray's additional space also allows movie studios to provide full, uncompressed audio (called Linear PCM) rather than solely compressed (but high-bit-rate) lossless audio technologies, such as Dolby TrueHD and DTS-HD Master Audio.

Where the Blu-ray Disc format falters today is in how much interactivity it can deliver in the movie playback experience. The new world of interactivity includes such features as on-demand picture-in-picture displays, the ability to bookmark favorite scenes, Java-based games, and extra content that you can download to your player directly (such as supplemental audio tracks, featurettes, or trailers) via ethernet. Though interactivity is a big part of the Blu-ray specification, the spec inexplicably failed to require early Blu-ray Disc players to have the minimum hardware needed to enable such features. Players produced after October 2007 will fix this problem by adding a 256MB minimum requirement for storage and a secondary video decoder (for on-demand picture-in-picture video).

The HD DVD format, by contrast, specified more-stringent minimum requirements from the outset. All HD DVD players must have an ethernet connection, a secondary video decoder, and at least 128MB of built-in storage.

These minimum specs enable all current HD DVD players to support the format's fun interactive features, giving you the ability to create bookmarks held in memory, even after you eject a disc; to play a secondary video stream (for viewing discs mastered with picture-in-picture extras that you can switch on and off while watching the movie); to customize your viewing experience (by changing the color of a car on screen, for example); and to download firmware updates and additional content (such as trailers or extra features that will eventually be stored on remote servers). The catch is, these features are not available on all movie titles (see "Now Playing on Blu-ray and HD DVD" on page 98 for details on what studios are doing on their movie discs). In fact, no HD DVD movie title today takes advantage of the ethernet connection the format requires players to have.

Dueling technical specs aside, Blu-ray for now appears to be a better gamble than HD DVD, if only for the greater number of movie studios supporting the format. For flicks such as *Cars, Casino Royale, Eragon,* and the *Pirates of the Caribbean* series, you'll need Blu-ray, since those films are produced by studios in the Blu-ray camp. But *King Kong, Lost in Translation, Midnight Run,* and *Serenity,* for example, are HD DVD only.

FORMATS

Blu-ray Disc vs. HD DVD

WE SLICE THROUGH the technical specs to determine how the formats stack up.

	Blu-ray Disc	HD DVD
Disc capacity[1]	25GB single-layer -R/RE/ROM; 50GB dual-layer -R/RE/ROM	15GB single-layer -R/ROM, 30GB dual-layer -R/ROM, 20GB -RW/RAM
Data transfer rate (audio/video)	54 mbps (up to 48 mbps for audio and video, with up to 40 mbps dedicated to video; 6 mbps is for overhead)	32.4 mbps (29.4 mbps for audio and video; 3 mbps is for overhead)
Data transfer rate (data only)	1X BD = 36 mbps	1X HD DVD = 36.55 mbps
Price of media	$20 for BD-R, $25 for BD-RE	Expected spring 2007[2]
Maximum resolution	1920 by 1080 (at 50i, 60i, 24p)	1920 by 1080 (at 50i, 60i, 24p)
Video codecs	MPEG-4 AVC, VC-1, MPEG-2	MPEG-4 AVC, VC-1, MPEG-2
Audio codecs	Dolby Digital, Dolby Digital Plus, Dolby TrueHD, DTS, DTS-HD Master Audio, Linear PCM[3]	Dolby Digital, Dolby Digital Plus, Dolby TrueHD, DTS-HD (core), Linear PCM[4]
Maximum number of audio channels	7.1 (for Linear PCM, Dolby Digital Plus, Dolby TrueHD, DTS-HD Master Audio)	7.1 (for Dolby Digital Plus, Dolby TrueHD)
On-demand picture-in-picture (via a secondary video stream)	Optional (required as of October 2007)	Mandatory
Storage	Optional; minimum of 256MB required as of October 2007 (1GB for BD Live ethernet-connected players)	Minimum of 128MB required
Movie studios supporting the format	Buena Vista (Disney), Lionsgate Entertainment, MGM, Paramount Pictures, Sony Pictures, Twentieth Century Fox, Warner Bros.	Paramount Pictures, Universal Pictures, Warner Bros., Weinstein Company
Number of movies shipping in the United States[5]	167	168
Region encoding	Yes	No
Bottom line	Blu-ray Disc has the edge with its breadth of studio support, greater variety of hardware, and better specs. But the format's interactive capabilities lag dramatically behind those of HD DVD.	HD DVD devices deliver on most of their promised interactivity. For now, however, your hardware choices are more limited than with Blu-ray Disc.

FOOTNOTES: [1]The writable and rewritable disc formats for Blu-ray Disc are BD-R and BD-RE, respectively; for HD DVD the formats are HD DVD-R/RW/RAM. [2]Burners will ship by spring 2007. [3]At a minimum, a player must decode a core two-channel audio stream from these formats. [4]A player must decode at least two channels of Dolby TrueHD and 5.1-channel audio for the other formats. [5]As of 2/20/07. **CHART NOTE:** Both formats support the Advanced Access Content System copy-protection scheme.

FRONT-MOUNTED USB PORTS are called "Extension" ports on Toshiba's HD-A2 (and its sibling, the HD-XA2).

PHILIPS'S PLAYER IS one of two we tested that offer slots for reading images and music from flash memory cards.

THE PIONEER has a variety of on-unit controls; LEDs light up in the presence of high-def output, an HDMI connection, and a home network (the unit has a built-in media adapter).

FROM TOP: TOSHIBA'S HD-A2, Philips's BDP9000, and Pioneer's Elite BDP-HD1.

The Players

| BY LINCOLN SPECTOR |

THE ONGOING FORMAT duel is just one reason to put off buying a high-def player; over time, these early players will be eclipsed by lower-priced and more-capable models. But if you're itching to start your high-def movie experience now, you'll find more choice among Blu-ray players than HD DVD models. We evaluated seven stand-alone units, two HD DVD and five Blu-ray, in the PC World Test Center. Toshiba's $500 HD-A2 and $1000 HD-XA2 are that company's second generation of HD DVD players. The Blu-ray models in this story are all first-generation products: Philips's $800 BDP9000, Panasonic's $1300 DMP-BD10, Pioneer's $1500 Elite BDP-HD1, Samsung's $800 BD-P1000, and Sony's $1000 BDP-S1. (LG Electronics declined to submit its BH100 for this roundup; the BH100 is the first player that can handle both Blu-ray and HD DVD movies.)

In addition, we looked at two gaming consoles that double as next-gen video players. Sony Computer Entertainment's $600 PlayStation 3 (with a 60GB hard drive) has an integrated Blu-ray drive that handles both game and movie play. Microsoft's $400 Xbox 360 (with a 20GB hard drive) requires the $200 Xbox HD DVD Player add-on to show HD DVD movies.

To determine the best players of the group, we looked at the same scenes from the Blu-ray and HD DVD versions of *Corpse Bride, Good Night and Good Luck, Mission: Impossible III, The Phantom of the Opera* (2004), and *Rumor Has It*. To gauge how well these players upscale standard-definition movies to 1080p, we also viewed selected scenes from the DVD versions of *The Lord of the Rings: The Return of the King* and *Seabiscuit*.

We viewed the movies side by side on two calibrated 50-inch Pioneer Elite PRO-FHD1 1080p plasma TVs. The TVs match the 1080p resolution used by most Blu-ray and HD DVD movies, including the ones we used in our testing. They also have a Pure/Dot-by-Dot aspect-ratio setting that let us pipe the raw video feed from the player to the display without any scaling. (The term 1080p refers to 1080 lines of progressive-scan video— double the content of 1080i, or interlaced, video.) We tested all but two of the players by outputting images at 1080p over an HDMI connection to our TV; we assessed the Toshiba HD-A2 and the Microsoft Xbox 360 combo at their maximum output of 1080i over HDMI and component video, respectively.

Since the filmmakers weren't there to tell us which images were truer to their visions, we used our own judgments when evaluating variables such as background objects, color saturation, skin tones, and shadow detail. The race was a close one; our picks for image quality reflect not a preference for Blu-ray over HD DVD, but rather how these specific players rendered movies. The Samsung BD-P1000 earned our Best Buy for its balance of great image quality and a midrange price of $800.

IT'S ALL IN THE DETAILS

TWO BLU-RAY PLAYERS, Pioneer's Elite BDP-HD1 and Sony's BDP-S1, gave us the best images: Each scored in the top two for image detail, color quality, and brightness and contrast across both our high-definition and our standard-definition tests. In ▶

Rumor Has It, we could almost count the hairs in the stubble on Kevin Costner's face. Both players rendered fine details, which in turn added depth—in the crowded backstage scene of *Phantom*'s chapter 3, for example, and in *Mission: Impossible III*, chapter 7. In the latter, when the camera pulled back in the Vatican, hallways and staircases appeared three-dimensional, and cobblestones rendered clearly. Shadow detail in the black-and-white *Good Night and Good Luck* was so sharp we could see the

costume details on extras who weren't positioned in the light.

Our Best Buy Samsung and the second-ranked Philips rendered these scenes very nicely as well, though a shade less distinctly (still other players reproduced the scenes just a tad more blurrily than even the Samsung and the Philips did). Sony's PlayStation 3 performed comparably to the Samsung and the Philips with Blu-ray Discs but disappointed in its handling of standard-def DVDs—not surprising, as it can't upscale them ▶
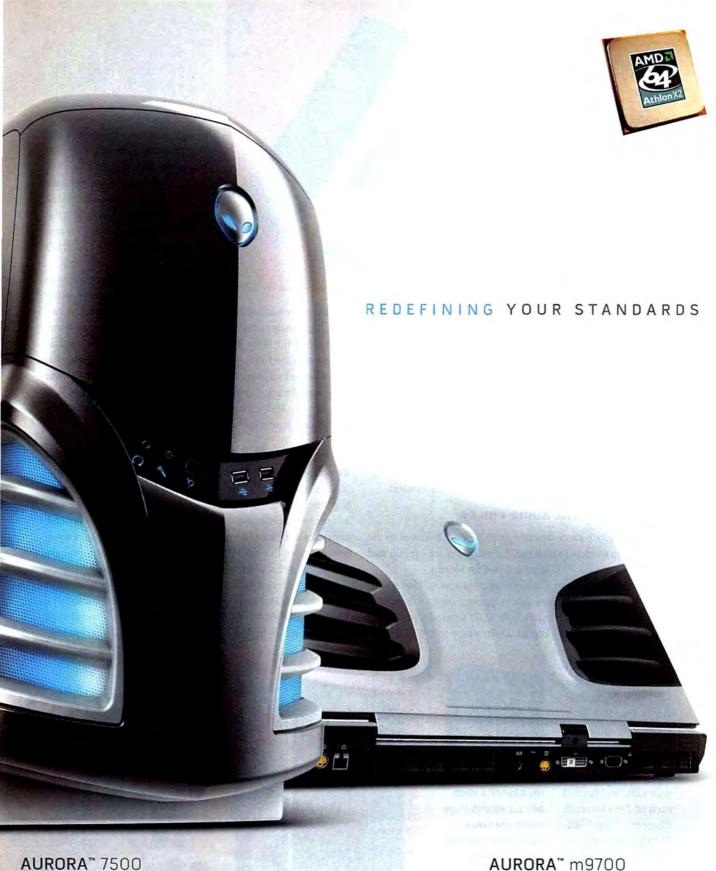
FEATURES COMPARISON

TEST Center — Blu-ray Players Offer Top Visuals

THE SAMSUNG BD-P1000 leads the pack with its well-rounded design and strong image quality, but other players follow close behind—including the relatively bargain-priced Sony PlayStation 3, and one of our top image-quality performers, the Sony BDP-S1.

#	HIGH-DEF PLAYER	PCW Rating	Performance[1]	Features and specifications[2]	Extra features	Bottom line
1	Samsung BD-P1000 **Best BUY** $800 find.pcworld.com/56560	82 Very Good	• Overall: Very Good • Color quality: Very Good • Detail: Very Good	• Blu-ray Disc player • 1080p maximum resolution • HDMI 1.1 • Up to 5.1 channels of audio	• Media card slots[3]	The first Blu-ray player ever released offers great image quality and nicely designed menus, but the audio sounds muddy.
2	Philips BDP9000 $800 find.pcworld.com/56098	81 Very Good	• Overall: Very Good • Color quality: Very Good • Detail: Very Good	• Blu-ray Disc player • 1080p maximum resolution • HDMI 1.2 • Up to 5.1 channels of audio	• Media card slots[3]	This Blu-ray device offers well-rounded image performance at a good price, but it has mediocre audio capabilities and a poor manual.
3	Sony BDP-S1 $1000 find.pcworld.com/56564	80 Very Good	• Overall: Very Good • Color quality: Very Good • Detail: Very Good	• Blu-ray Disc player • 1080p maximum resolution • HDMI 1.2 • Up to 7.1 channels of audio	• 24p output[4] • Support for AVCHD high-def camcorder discs	This model is slow and lacks frills, but it's a great performer: It tied with the Pioneer Elite BDP-HD1 for top audio and video honors, and costs $500 less than that player.
4	Sony PlayStation 3 $600 find.pcworld.com/56565	80 Very Good	• Overall: Good • Color quality: Good • Detail: Very Good	• Blu-ray Disc player • 1080p maximum resolution • HDMI 1.3 • Up to 7.1 channels of audio	• Ethernet port • 60GB hard drive • Plays PS3 games • Media card slots[3]	Multifaceted game console doubles as a competitive Blu-ray player with terrific high-def video. Its lack of DVD upscaling, however, dragged down its overall performance.
5	Toshiba HD-A2 $500 find.pcworld.com/56562	79 Good	• Overall: Good • Color quality: Good • Detail: Good	• HD DVD player • 1080i maximum resolution • HDMI 1.2a • Up to 7.1 channels of audio	• Ethernet port • Two USB 2.0 ports • On-demand picture-in-picture	The cheapest stand-alone player we tested, this HD DVD model produces good audio; but resolution maxes out at 1080i, and the unit won't display some movie scenes optimally.
6	Toshiba HD-XA2 $1000 find.pcworld.com/56561	79 Good	• Overall: Very Good • Color quality: Very Good • Detail: Very Good	• HD DVD player • 1080p maximum resolution • HDMI 1.3 • Up to 7.1 channels of audio	• Ethernet port • Two USB 2.0 ports • On-demand picture-in-picture	Expensive HD DVD player offers strong image performance and a broad range of features; it's the only model we tested with HDMI 1.3.
7	Pioneer Elite BDP-HD1 $1500 find.pcworld.com/56563	77 Good	• Overall: Very Good • Color quality: Very Good • Detail: Very Good	• Blu-ray Disc player • 1080p maximum resolution • HDMI 1.2 • Up to 7.1 channels of audio	• 24p output[4] • Ethernet connection for use with integrated media server	This Blu-ray unit tied with Sony's BDP-S1 for the best picture and sound, but its subpar user interface and sky-high price hold it back.
8	Panasonic DMP-BD10 $1300 find.pcworld.com/56566	75 Good	• Overall: Very Good • Color quality: Good • Detail: Very Good	• Blu-ray Disc player • 1080p maximum resolution • HDMI 1.1 • Up to 7.1 channels of audio	• Firmware upgradable for Dolby TrueHD and DTS-HD Master Audio support	Mediocre design and a tendency to add a reddish cast to skin tones reduce the attractiveness of this pricey Blu-ray player.
9	Microsoft Xbox 360 and HD DVD Player $600 find.pcworld.com/56567	72 Good	• Overall: Good • Color quality: Good • Detail: Fair	• HD DVD player • 1080i maximum resolution • Component video • Up to 5.1 channels of audio[5]	• 20GB hard drive • Ethernet connection • Plays Xbox 360 games	Inexpensive option for Xbox 360 owners is a poor choice for home theater fans; analog-only video outputs make for poor image quality.

FOOTNOTES: [1] Performance tests were conducted via HDMI, with video output to a 50-inch Pioneer Elite PRO-FHD1 plasma TV at its Pure/Dot-by-Dot setting. [2] Audio output depends on the disc's audio encoding and on the chosen audio output connection (HDMI, S/PDIF, coaxial, or analog). [3] Media card slots read CompactFlash, Memory Stick, and SD Card media. [4] 24p output matches the frame rate of film; for more on this, see find.pcworld.com/56792. [5] Multichannel audio is available through Microsoft's HD AV cable. **CHART NOTES:** Prices are as of 2/20/07. All Blu-ray Disc and HD DVD players can play standard DVD movies, as well as discs containing MP3 files. For more-detailed specs and information on how we tested, see find.pcworld.com/56827.

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to 1080p, a capability Sony says it will offer in a firmware update.

Toshiba's HD-XA2 produced strong image quality as well. With a score of Very Good from our judges, its output was the best of the HD DVD players. But colors looked slightly muted compared with those generated by the best players, and background details were a little less sharp and deep.

Panasonic's DMP-BD10 handled detail, brightness, and contrast very well, but the unit faltered on color quality. A mild reddish tint marred skin tones.

Toshiba's HD-A2—the least-expensive player in this group—suffered from subpar color handling, brightness and contrast, and detail. Only the Xbox 360 combo did worse, and by a significant margin. The Xbox 360's component-only output produced images that were less sharp and crisp than those output over HDMI. Both players top out at 1080i resolution, which could explain the interlacing artifacts we saw in *Mission: Impossible III*'s chapter 7, where a brick wall showed a distracting moiré pattern and vibrating bricks. Viewed on competing players at 1080p, the bricks were solid, distinct, and motionless.

THE AUDIO PHILES

THE BEST SOUND came from the Sony BDP-S1, followed by the two Toshiba models (which tied for second place overall) and the Pioneer and the Philips (which tied for fourth).

Dissecting these players' audio support is a mess. (For specifics on the best audio output these players support, see find. pcworld.com/56574.) If you thought DVD's sound terminology was arcane—with Dolby Digital, Dolby Surround, DTS Digital Surround, and PCM— you ain't heard nothing yet. To that jargon add Dolby Digital Plus, Dolby TrueHD, DTS-HD Master Audio, and Linear PCM.
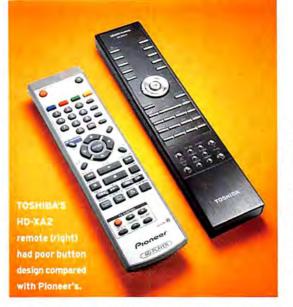
To find out what all that will sound like to your ears, we attached each of the players to Pioneer's Elite VSX-82TXS audio/video receiver and NHT's Classic series 5.1-channel surround-sound system. We configured the players to handle their own audio processing.

In the first two chapters of *The Phantom of the Opera*, we listened for the sounds of birds flying,

TOSHIBA'S HD-XA2 remote (right) had poor button design compared with Pioneer's.

MICROSOFT'S XBOX 360 and HD DVD Player (right), and Sony's PlayStation 3 (with its slick power button).

the clatter of the crystals on chandeliers, and the strains of instruments in the orchestral score; all sounded crisp and clear on the Sony BDP-S1 and on the two Toshiba players. We compared the 5.1-channel Dolby Digital sound tracks; the Blu-ray version of this film lacks the HD DVD version's Dolby TrueHD track.

Linear PCM blew me away in informal tests I performed using the Blu-ray version of *The Last Waltz*, a 1976 concert film recorded in high-quality analog. As heard piped through our test setup, from either the Sony BDP-S1 or the Pioneer, the film's music hit me with the full force of a live rock concert; every inflection by the individual musicians was perfectly clear. The same Linear PCM sound track played through the Philips and Samsung players, and to a lesser extent the Panasonic model and the Sony PlayStation 3, sounded muffled and muddy.

FORM AND FUNCTION

THE THREE HD DVD models—Toshiba's HD-A2 and HD-XA2, and Microsoft's Xbox 360—clearly lead the way in integrating interactive features, including picture-in-picture video, persistent bookmarks you can view after ejecting a disc, and the capability to deliver future content via ethernet. This is not surprising, given that the HD DVD format requires players to have the necessary hardware for a minimum level of interactivity.

Annoying design problems among the players abound. All of the units we tested responded slowly to commands, but the Pioneer Elite BDP-HD1 and the Sony BDP-S1 were the worst; each of those models took more than a minute just to accept a ▶

disc. Sony gave the BDP-S1 power and eject buttons that are merely thin slivers of metal, placed so high on the front panel that they're difficult to get to if you've stacked another component on top of the player. Toshiba's HD-XA2 remote uses similar sliver buttons, making it frustrating to use. And the Panasonic DMP-BD10 requires you to lower its front flap—which conceals the drive tray and buttons—just to use the machine.

Toshiba's players had issues when we switched from the players to another HDMI input, and then back again. The HD-XA2 stopped, indicated that the resolution had been changed, and insisted on restarting the film from the beginning. The HD-A2 froze up entirely, and needed to be rebooted. Toshiba says it is investigating why this HDMI handshaking issue occurred.

GAME CONSOLES DO MOVIES

MICROSOFT'S AND SONY'S game machines offer a relatively inexpensive way to enter the world of high-def movies. While the PlayStation 3 easily beats the Xbox 360 here, neither system offers an optimal home theater experience.

If you already own an Xbox 360, the USB-connected HD DVD Player costs an additional $200—a bargain if you're a gamer looking to play high-def movies on the cheap. But movie playback is clearly a secondary consideration on the Xbox 360. For instance, when you press the eject button on the Windows Media Center–like remote, out comes the Xbox 360's DVD drive tray; the HD DVD Player's tray remains closed. Furthermore, the Xbox 360 provides the worst picture and sound of the bunch by a wide margin, due to its analog-only component video and comparatively limited audio support.

The dramatically sloped PlayStation 3 offers a far better movie experience—though, like the Xbox 360, it won't integrate well with other electronics components in your entertainment rack. For now, the PlayStation 3 is the cheapest Blu-ray player around, even if you factor in an extra $25 for the optional remote control. The PS3 produces terrific high-definition video, and it has some pleasing movie-centric touches—insert a movie disc into its slot-loading Blu-ray drive, and the unit powers up and starts the movie. But it also has a way of reminding you that movies aren't its main business: Slip in a disc while the unit is on, and nothing happens (you have to initiate playback manually).

BUY NOW—OR TOMORROW?

EVEN IF YOUR HDTV doesn't support 1080p resolution, any of these next-gen players will give you a huge image-quality advantage over a conventional DVD player. Our best player overall happens to be a Blu-ray player, Samsung's BD-P1000; it delivers great image quality at a more reasonable price than does the Sony BDP-S1, our best image and audio performer.

Not in a hurry to see high-def movies? I recommend waiting another six months. By then, lower-cost players will be available (Sony has announced a $600 Blu-ray player, due out this summer). And a clearer winner in the format war may emerge. ▶

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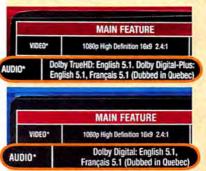
DIM THE LIGHTS, kick back with some popcorn, and get ready to enjoy movies as never before. Once you see the difference high-definition video makes, you'll find it difficult to go back to watching standard-def DVD.

Don't expect these early discs to have a slew of whiz-bang extra features, however. High-def discs (which run $20 to $40 a pop) carry a premium—but you're paying mostly for the improved image quality. Some discs provide high-end audio, and a few supply extra features in 1080p; but too many of the high-def discs simply have the same extras and 5.1-channel Dolby Digital or DTS Surround sound tracks as their DVD counterparts. Audio options vary among titles, and even the same title may not get the same audio treatment across formats. The Blu-ray Disc version of *The Phantom of the Opera*, for example, has only 5.1-channel Dolby Digital audio, while the HD DVD version provides 5.1-channel Dolby TrueHD.

MAIN FEATURE	
VIDEO*	1080p High Definition 16x9 2.4:1
AUDIO*	Dolby TrueHD: English 5.1. Dolby Digital-Plus: English 5.1, Français 5.1 (Dubbed in Quebec)

MAIN FEATURE	
VIDEO*	1080p High Definition 16x9 2.4:1
AUDIO*	Dolby Digital: English 5.1, Français 5.1 (Dubbed in Quebec)

WARNER'S *Phantom of the Opera* offers different audio sound track options on HD DVD (top) and on Blu-ray Disc.

The extras offered with movies depend greatly on what the disc's format currently supports. Movies in both formats introduce pop-up menus, which let you do things like select scenes without exiting the movie. Other features, such as on-demand picture-in-picture commentaries you can turn on at will, are on only HD DVD movie discs right now, largely because Blu-ray players can't handle them. HD DVD discs currently have more-innovative extra features than Blu-ray ones do. For additional information on the extras HD DVD and Blu-ray discs provide, see find.pcworld.com/56807.

—Melissa J. Perenson

Play HD Movies on a PC

| BY JON L. JACOBI |

SO YOU WANT to play HD DVD or Blu-ray discs from Hollywood on your existing computer? Well, it's going to cost you—not only in cash, but also, if your experience is anything like mine, in frustration. The hardware you'll need is expensive, the software is immature, and your graphics card or monitor, even if recently purchased, may not measure up.

Though I got my setup to play Blu-ray movies, I had difficulties with HD DVD movies, proof that the upgrade path to high-def playback isn't ready for the masses just yet. Playing high-def movies on your PC requires more than just adding a new optical drive to your existing rig. Hardware and software vendors recommend at least 1GB of memory and a dual-core processor.

The bigger gotcha to playing back both Blu-ray Disc and HD DVD movies, though, concerns copy-protection schemes. Commercial movie discs are encrypted with the new Advanced Access Content System (AACS) protocol; but Intel's High Definition Content Protection, a hardware handshaking/security protocol embedded in device firmware, is the real roadblock. All of the hardware in your PC's chain—the HD DVD or Blu-ray drive, the graphics board, and the monitor—must be HDCP-certified to play back copy-protected content at full resolution via a digital connection, either DVI or HDMI.

Shopping for HDCP-certified devices remains tricky. If the box doesn't say "certified," don't buy the product. Some graphics cards state HDCP *compliance* in their specs, or boast HDTV output, but don't actually implement HDCP (only implementation earns the "certified" moniker). Look for a card based on an nVidia GeForce 7– or GeForce 8–series GPU with PureVideo

HD drivers, or AMD's ATI Radeon X1650 or a better card with the latest Catalyst drivers. Even if a board has one of these chips, however, that doesn't guarantee that it implements HDCP. nVidia grants its PureVideo HD logo only to certified cards; AMD doesn't have such a logo at this time.

Because of HDCP, the hardware you'll need to play high-def Hollywood movie discs at top quality on your computer gets expensive quickly, beginning with a $500 hd100 HD DVD-ROM drive from HP or a Blu-ray burner such as Sony's $700 BWU-100A or Lite-On's $600 LH-2B1S. Add to this an HDCP-certified video card ($150 or more) and an HDCP-certified monitor of reasonable size (expect to pay at least $700 to get 1920 by 1200 resolution for full 1080p; though less-costly HDCP monitors exist, many don't accept 1080p output). The total upgrade bill could easily top $1500 if you were starting from square one.

GETTING IT TO WORK

TO SEE JUST what it takes to upgrade a system to play HD, I tried a number of components in search of the perfect setup—which I subsequently redefined as one that actually worked. My own Dell UltraSharp 2405 monitor let me play high-def only through the analog VGA connector, so I switched to ViewSonic's $799 VX2435wm and Dell's $1399 UltraSharp 2707WFP (24 and 27 inches, respectively) HDCP-certified wide-screen displays. Replacing my existing graphics card with a GeForce 8800–based card completed the HDCP chain.

I then turned my attention to watching movies. I had to install several versions of CyberLink's Power DVD Ultra 7.3 software before I managed to get Blu-ray movies to play. Alas, HD DVD was more problematic. I never got my ad hoc test system to play HD DVD movies via my monitor's DVI connection; even the PowerDVD 6.5 HD DVD Edition app that came with HP's hd100 drive took me only as far as the FBI warnings, titles, and menus before a black screen kicked in. HP and CyberLink were at a loss to explain this.

You can avoid compliance worries by buying an expensive yet decked-out machine that's preconfigured for high-def playback. Doing so worked best for me: I had no issues using HD DVD on a preconfigured HP Media Center PC.

Is watching movies on your PC worthwhile? Yes and no. The picture is a visual treat, visibly better than DVD, even on a screen that's small compared with a gargantuan plasma or LCD TV. The question is, will you get playback to work on *your* PC? Unfortunately, you may not know this until you actually jump in and give it a try. ∎

PC ADD-ONS: HP'S HD DVD-ROM drive, left; Blu-ray drives from Sony (top) and Lite-On.

Jon L. Jacobi is a San Francisco–based freelance writer. Melissa J. Perenson is senior products editor for PC World. *Contributing Editor Lincoln Spector writes about film for Bayflicks.net.*

MAKE YOUR NETWORK BETTER

Here's help for real-world hassles, from dead spots to security threats to streaming-media hiccups.

BY BECKY WARING

NETWORKS ARE DANDY when they hum along behind the scenes, but all too often they fail. When your printer goes AWOL or your Skype calls break up every time your spouse starts watching You-Tube, it's time to get your geek on and learn what makes your network tick. Here are some tried-and-true strategies—and some new tricks—to help you make your network behave.

ILLUSTRATIONS: DIEGO AGUIRRE

Nail the Basics

HANDS DOWN, the most common network problems are disappearing Internet connections, printers, and PCs.

Lost connections: Usually these can be solved by rebooting your broadband modem, network router, and/or computer. But if you have to do this repeatedly, your router and PC settings are likely culprits.

Start by extending your router's DHCP lease time (the amount of time the router reserves an IP address for a device on the network) to a period of at least a week. You can access this setting through your router's browser-based firmware.

If disconnects are affecting a laptop, check the power management setting for its network adapter. In Windows XP, go to the Device Manager's 'Network Adapters' area, find your adapter, and select *Properties*. Under the Power Management tab, uncheck the box that turns off the adapter when power saving kicks in. Your battery may run down a little quicker, but you'll have a stable network connection.

Domain-name system (DNS) services are another possible factor that can contribute to lost connections. DNS servers are the PCs on which your ISP stores the databases that it uses to translate individual URLs (like www.pcworld. com) into their corresponding numerical IP addresses on the Internet. If you receive messages informing you that Web pages can't be found or that e-mail can't be retrieved, try using the DNS servers at OpenDNS.com in place of those at your ISP. Start by accessing the wide-area network (WAN) settings in your router's browser-based firmware; then change the IP addresses for DNS to 208.67.222.222 and 208.67.222.220. OpenDNS is free, and it blocks known phishing sites.

D-LINK'S USB RANGEBOOSTER G Multifunction Print Server supports scanning as well as printing over a Wi-Fi or ethernet network.

Disappearing printers: If your shared USB printer seems to come and go with a mind of its own, make sure the computer it is attached to isn't hibernating. If possible, connect your printer to a desktop PC (as opposed to a notebook), and leave it on. (To cut back power consumption, allow the display—rather than the PC—to go into sleep mode.)

In Windows XP, also verify that 'File and Printer Sharing for Microsoft Networks' is installed for all network adapters so that switching between wired and wireless networks doesn't kill printer sharing. In XP, go to *Control Panel•Network Connections*, and (for each network adapter) right-click the device and select *Properties*. If you don't see *File and Printer Sharing for Microsoft Networks* in the window that appears, click the *Install* button to add it.

Better yet, set up a print server so that you don't have to worry about working through a host PC. Some routers have built-in USB printer ports; stand-alone print servers plug into your router. If you use a multifunction device for printing, look for a print server that also supports scanning, such as D-Link's USB Range-Booster G Multifunction Print Server (list price $100, find.pcworld.com/56594).

Invisible PCs: In many cases, network file-sharing problems stem from improper workgroup and PC naming.

Make sure that each computer has a unique name; multiple PCs identified as 'Desktop' or 'Dell' can cause mixups. Don't use spaces in names (Windows ME and earlier Windows OSs don't support it), and don't create names of more than

IP PRINTING

Print Across Networks and the Net

YOU BROUGHT YOUR corporate notebook home, but now you find that you can't print on your home network—or over a VPN connection to a printer in your office. What to do? IP printing, which most newer networkable printers support, is your best bet. You'll need the printer's IP address (get it from your IT staff, or check with your printer vendor on how to find it—by printing a test page, for example). Then run the Add Printer wizard in XP's 'Printers and Faxes' window. Check *Local Printer*, and under 'Select a Printer Port', choose *Create a New Port* and *Standard TCP/ IP Port* in the drop-down menus. Enter the printer's IP address, click *Next*, and you will initiate the usual printer installation routine, where you can pick a driver (either Windows' default driver or the vendor's driver, if you have it).

IP PRINTING ALLOWS you to print from a corporate notebook to a home workgroup or remote Internet-connected printer.

15 characters. Also, confirm that all PCs use the same workgroup name. The default name in Windows XP Home is 'MSHome'; in older versions of Windows and in Windows Vista, it's 'Workgroup'. To change either the workgroup or the computer name in XP, click *Start•Control Panel•System*, and choose the *Computer Name* tab.

The Vista difference: Still having major unresolved sharing issues? It's time to consider upgrading to Windows Vista. The new operating system's Networking and Sharing Center lets you know which sharing features are enabled and makes configuring them easy. Vista's Link Layer Topology Discovery automatically detects network devices and allows you to see their locations on a Network Map.

Break through firewalls: Vista's firewall is smart enough to permit sharing within a workgroup. But if that's a problem with XP's firewall, try a free third-party utility. ZoneAlarm's Trusted Zone feature lets workgroup computers communicate.

Or sidestep XP's file and printer sharing complexities altogether by adopting a program such as Network Magic ($30 for three PCs, $40 for five, and $50 for eight). Like Windows Vista, Network Magic (one of our 100 best products of 2006; see find. pcworld.com/56595) puts all sharing and networking functions in one place, and it simplifies sharing folders and printers. A special mode even protects shared folders when your laptop is connected at a Wi-Fi hotspot, a major security concern. A free version of Network Magic provides Internet connection repair and wireless network protection, but only the paid version supports printer and file sharing as well.

Beef Up Security

THE ONLY WAY to guarantee the security of your network is to barricade it from the outside world—no Web, no e-mail, nada. But you need not adopt NSA-appropriate

THE VIEW FROM VISTA: Windows Vista's Network and Sharing Center shows you what's connected and simplifies configuration.

tactics to keep your data reasonably safe.

Put up walls: The road to a secure home network begins with a hardware firewall. Most routers have one, but those built into some inexpensive routers rely on NAT (network address translation) alone rather than using SPI (stateful packet inspection) technology—a superior approach designed to ensure that your computers receive only data they have specifically requested. Be sure, however, to change your router's default password when you set it up, and periodically thereafter.

Establish a second line of defense at each computer by turning on automatic Windows Updates, and installing antivirus, antispyware, and personal firewall software. Either buy a security suite (Symantec and McAfee offer ones that cost about $70 each) or use individual best-of-breed utilities like Webroot SpySweeper ($30), BitDefender antivirus ($30), and ZoneAlarm firewall software from Check Point (in its basic form, ZoneAlarm is free).

Whichever approach you take, don't rely on Windows XP's Windows Firewall for your protection, because it can filter incoming data only. ZoneAlarm and other third-party firewalls are bidirectional, protecting both incoming and outgoing information. Windows Vista's firewall is bidirectional, too, but you have to configure outgoing filtering yourself in a screen that you reach by typing **wf.msc** at a command prompt (for directions on how to proceed, see find.pcworld.com/56596). Vista also comes with Windows Defender antispyware, but not antivirus software.
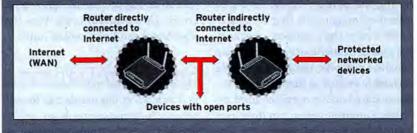
Keep things simple by using the same utilities on all your PCs (look for economical "family packs"). Then install them ▶

SECURITY

Add a Second Network for Safety

IF YOUR KIDS open lots of ports on your router for games and video chats, or if you want to run a home Web server or public Wi-Fi network, consider setting up a second router to isolate these risky activities from the rest of your network. In a nutshell, you plug one router into the other, and assign each a different starting IP address (such as 192.168.1.1 and 192.168.2.1). Then you attach your servers—or the at-risk PCs—to the router that's directly connected to your broadband modem, and all your other computers to the second router. Internet traffic to and from the unsafe area will not reach your secure subnetwork at all.

Router directly connected to Internet

Router indirectly connected to Internet

Internet (WAN)

Protected networked devices

Devices with open ports

while signed in on an administrator account, or—if appropriate—work with the parental controls found in many packages (and in Windows Vista). Keep your password secret: Remember, your network is only as secure as its weakest link.

Cover the airwaves: Firewalls and security suites are futile against packet sniffers that capture wireless traffic on a given frequency. Use the strongest encryption standard your Wi-Fi equipment supports: From strongest to weakest, the options are WPA2, WPA, and WEP.

Intruders armed with readily available software can break into WEP in minutes, rendering it virtually worthless except as a method to prevent bandwidth hogging by your neighbors. We recommend that you invest in new adapters if necessary to ensure that you can make the switch to WPA. To provide both your old and your new adapters with maximum security, choose a router that offers a simultaneous WPA+WPA2 mode.

Regardless of anything you may have heard to the contrary, neither using MAC (Media Access Control, a unique hardware identifier) address filtering nor turning off SSID (service set identifier—basically your Wi-Fi network's name) broadcasting is an effective security measure. Both are easier to bypass than WEP, and they can create connection and administration hassles.

MAC address filtering, for example, requires you to enter a device's MAC address into your router's firmware to authorize it to connect to your network. But anyone listening in can spoof your authorized MAC addresses on their own equipment. Similarly, sniffers can detect even nonbroadcast SSIDs, so turning off broadcasting only makes it harder for legitimate users to connect to your network.

Safe travels: Open hotspots are notorious sources of infection. For true security on public networks, use a virtual private network to encrypt all Internet traffic between your computer and an intermediate server. Companies often run their own VPN servers for employees; or you can

sign up for a VPN service such as Witopia PersonalVPN ($40 per year, find.pcworld.com/56597) or JiWire Hotspot Helper ($25 per year, find.pcworld.com/56598). (Full disclosure: PCWorld.com relies on JiWire to power its HotSpot Finder.)

Next, in your Wi-Fi settings, turn off ad hoc (computer-to-computer) networking and prevent automatic connections to nonpreferred networks. In XP, you can

YOUR ODDS OF picking up malware decrease if you deny automatic connections to unknown networks.

change both of these settings by clicking the Wi-Fi icon in the system tray and selecting *Change advanced settings*. Under the Wireless Networks tab, click *Advanced*, followed by *Access point (infrastructure) networks only*. Also, uncheck *Automatically connect to non-preferred networks*.

In Windows Vista, turn off the Vista Network Discovery feature (which allows other computers to see you on a network) when you're at hotspots. Vista will switch it off automatically if you designate a connection as 'Public', but alternatively you can disable it manually in the 'View Network Status and Tasks' control panel.

Speed Up Transfers

IF YOUR WI-FI downloads take forever, network backups bog you down, or your Slingbox won't sling, give these tips a try.

Use wires whenever possible: A wired network (ideally one based on wired ethernet) is inherently more reliable and usually much faster than the open airwaves. There's generally no reason for you to locate a network storage drive at a distance from your router, so instead plug it in to an available ethernet port. The same goes for a network printer.

Get gigabit: Most recent PCs have built-in gigabit ethernet, which means that they can transfer data at a whopping 1000 mbps—but only if your router also possesses a gigabit switch. For network backups, the extra throughput can mean the difference between an all-night operation, and one that completes itself in a fairly short amount of time. Wi-Fi gigabit routers run about $150.

Buy matching Wi-Fi gear: To achieve the top speeds promised by the latest Wi-Fi standard, draft-802.11n, every wireless device on your network must have a draft-n adapter (price: about $100 each). Be sure to update the firmware on any draft-802.11n devices regularly, as vendors are now bringing the first products into compliance with the second draft of the standard, and this should help with interoperability.

Change the channel: The biggest obstacle to good Wi-Fi reception is no longer distance (since most MIMO and draft-n routers provide whole-house coverage), but interference resulting from nearby networks: In any urban area, you'll probably see a long list of available networks. And because the 2.4-GHz band that 802.11b, g, and most new n gear operates within has only three nonoverlapping channels, networks neighboring yours are likely to degrade your throughput. In fact, the latest 802.11n draft effectively mandates a 50 percent reduction in performance when your network is in the presence of other active Wi-Fi networks.

To minimize interference, install and

BUFFALO'S NFINITI DUAL Band Router can support 2.4-GHz and 5-GHz traffic at once.

run a utility such as the free NetStumbler (www.netstumbler.com/downloads) to determine the signal strength and channel of each available network; then set your router to the channel that is farthest from those of the strongest nearby networks. (A router's automatic channel selection feature does this for you.)

In addition, you might consider getting a dual-band draft-n router, such as the Buffalo Nfiniti Dual Band Router ($299, find.pcworld.com/56599), which supports draft-n traffic on both 2.4-GHz and 5-GHz bands. This lets you keep older 802.11b/g devices on the relatively crowded 2.4-GHz band, while using the uncluttered 5-GHz band (consisting of some 20 nonoverlapping channels) for your high-bandwidth apps such as video streaming, as new 5-GHz draft-n products arrive.

Get Media-Ready

WHEN IT COMES to smooth video playback and voice-over-IP phone calls, speed alone isn't always enough.

Try powerline: If you can't install ethernet, consider adopting powerline (rather than Wi-Fi) gear. Several powerline technologies support near-ethernet speeds; in our tests with streaming high-definition video, Homeplug AV was the least susceptible to interference from other electrical devices (see find.pcworld.com/56606).

Products such as Linksys's PowerLine AV Ethernet Kit ($180, find.pcworld.com/56600) move data over your home's electrical wiring. Adapters plug into standard wall outlets; to set up the network, begin by connecting one adapter to an available ethernet port on your router. Then add other devices by running cables from their ethernet ports to other plugged-in adapters. You will not have to worry about overloading your wireless network with high-definition video streams, and performance will be far more reliable than on a wireless network, especially in a large home.

Upgrade your Wi-Fi: If you still want to use wireless for streaming media, make sure that you get draft-802.11n gear: Not only is it fast, but it has so-called quality-of-service (QoS) technology that prioritizes media streams, VoIP phone calls, online game play, and other particularly time-sensitive applications. And don't forget to upgrade your firmware to Draft 2.0 of the standard; practically all of the biggest Wi-Fi vendors are expected to be posting free firmware upgrades to Draft 2.0 by the time you see this.

Invest in a gaming router: Does World of Warcraft rule your house? For advanced gaming, a specialized router helps deliver maximum performance for both Internet and local multiplayer game play; this is especially important if several users access the network in your household simultaneously. Gaming routers have QoS prioritization, are tuned to reduce network latency, and usually have faster processors, all of which increase the responsiveness of PCs on the net-

work. Linksys's Wireless-N Gigabit Gaming Router ($200, find.pcworld.com/56601) supports draft-802.11n Wi-Fi, gigabit ethernet, and game tuning.

Make Better Backups

TOO OFTEN, PEOPLE plan to use a network drive for regular hard disk backups, but never actually do so. Maybe the network share isn't mounted (visible to your backup program) when backup time rolls around (add it to My Network Places to avoid this situation). Or the system to be backed up is turned off, asleep, or on the road. Or the backup is interrupted. Here's how to increase your odds of success.

Choose network drives carefully: Shared network storage drives come in two basic types: regular external USB drives designed to attach either directly to the USB storage port included on some routers or via an ethernet adapter such as D-Link's $80 Express EtherNetwork DNS-120 Network Storage Adapter (find.pcworld.com/56602); and network-attached storage (NAS) drives that have built-in ethernet.

If you go with a USB drive, you can usu-

LINKSYS'S WIRELESS-N Gigabit Gaming Router prioritizes time-sensitive multimedia and VoIP data.

ally detach it from your router and plug it into a PC (say, at another location) if you like. USB drives tend to be easier to set up, and you may use an old USB hard drive you already have as your storage device.

True network drives, in contrast, have their own processor and OS, and can ▶

be attached only to your network. They generally have many more features, and they normally allow setup of private user accounts ("shares") as well as public areas of universal access. The models topping our network-attached storage drive chart (see find.pcworld.com/56603) are the Infrant ReadyNAS NV (about $900) and the Maxtor Shared Storage II (about $750).

For best security and performance, use a NAS drive that has gigabit ethernet (buy a gigabit router if you don't have one) and RAID 1 or 5 redundancy. Don't risk losing a 500GB music collection stored on a NAS drive without any backup; the best way to maintain a copy of your NAS drive is to mirror it using a RAID array.

Whichever type of drive you choose, make sure that it's large enough to accommodate future growth. Backups often fail because the backup drive is full. We recommend setting aside 1.5 to 2 times the storage capacity of your current network for your backup drive; double that if you intend to mirror your network drive.

Perform incremental backups: By copying only files that have changed since the most recent previous backup, you'll vastly reduce the load on your network, and the

BACKUP

Multiplatform Network Backups

IF YOU HAVE several PCs running different operating systems that you plan to back up on one network drive, you may run into a problem with file names that work fine on one system but are illegal on another. If you truncate or change the names when you back up the files, the backups won't be useful. So instead of using USB-attached storage devices, which usually can be formatted only as Windows drives, purchase a NAS drive that offers specific support for each platform you use; afterward you can designate shares as appropriate (for instance, Windows or Mac).

length of time it takes to do a backup. Cobian Backup (free; see find.pcworld. com/56604) can perform full or incremental backups with or without compression, and can encrypt your data for better security on shared network drives.

Keep your PC awake: The need to ensure that your PC is up and running at backup time may seem obvious, but offline computers are the most common cause of failed backups. Don't turn off your computer at night—just let it hibernate. And make sure that your backup software can wake up your computer. If it can't, use XP's Scheduled Tasks wizard (under *Programs•Accessories•System Tools*) to wake it up at backup time; for more on how to set this up, see find.pcworld.com/56605.

Add a Mac

OKAY, YOU'VE networked your Windows PCs. But now a new Mac is in the family. How will it fit in? Will it work with your printer? Will you be able to share files with it the way you can with your PCs?

In most cases the Mac OS X operating system provides everything you need to connect your Mac to your Windows network and share files and printers. You can plug your new Mac into your wired network or access your wireless router, just as you would with a new PC, by selecting your SSID from a list of available Wi-Fi nets and then entering your wireless encryption key. All recent Macs support WEP, WPA, and WPA2.

In order to share files and printers, the Mac cleverly assumes the guise of a PC. It does so by implementing the SMB/CIFS Windows file-sharing standard and using Windows workgroup naming. The default workgroup name for any Mac is Workgroup; however, you can change this name to MSHOME, for example, by running the Mac's Directory Access utility, which also supports the Windows Active Directory (used by corporate servers).

Next, turn on 'Windows Sharing' in the Mac's Sharing Preference Pane and enable each of the user accounts that you'd like to be able to share. The new Mac

should appear as a member of your workgroup when you browse your network.

After selecting it and entering your user name and password, you'll be able to navigate the Mac drive and copy or upload files by dragging and dropping. This works in both XP and Vista.

Similarly, you can print from your Mac to shared Windows printers via SMB, though the setup process is not obvious. In the Mac's Printer Setup Utility, click *Add*. If your Windows printer does not

THE MAC OPERATING system carries all the software it needs to join a Windows network and use a network-connected printer.

show up in the resulting list of available printers, choose the *More Printers* button, which brings up the Printer Browser.

Now select *Windows Printing* and *Network Neighborhood* from the drop-down menus. Your local workgroup will appear in the window; when you select it, you'll see a list of shared printers to choose from. Thereafter, the Windows printer will appear in the Mac's Print dialog box.

If all of this sounds like too much of a hassle, consider buying Pure Networks' Network Magic for Mac ($30 for three Macs, $40 for five, $50 for eight). A preview version is available for download (find.pcworld.com/56806). It promises to do for the Macs on your network what its Windows counterpart does for PCs. ■

Becky Waring is a Berkeley, California-based freelance writer specializing in wireless technology and digital media.

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BEST NETWORKING WEB SITES

Looking for help with a networking problem? Chances are you'll find the advice or instructions you need at one of these sites.

Practically Networked (www.practical-lynetworked.com): The leading home and small-business networking site, with **PRACTICALLY NETWORKED** tips and tutorials on everything from setting up file sharing to using dynamic DNS services. The troubleshooting guides are invaluable, and an active peer-help forum is another great resource.

SmallNetBuilder (www.smallnetbuilder.com): A bit more techie than Practically Networked, with articles dedicated to such specialized topics as how to set up **SmallNetBuilder** LAN parties and how to crack WEP encryption. You will also find very good FAQs and tutorials on general networking issues.

Real Help for Your Small Network

Wi-Fi Planet (www.wi-fiplanet.com): The place to go for truly deep wireless tutorials and testing. Don't miss the site's articles discussing SSID spoofing (find.pcworld.com/56771) and the use of VPNs at public hotspots (find.pcworld.com/56772). Has an active discussion area, too.

CERT Home Network Security (find.pcworld.com/56773): A comprehensive and unbiased guide to home network security, maintained by the Carnegie Mellon–based Computer Emergency Response Team, a federally funded Internet security research and development center. The guide also serves as a fantastic primer on networking terms and technology. It's required reading for the network administrator in your home.

SecurityNow (www.grc.com/securitynow.htm): Great network security resource, with transcripts of Steve Gibson's and Leo Laporte's weekly Security-Now podcasts, which translate complex security issues into plain language for a broad spectrum of visitors.

Shields Up (find.pcworld.com/56774): Also from Steve Gibson, a very popular free Internet security test site. Go here to find out about holes (such as open ports) in your network that potential hackers could exploit, as well as useful tips on how to close them.

Port Forward (www.portforward.com): Need help removing roadblocks obstructing desirable traffic to and from your network? At this site you can examine a comprehensive list of ports used by Internet games, streaming video, and other applications, with port-forwarding setup guides for most popular routers.

DynDNS (www.dyndns.com): Most ISPs assign IP addresses dynamically, meaning that yours is always changing. But if you need a fixed IP address for your Web server, Webcam, or media streamer, DynDNS's Dynamic DNS service will provide it—and will do so free of charge for home users.

MacWindows (www.macwindows.com): Your best resource for cross-platform problem solving, including details on how to connect Macs to Windows servers and vice versa. ∎
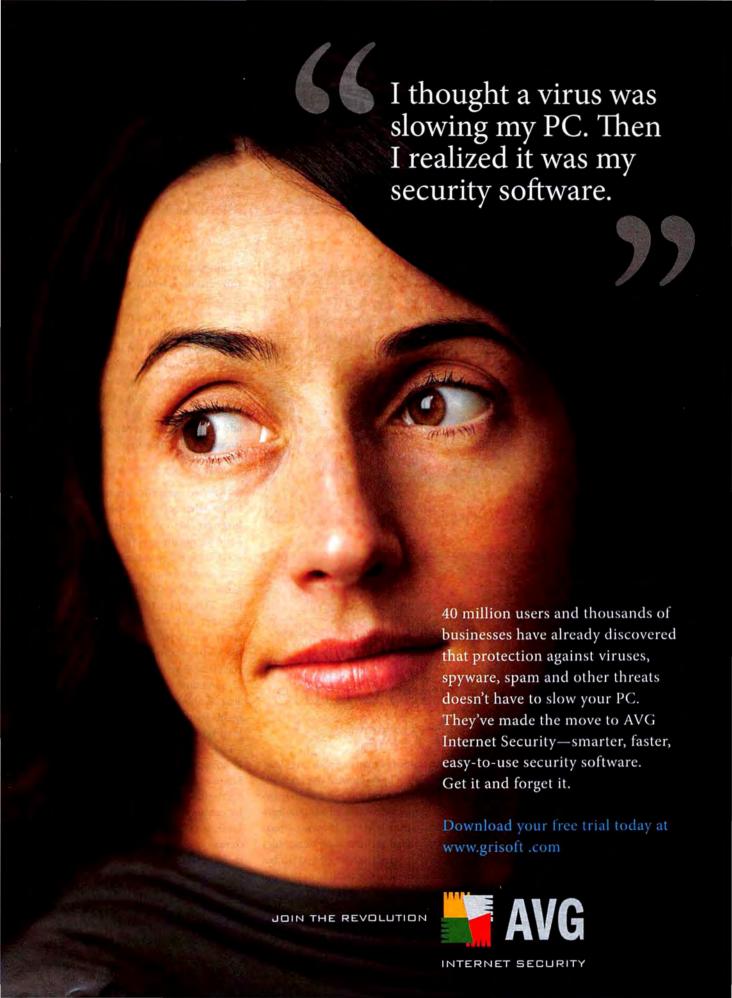
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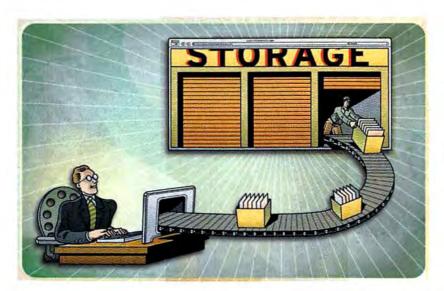
Security Checklist

1. USE A hardware router, even if you have only one computer.
2. CHANGE YOUR router's default password to ensure that intruders can't fiddle with your settings.
3. USE A bidirectional personal firewall, such as ZoneAlarm.
4. TURN ON automatic updates to keep your Windows OS secure.
5. USE BOTH antivirus and anti-spyware utilities, and make sure that you keep them up-to-date.
6. CONFIGURE FILE sharing carefully if you're sure you need it—and if you don't need it, turn it off.
7. USE THE strongest Wi-Fi encryption scheme that all of your wireless equipment supports.
8. TURN OFF ad-hoc Wi-Fi networking and automatic connections to networks you're unfamiliar with.
9. INSTALL A second router to isolate at-risk PCs on your network (see find.pcworld.com/56782).
10. USE A VPN when traveling, to avoid picking up a virus that could otherwise spread to other PCs on your network when you get home.

FOR MORE TIPS on secure computing, visit the Spyware & Security Info Center at PCWorld.com (www.pcworld.com/tc/spyware).

HERE'S HOW

ONLINE STORAGE

ERIK LARKIN

Back Up Your Files Online Without Even Trying

I'M SURE THAT by now all of you back up critical files weekly or even daily, and religiously refresh your full-disk-image backup once every few months, right? No? Well, you're not alone. And while there's no substitute for a genuine backup strategy, the move toward desktop-caliber online applications has made it easier than ever to get some degree of backup protection without even trying.

New, mostly free online services with snazzy features allow you to effectively get backups for many of your irreplaceable files just by doing what you normally do—but with a twist. Through such services, you can ensure that your text documents, spreadsheets, browser bookmarks, digital pictures, and music files not only survive a catastrophic crash but also become more accessible to you and anyone you choose to share them with.

Of course, using a company's online storage means you'll have to be comfortable with the site's stability, Web security,

and privacy policy—or those of any company that may buy that site. Real backups (see find.pcworld.com/50234) and perhaps a RAID mirror on a second hard disk are still the best solution, and, like car insurance, they can make the difference between a bad day and a disaster. By using some or all of these Web services, however, you can easily gain some measure of backup in case of catastrophe, or add another level of redundancy to the backups you already have.

DOCS AND SPREADSHEETS

A HOST OF new sites are eager to challenge Microsoft for a slice of Office's huge pie. My two favorites are Zoho's suite for documents (writer.zoho.com) and Google's Docs & Spreadsheets (docs. google.com) for spreadsheets. Both free services include storage space for your files (Zoho offers 1GB; Google limits the number and size of documents and spreadsheets you can store—for details see find.pcworld.com/56724). Anything you create is autosaved to an online server, providing a de facto backup. You'll also be able to access all of your documents from any browser, without having to install software first.

Like many other advanced Web sites, Zoho and Google use Asynchronous Java-Script and XML—or Ajax—to present a desktop-app-like feel. Both offer hot-keys for common features, background autosaves, and other must-haves. Neither comes close to replacing Office if you need its full spread of features, and you may encounter an annoying though not game-stopping bug here and there in relatively new services. But for files you use at home, you probably won't miss a thing.

I love Zoho's sleek interface for docu-

ILLUSTRATION: PETER AND MARIA HOEY

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FIGURE 1: CREATE YOUR spreadsheets online with Google Docs & Spreadsheets, and let the service handle the backups.

ments, but I prefer Google's service (see **FIGURE 1**) for spreadsheets. You can easily use both services side-by-side.

If you do have Office, Zoho recently released a great plug-in (see **FIGURE 2**) that ties its service into Word and Excel. Install it, and a toolbar added to either app lets you open Zoho files straight into Office. When you make changes and click the Zoho *Save* button, the online document gets updated. You can also add Office-created documents and spreadsheets to your repository on Zoho.

Neither service is perfect, however.

FIGURE 2: ZOHO'S Word and Excel plug-ins allow you to access Zoho's service from within those applications.

Both require a stable Internet connection for accessing your files (though the Zoho plug-in does mitigate that need). Also, while you can import Office files into either service (through a site option or the Add button in the Zoho plug-in), doing so typically messes up the formatting. And you can forget about using Excel formulas, Word macros, and page numbers, as well as several other advanced features; if you import a file that contains any of these, it will break.
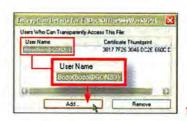
ONLINE BOOKMARKS

BROWSER BOOKMARKS ARE another painful loss in the case of hard-drive failure. If you're like me, you've sunk hours and hours of effort into discovering the best online information sources, both personal and professional. Losing them all would not make for a good day.

Here again, though, free online offerings can come to the rescue. Several Firefox extensions not only automatically back up your bookmarks to an online server but also synchronize them between browsers on multiple PCs. Foxmarks (**FIGURE 3**; foxmarks.com), my favorite, has some great setup options: If your machines get out of sync, you can replace all of your bookmarks with those that you've stored online, or replace what

you've stored with your local favorites.

After installation, the add-on invisibly syncs your bookmarks with no additional effort on your part. You're not only able to bookmark something at work and have it ready at home (without having to e-mail yourself the URL), but if your computer goes south, you merely need to reinstall Firefox and Foxmarks and then log in to restore all of your bookmarks.

Google offers a Browser Sync plug-in for Firefox (find.pcworld.com/56725) that syncs your bookmarks, as well as your cookies, passwords, history, and even

FIGURE 3: KEEP your bookmarks synced and safe with Foxmarks, a free Firefox add-on.

open tabs. The truly security conscious will want to avoid syncing passwords to someone else's server. I use Browser Sync strictly for passwords and browsing history—I got frustrated with the plug-in's frequent screw-ups in syncing bookmarks (possibly because I tend to keep my browsers running on my work and home computers simultaneously).

If you give either Foxmarks or Google Browser Sync a try, here's a tip for keeping your work and personal favorites ▶
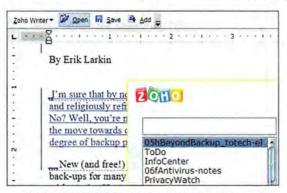
distinct: Preface your bookmark folders with a designation such as **Home-** or **Work-**, and then group those folders together.

PHOTO BACKUPS

HALF THE FUN of digital pictures is showing them off, so odds are you've already uploaded your digital snapshots to a photo-sharing site such as Flickr (flickr.com) or SmugMug (smugmug.com). Some of these sites have features that provide a decent de facto backup solution for your photos, as well.

You can upload an unlimited number of photos (JPEG only) to the new version 3 of Yahoo Photos (photos.yahoo.com). If you have a bunch, the upload will take a while. But afterward you (or anyone you share pictures with) can download the full-size image for free: Double-click the picture you want, and a Download option (see **FIGURE 4**) appears in the site's menu; choose the full-resolution image on the next screen.

One thing to keep in mind is that while you can upload as many photos as you like (in whatever resolution you choose), you must use your Yahoo ID (on the photo site, Yahoo Web mail, or any other Yahoo site or service) once every six months. Otherwise, the site will send a warning e-mail; and if you still don't log in, it will delete your pictures.

If disaster strikes and you lose all of the photos on your hard drive, downloading pictures one by one to your (new) hard drive could be a long and tedious chore. Another backup option is to upload your photos to Shutterfly (shutterfly.com),

which doesn't currently allow you to download a full-size image, but will send you an archive CD of your full-size pictures for a fee. And as with Yahoo Photos, you can upload an unlimited number of images to Shutterfly.

To order a CD, select *Shutterfly Store*, and from the drop-down menu under

FIGURE 4: YAHOO'S new photo service offers unlimited storage and lets you download full-size images from your collection.

Products choose *Gift Certs & CDs*. You'll need to pay up to $40 for the first 1000 images and $15 for every additional set of 1000 (plus shipping). It's pricey, but this alternative could be a much faster way to restore your entire photo collection.

DIGITAL MUSIC

THE MOST PAINLESS backup option for music is somewhat old-school, since it doesn't involve a snazzy new online service: Just use the original CDs. But if you'd rather avoid the painstaking task of re-ripping each and every CD when your PC kicks the bucket, your portable music player can come to the rescue.

Make sure that any player you buy is

large enough to store your entire music collection, with some room for growth. Storage space is getting cheaper for PCs and portable devices alike, so a number of choices for players can fit the bill. Aside from the ubiquitous iPod (available in 30GB and 80GB versions), Creative's 60GB Zen Vision:M and Microsoft's 30GB Zune are also good buys.

With an iPod and iTunes, your bail-out procedure is simply to reinstall iTunes and reconnect your iPod, and then follow the prompt to restore your music from your iPod. To reactivate music you've bought from the iTunes store, you may need to connect to the service and clear out your authorizations (click *Store•Deauthorize Computer*) so that your new PC can acquire the rights to play the songs.

With most other players, you can connect the unit to your computer as a USB mass storage or Media Transfer Protocol device and then drag and drop your music back onto your hard drive via Windows Explorer. You can use a similar method with an iPod: Either set your PC to show hidden files and folders, and then navigate to the hidden folder iPod\Control and copy the Music folder to your hard drive; or grab an app like the donationware EphPod (ephpod.com), which can do it for you.

If the directory or file names aren't properly preserved when you restore your music this way, you can have either iTunes or Windows Media Player reorganize and rename your music according to what it finds in the ID3 tags.

In Windows Media Player, click *Tools•Options*, select the *Library* tab, and then check the boxes for *Rename music files using rip music settings* and *Rearrange music in rip music folder*. Select the *Rip Music* tab and choose a folder and file-naming scheme by clicking the *Change* and *File Name* buttons. In iTunes, select *Edit•Preferences* in the menu and choose the *Advanced* tab. Check the box labeled *Keep iTunes Music folder organized*. ∎

Erik Larkin is a PC World associate editor.

ONLINE STORAGE FOR ALL TYPES OF FILES

IF YOU WANT a catch-all option for storing any type of file, try one of the plethora of online storage services. Typically you can share files you upload, and of course you can retrieve them if your hard drive tanks. My favorite is the Go-Daddy Online File Folder (find.pcworld. com/56726), which costs $20 per year for 2GB of storage. You can access the

service as a network place from your PC and then drag and drop files to it in Explorer, or you can save directly to it via most, though not all, programs. Another good service, Box.net, offers 1GB of storage for free or 5GB for $5 per month. It sports a nice, uncluttered Web interface, but doesn't let you map that storage as a drive or network place.

MAKE ENCRYPTED FILES STAND OUT

CONTROL ACCESS TO SECURE FILES

A FREEBIE TURNS FOLDERS INVISIBLE

The Simple Way to Keep Your Private Files Private

THERE'S ONLY ONE way to keep your files truly confidential: Encrypt them. The Encrypting File System (EFS) in most versions of Windows Vista, XP, and 2000 scrambles the contents of files and folders, making it very difficult for snoops to read them. It's easy to make encryption a part of your security arsenal.

Get ready to encrypt: EFS is in Windows Vista Business, Enterprise, and Ultimate; XP Pro; and Windows 2000. XP Home lacks EFS, and Vista Starter, Home Basic, and Home Premium allow only decryption—so you can read encrypted files but not encrypt them. To use EFS on a partition, that partition must be formatted using the NTFS file system. Not using NTFS? The switch is easy. See "Go With the NTFS Flow" at find.pcworld. com/56471 (the same steps work in Vista). Also, encryption requires that you use a password-protected account.

Stow your files: To encrypt a file or folder, right-click it in Explorer or any folder window and choose *Properties* (you can

also right-click a group selection to encrypt several files or folders at once). In the General tab, click *Advanced*, check *Encrypt contents to secure data*, and click *OK* twice (see **FIGURE 1**). If you're encrypting a folder, you'll be asked if you want to encrypt its files and subfolders, as well. Once encrypted, the files or folders will work like any others on your system; you don't have to use any special passwords to open or save them. Other user accounts on the PC, and other PCs on the network, can't view the file contents. Only someone who is logged in to your account with your password can access these files.

Streamline the steps: You can shorten the process by adding an Encrypt command to your right-click context menu (the command switches to Decrypt when you right-click encrypted files). You can do this in XP with a quick Registry edit, but you might find it easier and safer to use Tweak UI, a free PowerToy from Microsoft (find. pcworld.com/56472). If you already have Tweak UI on your system, you may need to upgrade to a more recent version. Once Tweak UI is downloaded, installed, and running, select *Explorer* in the left pane, scroll through the options on the right, and check *Show "Encrypt" on context menu* (see **FIGURE 2**). Click *OK*. Now when

you right-click an unencrypted file, you'll see a new command: Encrypt (or Decrypt if you've selected an encrypted item). Choose that option, and respond to any prompts. As of this writing, Tweak UI was incompatible with Windows Vista. However, Totalidea Software's free TweakVI Basic utility (find.pcworld.com/ 56473) allows you to tweak many Vista settings, letting you add the Encrypt/ Decrypt commands to the context menu.

Make encrypted files stand out: To see at a glance which files or folders on your system are encrypted (or which use NTFS compression, for that matter), open Explorer and choose *Tools•Folder Options*. Click the *View* tab, and in the Advanced Settings box, make sure that *Show encrypted or compressed NTFS files in color* is

FIGURE 2: MAKE ENCRYPTION EASIER by adding a context menu command using the Tweak UI freebie.

checked. Encrypted items are green, compressed ones blue. On the other hand, if you don't want others to see which files are encrypted or compressed, uncheck this option. Click *OK*. XP Pro and Vista users need this tip only if they want to disable the display of encrypted and compressed files in color, which the OSes do by default. To open the Folder Options dialog in Vista's Explorer window, click *Organize•Folder and Search Options*.

Give others permission: To give people who are using your system access to encrypted files, you can specify the individuals by their user name. First, right-click a single encrypted file (not a folder or multiple files, unfortunately), and choose *Properties*. In the General tab,

FIGURE 1: ENCRYPTION IS JUST a few clicks away via any file or folder's Properties dialog box.

click *Advanced*, and next to 'Encrypt contents to secure data', choose *Details*. In the middle of that dialog box, click *Add* to open the Select User dialog, which lists others who have a certificate (a digital

FIGURE 3: LET OTHERS IN ON YOUR SECRETS by giving trusted users permission to your encrypted files.

document that helps confirm authenticity) on your system (see **FIGURE 3**). Users can acquire certificates in various ways, but one of the simplest is by encrypting one of their own documents. (For more about certificates, choose *Start•Help and Support*, type **certificates overview**, then press **<Enter>**.) Select a trusted user and click *OK*. Note that the Find User button in the Select User dialog box won't work

FIGURE 4: USE VISTA'S extra-strength Bit-Locker encryption utility without a TPM security chip by editing Vista's group policies.

unless your network uses Active Directory, a Windows service in which administrators can store and make available information on network objects.

Disable, don't delete: Because encrypted files are associated with user profiles, deleting profiles prevents those people from accessing their encrypted files. For example, if an employee named Scott goes on leave but may return, disable rather than delete Scott's profile: In XP, choose *Start•Run*, type **lusrmgr. msc**, and press **<Enter>**. In Vista, click *Start* and enter the same command in the Start Search field. Click the *Users* folder icon in the left pane and double-click Scott's profile in the right pane. In the General tab, check *Account is disabled* and click *OK*; when Scott resumes working, uncheck this box.

A free EFS alternative: You might need a stronger level of protection than EFS offers. Browse to find. pcworld.com/56470 to download the free TrueCrypt encryption utility; also see the Windows Toolbox at right for another encryption alternative.

Lock it all up in Vista's BitLocker: Encrypting your entire hard disk makes it harder for malware to infect Vista's system files, while also making it tougher for snoops to decrypt your files. The Bit-Locker feature in the Ultimate and Enterprise versions of Vista encrypts the entire partition that the OS is installed on, and stores the encryption key in your PC's Trusted Platform Module chip, or on a USB flash drive. Since USB drives have become ubiquitous, and since most of us lack systems with a TPM chip, the flash drive option is the most attractive. Unfortunately it's disabled by default.
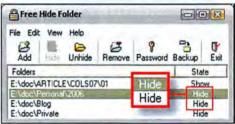
To enable this option, click *Start*, enter **gpedit.msc** in the Start Search field, and press **<Enter>** to launch Vista's Group Policy Object Editor. In the left pane, navigate to and select *Computer Configuration•Administrative Templates•Windows Components•BitLocker Drive Encryption,*

WINDOWS TOOLBOX

Get a Cloak of Invisibility With Free Hide Folders

SOMETIMES THE BEST way to keep people from prying into your personal folders is to keep the folders' existence secret from the get-go. That's easy to do with Cleanersoft.com's Free Hide Folders (find.pcworld.com/56474). The program lets you make any folder (and its subfolders and other contents) completely invisible with a just a little pointing and clicking. (Note that in Windows Vista, the program may not completely hide some known folders, such as Music in the Documents folder.) Free Hide Folders is password protected, so you're safe even if the bad guys know you're using the product. It also lets you back up your folders' hidden states in case you have a system problem. And as the name says, it's free.

and double-click *Control Panel Setup: Enable advanced startup options*. Next, select *Enabled*, check *Allow BitLocker without a compatible TPM*, and click *OK* (see **FIGURE 4**). Exit the editor.

Now whenever you launch the BitLocker Drive Encryption applet in Control Panel, it won't complain about the missing TPM module, and it will offer a new 'Turn On BitLocker' link. BitLocker requires that you be able to boot from your USB drive, and it also must have an additional nonencrypted partition. For further information, click the applet's *What should I know about BitLocker Drive Encryption before I turn it on?* link. ∎

Submit your Windows-related questions and tips to scott_dunn@pcworld.com. Windows Tips pays $50 for each published item. Scott Dunn and Scott Spanbauer are contributing editors for PC World.

Help Your PC's Graphics Make Vista and XP Sparkle

WINDOWS VISTA CLEARLY ups the ante on PC graphics power. No matter how basic or advanced your machine, chances are you can upgrade its graphics hardware to run Vista's Aero interface—or improve XP—for viewing online videos, playing games, and using other graphics-heavy apps.

Find the connection: If the video connector on the back of your PC is next to the USB, PS/2, and other ports that are attached directly to the motherboard, your system has integrated graphics. Make sure your computer has an open AGP or PCI Express x16 slot.

If your PC does not automatically disable the old graphics processor when a new card is installed, enter your system's BIOS (watch for the key to press when your system starts but before Windows loads) and disable the setting for integrated graphics.

Get the right card for your PC: High-end graphics cards typically need their own power connector. They also generate lots of heat, and often are so big they require the space of two expansion slots. Make sure your case has plenty of room inside.

Upgrade DirectX: Fast-action games and other graphics-intensive programs require a recent version of DirectX. Windows XP supports versions up to DirectX 9c, but to use the improvements in the
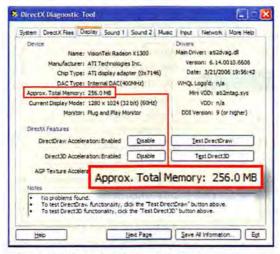
FIGURE 1: FIND ALL KINDS of useful data about your graphics hardware in Windows XP's DirectX Diagnostic Tool.

latest, DirectX 10, you'll need Windows Vista—and compatible graphics hardware that won't be mainstream until late this year. To check your DirectX version in XP, click *Start•Run* and type **dxdiag**; in Vista, click *Start* and type **dxdiag** in the Start Search box. Your DirectX version is listed under the System tab. The Display tab shows graphics RAM and other data on your video subsystem (see **FIGURE 1**).

Go to find.pcworld.com/56488 to see instructions on downloading and installing the latest version of DirectX.

Do driver diligence: Download the latest version of your card's driver from the vendor's Web site. Before you swap out the cards, however, remove the old card's driver to avoid problems. In XP, choose *Start•Control Panel•Add or Remove Programs*, select the current graphics driver, and click *Remove*. In Vista, click *Start• Control Panel•Uninstall a program* (*Programs and Features* in the Classic View). What if you don't see your driver listed? Right-click *My Computer* (*Computer* in Vista) and select *Manage• Device Manager*. Under 'Display adapters', right-click the graphics driver and select *Uninstall*.

Upgrade on the inside: If you're not quite ready for a new graphics board, you can squeeze more performance out of your system's current graphics hardware by overclocking it. Both of the leading graphics card makers—ATI and nVidia—include an overclocking utility with many of their cards. Using ATI's Overdrive utility doesn't invalidate the card's warranty, but using nVidia's Coolbits overclocking program does.

Overheating is probably this trick's biggest risk. While ATI's Overdrive utility monitors a graphics card's temperature and prevents overheating, most other overclocking utilities don't. Rigging an inexpensive thermal sensor like HighSpeed PC's $15 Digital Thermal Probe (find.pcworld.com/56489) to monitor your graphics card temperature could save you the cost of a replacement. ∎

Go to find.pcworld.com/31511 for past Hardware Tips columns. Send your tips and questions to kirk_steers@pcworld.com. We pay $50 for published items. Kirk Steers is a PC World contributing editor and the author of PC Upgrading and Troubleshooting Quick-Steps from McGraw Hill/Osborne Press.

DOWNLOAD A FREE NETWORK KNOW-IT-ALL

FOR THOSE OF us who'd prefer to think of "IT" as a third-person singular pronoun, the thought of setting up and maintaining a network's various hardware devices is about as appealing as oral surgery without the anesthesia. Finding an IP address, a gateway address, or other setting often requires a hunt through many Windows screens. Pure Networks' free Network Magic vastly simplifies network maintenance by consolidating data for all of a network's devices on one screen. Go to find. pcworld.com/56486 for the download (a $30 Premium version adds features like file sharing and remote access).

ANSWER LINE

LINCOLN SPECTOR

Should I Report Program Problems to Microsoft?

SOMETIMES AN ERROR message tells me that one of my programs has "encountered a problem," and asks to send Microsoft a report. What's the best procedure to follow?

Shane Bovee, Ionia, Michigan

THIS ERROR MESSAGE, added to the XP version of Windows, tells you the operating system halted a program that, had it been allowed to continue, might have crashed Windows. Microsoft insists it doesn't use the information to track you, and the report could well help prevent such program failures in the future.

Still, there is some security risk: Tests by the U.S. Department of Energy Computer Incident Advisory Capability found that the "memory dump" sent to Microsoft sometimes contained information from the user's document (browse to find.pcworld.com/56568 for more). In any event, the message probably doesn't leave you in a charitable mood, and clicking the Don't Send button will get you back to work a few seconds sooner. But you don't have to make that decision with

each crash. You can tell Windows ahead of time when it should, and should not, report such problems to Microsoft.

In XP, select *Start•Run*, type **sysdm.cpl**, and press **<Enter>**. Click the *Advanced* tab in the System Properties dialog box, and then choose the *Error Reporting* button that appears down on the lower right.

You can disable all error reporting, or have errors reported for the operating system only, for programs only, or for both. If you enable reporting, click the *Choose Programs* button to select the apps whose failures you wish to have reported. When you're done, click *OK* twice.

Vista's error message doesn't ask about sending information. Instead, the OS just sends it—unless you instruct it not to do so beforehand. Select *Start*, and in the Start Search box, type **problem reports and solutions**. Press **<Enter>**, and click *Change settings•Advanced settings*. In the 'Advanced settings for problem reporting' dialog box, you can turn report-

ing off, give other users permission to set this option for themselves, read Microsoft's privacy statement, and list programs whose errors should not be reported (see **FIGURE 1**). Click *OK* twice and close the Problem Reports and Solutions applet once you've made your changes.

FIGURE 1: DECIDE FOR YOURSELF WHICH Vista program crashes you encounter should be reported back to Microsoft.

TRIM OFFICE MENUS

HOW DO I remove an item from a Microsoft Word menu?

Chuck Bedford, Grandville, Michigan

REMOVING ITEMS YOU don't use makes the menus easier to navigate. The following trick will work in Word, Excel, and other programs in Microsoft Office versions 2000, 2002, and 2003:

In the program with the unwanted menu item, select *Tools•Customize*. With the Customize dialog box open, click the menu at the top of the program window that holds the item you want to remove, right-click the item, and select *Delete*; then click the dialog box's *Close* button.

Office 2007 doesn't have menus, so there's nothing to customize. Removing items from the ribbon isn't an option. However, you can customize the Quick Access Toolbar and keyboard shortcuts in Office 2007 applications: Click the Office icon in the top-left corner, choose the options button for the program at the bottom of the drop-down list, and select *Customize* in the left pane. ∎

Send questions to answer@pcworld.com. Answer Line pays $50 for published items. Visit find.pcworld.com/31577 for more Answer Line columns. Find Contributing Editor Lincoln Spector's humorous and other writings at www.thelinkinspector.com.

PERSONALIZE YOUR WINDOWS EXPLORER SHORTCUTS

THE SIMPLEST WAY to open Explorer to a specific file or folder is to right-click and drag its icon out of Explorer and onto the desktop (or the Start menu, quick-launch toolbar, or other location), release the button, and select *Create Shortcuts Here*. To open Explorer with the folder tree visible in the left pane, right-click the shortcut and choose

Properties. Position the cursor in the Shortcut tab's Target field, press **<Home>**, and type **explorer.exe /e,** (don't forget the space before the slash or the comma at the end). For example, to open Explorer to your D drive, type **explorer.exe /e, D:**. When you're done, press **<Enter>**. (Note that Vista displays folders by default, so no change for it is needed.)

Software That Just Won't Shut Up

THE MENTAL STATE that the psychologist Mihaly Csikszentmihalyi calls "flow" can be genuinely magical. There is nothing quite like the "deep enjoyment" of losing yourself in an experience, of becoming one with your work or hobby or sport or...excuse me, here's a message from my antispyware program, proud to grant my machine yet another clean bill of health.

What was I was saying? Oh, yeah, the state of flow is...wait a minute, some e-mail here. Only spam. And...hang on, the antivirus program is announcing that it has just updated itself. Glad to hear it.

Flow? All of a sudden every programmer alive seems to think it's fine and dandy to interrupt you with news of some trivial incident or meaningless nonevent. Pop-up ads are bad enough; now their equivalents have found their way into stuff that you've paid for to work behind the scenes, not dance on the table and proclaim its glory.

In the old days your antivirus program might have been stupid enough to ask you whether you wanted to eliminate a virus or merely quarantine it—as though you wanted to maintain your own personal collection. Now it brags that it has successfully maintained itself, repelled an attack, inspected and approved an e-mail attachment, or discovered that your antivirus subscription will expire in six months—or maybe that it's standing at the ready in the background. Excuse me, but all of that is business as usual. How about interrupting me only when there's a real problem?

Maybe it's just the influ-ence of the most flow-busting software ever made—instant messaging, which I have banished from my PC—but feckless interruption is now a way of life. Windows Vista's User Account Control safeguard nags you every time you do anything that might conceivably in some alternative universe harm your machine but in the real world is almost always benign. Memo to Windows and every other program on the planet: Shut up!

If a spyware scan reveals no problems, don't bother informing me, please. If something like Adobe Acrobat Reader can get updates on its own, have it do pre-cisely that without bothering me after the first time I click OK. Instead of waiting for my permission to perform some grand act that might slow my computer to a crawl, figure out a way to do it when the machine is idle, and don't force me to reboot—unless doing otherwise would be the first step toward nuclear winter. Simple rule: Don't pipe up unless it's really, really important.

If you're a firewall developer, use a silently updated internal database to figure out which programs should be permitted to phone home from my machines and which should not. And at this point, I'd rather not even hear that telltale ping that lets me know a new e-mail message has arrived. I'll check the inbox on my own schedule, thanks.

The marketing idea behind many such interruptions is no doubt the notion that reminding you of the importance of these ought-to-be-mostly-unseen helpers will keep you shelling out for new versions or subscriptions. But after the tenth or hundredth annoyance, what it really does is make you wonder whether there's a more low-key alternative that can do the same thing. Alas, now that programmers and marketers have become as bent on undeserved attention as ill-bred five-year-olds, the very concept of software quietude seems to be growing antiquated.

Flow? No mo'.... ∎

Trying to focus? With today's interrupting apps, good luck!

Contributing Editor Stephen Manes was cohost of PC World's *Digital Duo (www.pcworld.com/digitalduo) on public TV. Visit find.pcworld.com/31595 for more* Full Disclosure *columns.*

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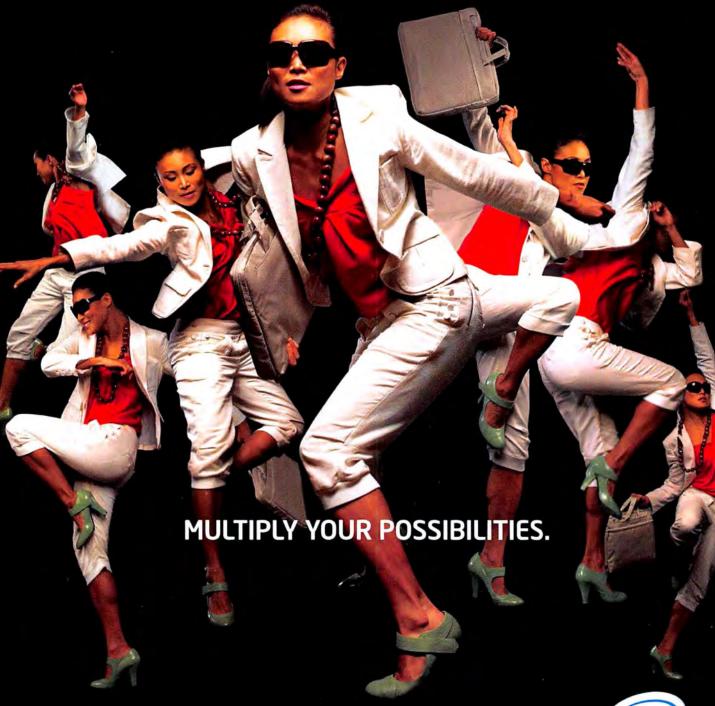**intel®**
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