

TECH SHOPPING: Which Specs Matter -- And Which Ones Don't **p.116**

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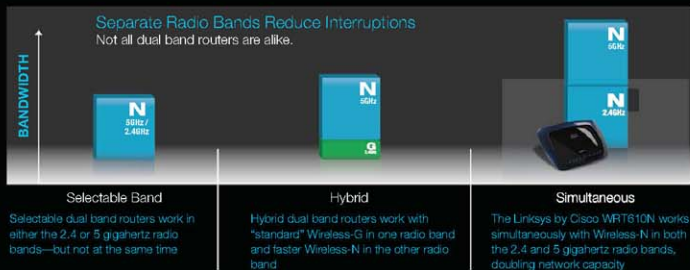
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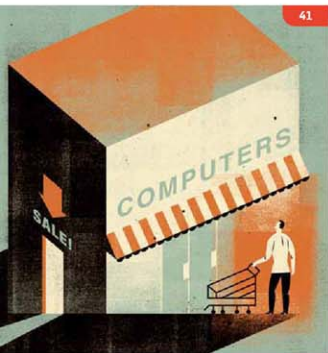
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The Specsplotiation Game and How to Beat It

BUYING A TECH product can be a daunting chore. It's hard enough keeping on top of the latest improvements, upgrades, and new features, even for the experts here at PC World.

Making the task all the more complicated is the confusing and misleading marketing hype that manufacturers and salespeople push at shoppers. I've fallen for it, just as most folks have.

This month, in "The Specs That Matter (and the Specs That Don't)," starting on page 116, Senior Writer Darren Gladstone takes a hard look at online and print ads to see what kinds of hoopery vendors and retailers use to hook you.

He also provides handy information on what features really count and what to look for before placing an order or buying a product at a store.

Be Wary of Vendor Claims

As the PC World Test Center's analysts discovered long ago, manufacturers and marketers don't have to lie to pull the wool over your eyes. All they have

Don't be fooled: The product features and specs that vendors and retailers push aren't necessarily the ones that really count.

to do is test products in absolutely ideal conditions or use proprietary tests that no one else can replicate.

Take, for example, vendor claims, usually found in their specs, that a wireless router is rated at 300 megabits per second. Such high-end performance may be possible in a lab with no obstructions, signal interference, or long distances between devices.

But the real-world results that PC World and other reputable testing organizations have achieved tell a very different story: The typical wireless router is lucky to get half that speed, and performance is often much less than that.

Another trick is to hype a spec that has little meaning in the real world. For example, one of the most widely touted HDTV specs is contrast ratio, a measurement of the difference between the brightest white and the darkest black that the set can produce. Theoretically,

the higher the contrast ratio, the more detailed and more realistic a high-def set's resulting image will be.

But contrast ratio has been turned into a marketing gimmick, with numbers of 15,000 to 1—or 50,000 to 1, or more—touted in ads. Here's what you should know: Contrast ratios are not measured consistently among vendors. More tellingly, vendors don't have to specify how they came up with their ultrahigh number.

That aside, a superhigh contrast ratio means very little for actual TV viewing. Studies have shown that unless you are watching your TV in a completely dark room, you won't be able to detect the difference between a set with a modest contrast ratio (of, say, 5000 to 1) and one with a stratospheric rating.

Keeping Them Honest

The late President Ronald Reagan famously said to "trust, but verify." That's pretty much our motto when it comes to testing and reviewing products. We've learned—sometimes the hard way—that taking a vendor's specs and performance claims at face value is a disservice to our readers.

That is why we check and confirm the important specifications of every product that passes through our Test Center, and why we rely on our own independent, real-world testing.

And while it sounds obvious, make certain you know what you want a product to do for you. Selecting something that is far more than a sure need, or is inadequate for the task, is a sure way to bring on buyer's remorse. ●

Editor Ramon G. McLeod oversees the reviews and downloads content of PCWorld.com.

A SITE TO BEHOLD

OVER THE PAST several months, PCWorld.com has undergone a major series of upgrades, some of them visible, some not.

The most prominent change has been to our Downloads section, which has a new look that we hope makes it even more usable—and, yes, fun to visit. In addition, we have significantly beefed up our library of downloads.

Under the hood, site performance has vastly improved thanks to a large-scale code rewrite. And much more is coming, including a redesign of our reviews pages that will provide more of the expert analysis, reader commentary, and vendor information that our visitors prize.



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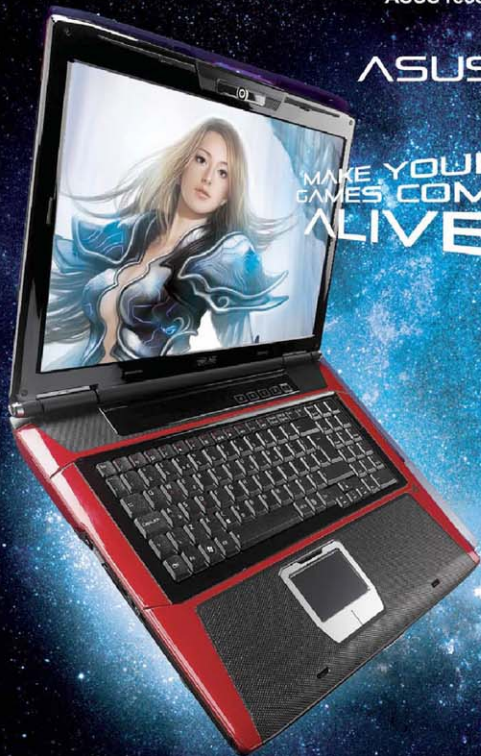
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Many people waited in line for an iPhone 3G, but not all of our readers are fans. 3G unreliability, the short battery life, and other issues are preventing some people from making the leap. Did you get an iPhone 3G? Tell us why (or why not) by going to find.pcworld.com/61410 and clicking 'Comment'.

iPhone 3G Issues

Considering the small evolutionary step that the iPhone 3G represents, Apple is taking a big risk in losing sales by not meeting demand [find.pcworld.com/61409]. The more I read about the 3G signal's unreliability, even in densely populated areas that AT&T has wired for 3G, the less I want the phone. Also, Apple's widget on the Web site started showing widespread availability the weekend of July 26; but when you visited an Apple Store (at least the one here in New York), they didn't have the phone in stock. This was not a stellar introduction of the product, and I am afraid Apple is becoming a pedestrian company like Microsoft!

Brucepet, from the PC World forums

The iPhone looks nice and all [find.pcworld.com/61392], but I'm still not ready to trade my BlackBerry 8320 Curve for it, not just yet. The modem feature is a must-have. Since the BlackBerry now has turn-by-turn navigation and functions as a high-speed modem as well, I just can't trade it in.

BlackFox4four, from the PC World forums

I still can't believe there's no cut-and-paste. It's a no-brainer, and a serious

omission since day one. Most of the other complaints, such as about video, voice recognition, and MMS [find.pcworld.com/61410], represent only a small portion of users, but a basic feature like this is hard to overlook.

Brau, from the PC World forums

I refuse to buy an iPhone until the battery life lasts longer than I will spend out of my dorm at college. It's absurd to have to plug in your phone in the middle of a class. Also, expandable memory would be a very nice addition, along with a video camera. Wasn't the iPhone supposed to be "the ultimate in innovation" or some such malarkey? Apple, don't start "innovating" till you have the basics down, okay?

TFawks, from the PC World forums

[The iPhone's appeal is all] about the user interface, not so much the specs [find.pcworld.com/61411]. It has, hands down, the best user interface and mobile browsing experience. I'm all about marrying productivity, creativity, and simplicity, but only Apple seems to know how to make that happen. Maybe that's why people aren't standing in long lines for any Treo.

Reelfan, from the PC World forums

Microsoft Bashing

I've been a longtime subscriber to *PC World* magazine, and through the years I've read many articles that were negative toward Microsoft and its products, some of which were certainly justifiable—but the August issue is over-the-top. Practically every page contains some negative reference to Microsoft and/or its products, and, frankly, I'm growing weary of it. Not all of Microsoft is bad! And by the same token, not all Apple products are easier and more wonderful, as is so often indicated within your magazine's articles.

I have been a Windows user since the first version, and I have thoroughly enjoyed using every one of the subsequent versions, including Vista. It has been as stable as XP, and also faster and more efficient. I'll continue enjoying it until the next version is released.

You guys need to lighten up a bit on the Microsoft bashing. It's starting to sound a little old. And don't forget: If it weren't for Microsoft and the promotion of personal computers, you wouldn't be publishing a magazine.

Don Fozler

San Juan Capistrano, California

Firefox 3 does everything it says it does. IE 8 worries me. Everything Microsoft releases has problems.
moorrbt1, from the PCW Forums

Computers Running 24/7

Your article about leaving a computer running 24/7 [[Fact Check](#), August] missed a very real cause of component failure: the accumulation of dirt and dust within the PC's cabinet.

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Dust accumulates anytime the equipment is turned on, but keeping a system powered up for shorter periods of time will result in less dust and dirt and longer component life.

Walter Tomasulo, Rockledge, Florida

A Xobni Problem

The very positive review of Xobni [Reviews & Rankings, August] neglects to mention that the creators of the program will make users unwitting, and perhaps unwanted, advertisers. As I watched the newly installed program gather information from Outlook, I was more than surprised to see that it was creating an e-mail message to everyone with whom I had communicated, informing them of their "ranking" in terms of how often I had sent them an e-mail, and implicitly inviting them to download the program. Your review should have warned about this. Preferring not to be placed in that role with the people I contact via e-mail, I promptly uninstalled the program.

Joseph Chrzanowski, Los Angeles

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

CORRECTIONS

IN SEPTEMBER'S "PINNACLE Studio 12 Adds Blu-ray, YouTube Output," we should have said that Studio Ultimate 12 retains the ability to burn HD DVD discs.

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.

New Version!

Are Your Employees Caught in the Web?

[Find out by monitoring all PC and Internet activity]

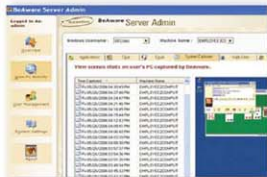


Reclaim Lost Productivity

Every day the average employer loses 81 minutes of productivity per employee to Web-based distractions. Most employees don't realize how quickly the stolen minutes add up. But research shows some 13% of workers habitually log two or more hours of internet-based off-task activity per day.



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Gas Crisis Fuels Dubious Online Offers

TOM SPRING

WANT TO CUT your fuel costs by 60 percent, use ordinary tap water as fuel, receive a free \$1000 gas card, or lock down the price of gas to a low \$2.49 a gallon? You can find these offers and more on the Web—but experts say that most of them are bogus, designed to collect personal information, to induce you to sign up for services that you may not want, or to sell you gizmos that won't save you a dime in gasoline costs.

With gas prices zig-zagging toward \$5 a gallon, many people understandably are looking for ways to cut their costs at the pump—and some truly useful sites can help you hunt down the lowest gas price in your neighborhood (see find.pcworld.com/61385). But the Web (not to mention your inbox) is also brimming with dubious offers and schemes.

The Better Business Bu-

skyrocketing gasoline prices have given rise to slick new online scams. Beware of Web sites promising cheap gas, free gas, or savings of 60 percent at the pump.



reau reports that, as gas prices have gone up, so have complaints about sites—some of them heavily promoted in search-engine

ads—that promise free gas but deliver only headaches and unwanted e-mail.

"It comes down to your mother's advice," says

American Automobile Association spokesperson John Paul. "If it sounds too good to be true, it probably is."

The most prevalent gas-savings pitch I've seen on the Web lately is for a kit that's supposed to show how to use water to supplement an automobile's use of gasoline in order to reduce fuel costs. A headline on a site called Half Water Half Gas, for example, reads: "Use water as fuel, cut your costs by as much as 60 percent and make the environment better and make your car run better at the same time."

Most of the water-as-fuel kits promoted online show you how to create a Mason jar-size gizmo that sits under your car's hood and, supposedly, extracts hydrogen from water. According to Half Water Half Gas, the hydrogen is then mixed with oxygen to create a fuel called HHO (or oxyhydrogen), which the device then pumps into your en-

engine's intake manifold to reduce (but not eliminate) its dependence on gas. Sites such as Run-YourCarWithWater.com are also pitching both \$50 manuals for HHO conversion and conversion kits that range in price from \$150 to \$1150.

Experts say that such kits for automobiles are hogwash. "All of these devices look like they could probably work for you, but let me tell you, they don't," says the AAA's Paul.

And *Popular Mechanics* editor Mike Allen, in a report called "The Truth About Water-Powered Cars: Mechanic's Diary" (find.pcworld.com/61386) described the water-powered car kits advertised on the Internet as "rubbish" and "outrageous." Only under tightly controlled settings, Allen wrote, might a hybrid HHO and gasoline car see modest increases in fuel efficiency.

In other words, claims by some sites that these kits will increase your engine's gas mileage by 10 to 80 percent are not realistic.

Free Gas Cards: Not Such a Deal

I found one typical free-gas offer by clicking a search-engine text ad whose pitch read, "Getting A \$1000 Gas Gift Card For Free Is Simple," for a site called ExxonMobilGiftCard.com. I did not pursue the offer, however, because my McAfee SiteAdvisor browser toolbar identified the hyperlink that was presented within the ad as "unsafe" and described the site it links to as a "high

ExxonMobil GiftCard.com

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Participation required. Click for details.

Enter Your Email:

Continue

Shipped Free by FedEx

EXXONMOBILEGIFTCARD.COM makes you click through a gauntlet of sales pitches—and to get a "free" gas card, you must accept at least two of them.

volume or spammy e-mailer."

But it turns out that the McAfee SiteAdvisor warning wasn't even directed toward ExxonMobilGiftCard.com: SiteAdvisor spokesperson Shane Keats explains that the McAfee warning actually applies to a site called PayDayASAP.com, to which the link sends you first (transparently) before redirecting you to ExxonMobilGiftCard.com. SiteAdvisor flags PayDayASAP.com because people who signed up for its promotions reported receiving nearly 150 unsolicited e-mail pitches within a week.

While stressing that the ExxonMobilGiftCard.com site (which does not appear to have any relationship to ExxonMobil) has not been subjected to a formal review by SiteAdvisor, Keats does warn that it "has all the hallmarks of a scam site."

Keats explains that most "free gas" sites—like free iPod sites—are really just come-ons designed to make money from visitors. ExxonMobilGiftCard.com, for example, pitches dozens of services, products, and free trials (including an "Ivory White Teeth Whitening free

trial kit" for which you must make a credit card payment of \$4.87 for delivery).

The site requires that you take what it calls a survey,

but which is essentially a series of sales pitches for weight-loss pills, auto loans, books, and the like. After you've declined all of them, you're informed that to get the gift card you must accept at least two of the offers.

Keats says that many of the "free gas card" sites SiteAdvisor has reviewed earn commissions on the offers—and that if you are unwise enough to divulge your e-mail address, or your landline or cell-phone number, you can expect a deluge of marketing e-mail and phone messages. ➤

PLUGGED IN ALAN STAFFORD



INTERNET RADIO DAYS NUMBERED:

Obscene royalties—far above what over-the-air and satellite stations pay—may soon drive stations into oblivion.



BAMBOOZLED:

SimpleTech is the latest to "green up" a product with bamboo; its ReDrive hard drive is clad in it. But what about the poor plants?



INTEL TO SHIP NEW CHIP:

The Core i7 is supposed to pump new power into desktops. We're psyched, too, because it ought to make Windows XP really fly.



GTA IV ON PC:

In November, the game comes out on PCs, so even people without consoles can play. Kids just don't steal cars like they used to.



ID THEFT ICEBERG:

Department of Justice indicts 11 people for ID theft. If they ever show up in the U.S., we'll confiscate their laptops.



IT'S PARTLY DELLY:

The Patent and Trademark Office reconsiders giving Dell rights to the term "cloud computing." Whew; I'd hate having a Dell over my head.



And after all that, you may never see the promised credit: Keats says that less than 5 percent of the people who sign up for every offer get the "free" gas card (or an iPod).

Lock In Gas Prices?

Another type of gas savings deal that has generated consumer complaints involves a plan that promises to lock in gasoline prices at an attractive fixed rate. The Southern Arizona Better Business Bureau, for example, says it has received a number of complaints about this type of offer on Web sites operated by Free Zone Media, based in Richmond, Virginia.

This company operates at least three identical-looking sites (RadioGasDeal.com, GasLockedIn.com, and GasPumpRebates.com) that promote an offer called America's Gasoline Relief Program, which, in effect, promises to lock in gasoline prices at \$2.49 a gallon.

Just as on ExxonMobil-GiftCard.com, you must sign up for commercial offers in order to get a gas card that will cover the difference between your actual cost of gas and \$2.49 a gallon. The big catch is that one gas card covers only a maximum of 15 gallons of gasoline purchased. You can find this out on the Web site if you read the terms of the program carefully.

In the Southern Arizona BBB complaints, consumers say that after filling out the surveys and joining various buyers'

clubs, they never received the gas card. Free Zone Media did not return e-mail inquiries requesting an interview, and no one answered the phone number given in the company's WHOIS listing.

MyGallons: Prepaid Cards for Gas

In early July the Florida BBB expressed concern over a similar offer from Miami-based MyGallons LLC for a prepaid gas credit card that guaranteed tomorrow's gas at today's prices. People paid membership fees of \$30 or \$40 to be eligible to buy the card, which MyGallons.com said they could use at participating stations to buy gas at the rate they paid online—

even if prices at the pump had subsequently gone up.

The company's offer drew national media attention, but after receiving several complaints, the Florida BBB determined that, contrary to its advertised claim, MyGallons had no deal in place with any vendor that would be able to process its gas purchase transactions.

A BBB spokesperson told *The Los Angeles Times* that the organization didn't believe MyGallons.com was simply a scam, but acknowledged that it did have "serious concerns" about the company.

Later, BBB representatives and MyGallons.com officials met, and the bureau's site says that MyGallons agreed

to change its advertised claims, to stop collecting fees from new members, and to refund the membership fees paid by 6000 people. For now, MyGallons.com continues to accept new sign-ups, but the company tells people that it is "in the process of transitioning to another payment network that can provide the proper level of service."

Fuel for Thought

Other sites promise fuel savings through the use of fuel additives (SimpleGasSolution.com) or by attaching magnets to your fuel line (MyEnergyCel.com). "If any of these really worked, car manufacturers would be the first in line buying this stuff," Paul says.

And unfortunately, wishful thinking doesn't mean that a solution to high gas prices exists; as Paul notes, "Everyone just assumes there has to be a way to save at the pump."

There is no magic way to cut gasoline expenses without reducing gas usage, and you should exercise caution and common sense when

you run into these too-good-to-be-true offers. Read sites' terms of service carefully, and run a Google search to see if any complaints have surfaced. A little sleuthing at the BBB's Web site (www.bbb.org) or at gripe sites such as Consumerist.com can also usually help you determine whether an enticing offer is legitimate or not—and ultimately save you a chunk of time and money.



WHEN YOU TRY to exit the Half Water Half Gas Web site, a window pops up with a request that you agree to an online chat (it's automated, though).



A USEFUL SITE: Using the GasBuddy.com option in Google Maps (look under the My Maps tab), you can track down the least-expensive gas in your area.



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Windows Vista® Business.



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Airports Adopt New Laptop Rules

TRAVELERS FORCED TO unpack their notebook computers at airport screening stations received some relief in August as the Transportation Security Administration began letting people with "checkpoint friendly" bags leave the hardware inside.

Such bags or cases must have a laptop-only section that completely unfolds to lie flat on the X-ray-screening conveyor belt, the TSA says. The bag cannot contain metal snaps, zippers, or buckles inside, underneath, or on top of that laptop section; nor can it sport pockets on the inside or outside of the laptop-only part of the case.

Some 60 bag manufacturers expressed interest when the guidelines were unveiled several months ago, and 40 tested prototypes at one of three airports the government agency designated.

Although the TSA says some current bags meet its criteria, particularly sleeve-like carrying cases that lack pockets or zippers, most will be new products.

Even if a bag meets the guidelines, however, nothing is guaranteed. "Given TSA's use of random screening protocols, TSA reserves the right to re-screen any bag or laptop," the agency says.

—Gregg Keizer



GADGET FREAK

DAN TYNAN



It's On: The Battle for the Digital Living Room

A QUIET REVOLUTION has begun in our living rooms. Microsoft and Sony plan to overthrow your A/V receiver, DVD player, and set-top box, and replace them with one of their game consoles. In the spring both companies unveiled movie download and streaming services that

Sony's PlayStation 3 and Microsoft's Xbox 360 both provide great game play with stunning graphics and the opportunity to mosh online with other gaming dweebs. But do these devices offer enough to nongamers to serve as the command center of our digital homes? I'm not convinced.

Microsoft wants to put an Xbox 360—and Sony wants to put a PlayStation 3—in every living room, and two gamers on every couch.



Cost, Content

You can do almost anything related to digital entertainment with a PS3, but you can't do all of it well. Attach a PS3 to your network, and it will play music, video, and photos stored on your PC. You can surf the Web, watch YouTube, and send Twitter updates from your couch. You can pop in a Blu-ray Disc or DVD movie. And now you can download more than 300 movies and TV shows to it via Sony's PlayStation Store.

But while Sony does its usual great job with the hardware, it does its usual lousy job on content and pricing. Want to watch *10,000 BC* in glorious 1080p HD? The flick will cost you \$6 to rent for 14 days. Once you start watching, it deletes itself in 24 hours. Even obscure titles like *Soul Plane* (starring Tom Arnold and Snoo Dogg) cost \$4.50 to rent in HD, \$3 in standard def, and \$10 to buy (as if). When I tried to play the film shortly after it started downloading, it didn't work on my 3-megabits-per-second Road Runner cable broadband connection. Web surfing is clumsy and slow in the PS3's proprietary

browser, and I couldn't log on to Twitter at all.

Yet the PS3 still runs rings around the Xbox 360. Though the 360 also works as a media extender (pulling in audio and video from a Media Center PC on the network), it couldn't find videos stored on my PC. It has no HD disc

player (Microsoft discontinued its external HD DVD option), no Web browser, no YouTube, no Twitter. Microsoft's movie and TV download library, however, is larger than Sony's. And this fall, Xbox 360 owners will be able to stream films from Netflix's Watch Instantly service. Instead of paying as you go, however, you have to buy "Microsoft points"—\$6.25 for 500. Renting one

720p HD version of *National Treasure 2*, for example, costs you 480 of those points.

Worse, using the Xbox 360 means navigating endless hierarchical menus and fighting off promotional offers. No, I don't want to spend \$4 to \$8 a month for a Gold Xbox Live membership, thank you very much.

The Unfashionable PC

Of course, at one time the computer was supposed to dominate the digital living room. "It's safe to say that's now out of fashion," says Ross Rubin, director of industry analysis for The NPD Group. PCs are too noisy, too hard to use, and not price-competitive with set-tops that offer many of the same features.

Personally, my networked TiVo does most of what I need (though it could really use a Web browser). My preference, however, may just be a generational thing. My 12-year-old son would kill for an Xbox 360 in the living room. He'll have to stage his own coup before that happens.



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Internet Explorer 8 Beta 2: Can It Outfox Firefox?

MICROSOFT'S updated browser, Internet Explorer 8, promises an assortment of new features, with the goals of making Web browsing with IE safer, easier, and more compatible with Net standards. We looked at Beta 2. On the surface, IE 8 seems to be a lot like IE 7, but Microsoft has made a good number of changes. However, you may have seen some of the new features in its no-longer-upstart competitor, Mozilla Firefox 3.

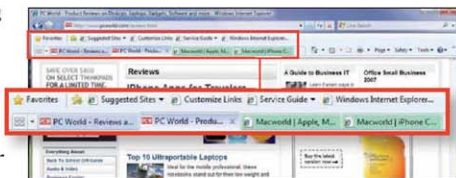
Tabbed Browsing

If you accidentally close a browser window in IE 8, you can opt to restore it when you reopen the program (just as you can in Firefox). But IE 8 will group related tabs together using color coding. If you open a link from pworld.com in a new tab, for example, it will open adjacent to the original tab, and the tabs themselves will have a matching color. You can move tabs from one group to another, but if you have three unrelated pages open, you cannot create a group out of them.

Perhaps the most novel addition in IE 8 is what Microsoft refers to as tab isolation. The feature is designed to prevent a buggy Web site from causing the entire program to crash. Instead, only the tab displaying the problematic page will close, allowing you to continue browsing.

Of course, IE 8 Beta 2

New features give IE 8 a better look, better security, and better conformance to Web standards, but the revised browser is still playing catch-up with Firefox.



IF YOU RIGHT-CLICK a link and open it in a new tab, Internet Explorer 8 will position it next to the parent window and give both tabs a matching color.

retains some of the features introduced in the first beta, including WebSlices and accelerators; see "Updated Web Browsers: Which One Works Best?" at find.pcworld.com/61433 for more details.

Improved Security

If you enable IE 8's InPrivate feature, the browser will not save any sensitive data—passwords, log-in info, history, and so forth. It would be as if your browsing session had never happened. This feature is very similar to Private Browsing in Apple's Safari browser, except that an icon in IE's address bar makes InPrivate's active status more obvious.

The browser's phishing filter—called SmartScreen—improves upon its predecessor's filter with such features as more thorough scrutiny of a Web page's address (to protect you from sites named something like paypal.iamascammer.com) and a full-window warning when you stumble upon a suspected phishing site. SmartScreen relies largely on a database of known phishing sites, so a new, unknown phishing site may be able to slip through the cracks.

IE 8 displays sites' domains in a darker text color, so you can more easily see whether you're actually visiting an ebay.com page, say, or in

reality a page on some site you've never heard of. Microsoft could still put a little more emphasis on the domain name (using a different color background, for example), but the highlighting is a welcome addition.

Web Compatibility

Creating a site that looks identical in Internet Explorer, Firefox, and Safari can be a challenge. IE 8 Beta 2 offers better support for W3 Web standards—a set of guidelines developed to ensure that a Web page appears the same in all browsers. The downside is that IE 8 will break some pages designed for earlier Internet Explorer versions.

To counteract this, Microsoft has added a compatibility mode: Click a button in the toolbar, and IE 8 will display a page the same way that IE 7 does. In my testing, I found that most pages worked fine with the standard (new) mode, and that most errors were minor cosmetic ones. Unfortunately, the Compatibility Mode toggle button may not be obvious to most users, because

it's pretty small; a text label would have helped.

While it likely won't convince many Firefox users to jump ship, Internet Explorer 8 Beta 2 may be worth considering for people who have not yet solidified their browser loyalties. (Keep an eye out for our report on the final release of IE 8.)

—Nick Mediati



CLICK A LINK to a Web site that has been reported as suspected of phishing, and Internet Explorer 8 will alert you with a full-window warning.



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Intel Will Release New Core Chips in Late 2008

HIGH-END LAPTOPS and desktops could become faster and more power-efficient when Intel releases CPUs that are built around its new Nehalem microarchitecture late this year.

Initially the company will target the chips, to be called Core i7, at power desktops and workstations, but scaled-down versions will eventually appear for consumer desktops and laptops; they will be upgrades from Intel's current Core 2 chips. Nehalem is supposed to eliminate bottlenecks found in Intel's earlier Core micro-architecture, thereby im-

proving system speed and per-watt performance.

"Nehalem is going to be about more performance, and people always want more performance," Nathan Brookwood, principal analyst at Insight 64, notes.

Down the line, Intel will integrate graphics capabilities with the CPU. That strategy should bring more power efficiency, particularly to laptops, since as a result an integrated graphics chip set will no longer be necessary. However, gamers will

still need a discrete graphics card to achieve the best graphics performance.

"If you look at what Intel is doing towards desktops and laptops chips by integrating graphics, that could very well reduce power consumption," Brookwood says.

Nehalem chips will still carry the Core brand name, but Intel will omit the numeric reference to 2 for its mainstream desktops and laptops. "The Core i7 brand is the first of several new identifiers," says Intel

spokesperson George Alfs.

Packing between two and eight processor cores, the first Nehalem chips will include QuickPath Interconnect (QPI) technology, which integrates a memory controller and provides a faster pipeline for the CPU to communicate with system components such as the graphics card and other chips. Each core will be able to execute two software threads at a time—so a desktop with four processor cores, for example, could run eight threads simultaneously for quicker application performance.

—Agam Shah



BETA WATCH EDWARD N. ALBROW

Yahoo! Zimbra Desktop: Offline Web E-Mail

Web-based e-mail accounts are incredibly useful and convenient—unless you're offline. The first Web e-mail provider to crack the problem is Yahoo with its Zimbra Desktop. The free Zimbra software allows you to connect to an AOL, Gmail, or Yahoo account or to any server through POP or IMAP. When you're online, you have the advantages of an online account—no waiting for the client to send a message to the server or to pull new missives off the server. In the background, Zimbra is caching your e-mail for you to look at when you're offline. Zimbra, which Yahoo purchased last year, was one of the pioneers of Ajax-based Web apps, but its interface is starting to look a little outdated. www.zimbra.com

Kno! : Google's Wikipedia


Most of the information in Wikipedia is completely accurate. Some of it isn't. The problem is knowing which is which—and part of the trouble derives from Wikipedia's mostly anonymous, wisdom-of-crowds approach. If you feel more comfortable getting information from a single, identified source, then Kno!, Google's foray into building an online encyclopedia, may (someday) be for you. On Kno!, it's obvious who wrote an article—in many cases the author's picture is beside it. And the writer can include biographical information to help you evaluate whether the person knows what he or she is talking about. Kno! is promising but young, and its information so far is pretty thin. kno!.google.com

The screenshot shows the Greenzer website interface. At the top, there's a navigation bar with links for Home, Shopping, Lifestyle, Blog, and About Us. Below this, a featured product is displayed: a Samsung 81 Series LNT4601F 46" LCD TV. The product details include its price (\$4,292.99), manufacturer (Samsung), and a 'What makes it greener?' section highlighting its LED lighting technology. A 'Greenzer Score' of 6.4 is also visible. The website has a clean, modern design with a focus on eco-friendly products.

GREENZER TELLS YOU what makes a product ecologically friendly.


Greenzer: Easy Eco-Shopping

You probably know that what you buy can affect the environment. But chances are, you don't have the time or the expertise to evaluate whether one HDTV will do more damage to Mother Earth than another. Greenzer.com is a shopping site dedicated to answering such questions. For many products it lists, Greenzer tells you what makes the product green. For some items, particularly tech devices, it also includes a 1-to-10 rating of how eco-friendly the gadget is. And green face-offs provide in-depth comparisons of different kinds of plant fertilizer, for instance. greenzer.com



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Toyota and Sony Develop a Personal Transporter

TOYOTA IS DEVELOPING a Segway-like personal transportation device called the Winglet, partly based on robotics technology from Sony.

The Winglet looks like a slimmed-down version of the Segway. It can carry an average-size person a little over 6 miles at a speed of around 3.7 mph. Toyota hopes to see commercialization of it in the early 2010s.

The smallest model weighs about 22 pounds and has a range of just over 3 miles. The medium and large versions both weigh about 26 pounds and have double the range. All have a cruising speed of 3.7 mph—a brisk walking pace. In comparison, the Segway i2 weighs 106 pounds, can travel up to 24 miles, and has a top speed of 12 mph.

—Martyn Williams



TO SEE A video of the Winglet, visit find.pcworld.com/61384.

GEEKTECH TOM MAINELLI



Network-Attached Storage on the Cheap

I'VE PREVIOUSLY DISCUSSED using Microsoft's \$180 Windows Home Server to turn an old PC into a media-streaming, backup-friendly server (see find.pcworld.com/61365). "Great idea," wrote many a reader, "but too pricey." For those penny-pinchers, I suggest FreeNAS.

Based on the FreeBSD operating system (a Unix derivative), FreeNAS is a server operating system that offers lots of features, a very small footprint, and a can't-beat-it price (it's free). Developed by an open-source community, it is constantly evolving (with even nightly builds).

FreeNAS is more complicated to install and use than Microsoft's more feature-rich product, but people willing to navigate the sometimes confusing installation routine are rewarded with a robust network-attached storage device.

Choose Your Hardware

The hardware requirements for FreeNAS are pretty minimal: a motherboard with an x86 processor, 128MB of RAM, 32MB of free drive space (on a bootable drive, a CompactFlash card, or a USB key), a network card, and a BIOS that supports a bootable CD-ROM. I installed the OS on the tiny Via Artigo PC that I wrote about earlier this year (a small, impressively power-efficient little PC; see find.pcworld.com/61366). It's an ideal option, as you should consider how many watts your old PC will draw in 24/7 operation before putting it into service as a NAS device. During FreeNAS installation, you'll also need a monitor, a keyboard, and a CD-ROM drive, but afterward you won't need them for your NAS box.

To begin the process, I downloaded the FreeNAS ISO disc image from freenas.org (version 0.686.3, revision 3011, was the current, most stable one available at the time of this writing). I also downloaded a PDF of the installation guide, which is a must for navigating the somewhat unintuitive process.

I burned the ISO image to a CD, booted my intended NAS box from it, and began the speedy process of installation. I selected the option to create two partitions on my hard drive, one for FreeNAS and one for data. Then I worked my way through a series of tasks that included configuring my network interface and setting

FreeNAS: Open-source OS turns an old PC into a great network-attached storage device.

the box's IP address. Once those steps were done, I could access the FreeNAS box via a Web browser from another PC on my network.

Doing just that, I instructed FreeNAS to mount the second partition on my drive, and then initiated CIFS (Common Internet File System), the protocol that lets Windows PCs connect to the NAS. (For a Linux PC, you would

webGUI Configuration	
FreeNAS	
The Free NAS server	
System information	
Name	freenas.local
Version	0.686.3 (revision 3011) built on Thu Mar 13 19:20:49 CET 2008
OS Version	FreeBSD 6.2-RELEASE-p11 (revision 199)
Platform	i386-embedded on VIA C7 Esther+RNG+ running at 999 Mhz
Date	Tue Jul 29 13:10:32 UTC 2008
Uptime	1 day, 05:35
Last config change	Sun Jul 27 21:45:25 UTC 2008
Memory usage	<div><div></div></div> 19% of 894MB

BROWSER-BASED INTERFACE: Control your server from any PC connected to the network.

use the NFS—Network File System—protocol). FreeNAS also supports various flavors of RAID, but the development team suggests configuring each disk individually—to ensure they work well—before establishing a RAID setup.

You could stop here and have a very useful device, but FreeNAS has numerous other features worth exploring, including RSYNCD, a network utility for incremental backups over the network; Unison, a file-syncing tool; and FTP, for easy file transfers. Plus, I like the free-ware version of SyncBack from 2BrightSparks, a file-backup and synchronization tool—and it works like a charm with my FreeNAS box.

I'm impressed with FreeNAS. Windows Home Server has more media-friendly capabilities like Xbox 360 connectivity, but if you are looking to set up a basic NAS box using your existing hardware, FreeNAS is well worth a spin.

PCWorld
THE **100**
BEST
PRODUCTS
of **2008**

Area-51® m15x
July 2008



AREA-51® m15x

Alienware® Named Among Best Of 2008

The world's fastest 15.4-inch notebook, the Area-51® m15x earns a spot on PC World's "The 100 Best Products of 2008." Achieving benchmarks unimaginable in a 15.4-inch form factor, the Area-51® m15x delivers a gaming experience PC World describes as "scary powerful."

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Web 2.0 Politics: Tagged, Tweeted, and Widgeted

EVERY SERIOUS POLITICAL candidate has a Web site, a blog, and videos on YouTube. But this election year, smart candidates and a throng of gee-whiz Web 2.0 sites are taking tech savvy to an entirely new level.

—Alan Stafford



REPORT YOUR POSTS - CLICK HERE

Tell us about your efforts and receive points for your success!

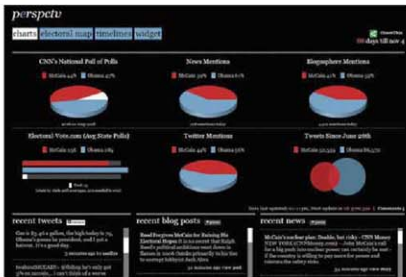
JOHN MCCAIN ISN'T running his entire campaign from the back of a train. At JohnMcCain.com, you can create your own social network in the McCain Space. When you make a comment on a blog or news site, you earn points redeemable for prizes like autographed books or a ride on the Straight Talk Express (his campaign bus).



BARACK OBAMA'S CAMPAIGN Web site offers downloadable video widgets and cellular phone ring tones; one ring tone raps, "Go, go, gobama!" BarackObama.com shows live streaming-video town hall meetings—and you can get alerts for them via Twitter.com; at last count, more than 62,000 people were following Obama's tweets.



LIKE MANY CANDIDATES, Sean Tevis, who's running for state representative in Kansas (find.pcworld.com/61389), accepts donations through PayPal.com. Tevis wasn't bringing in much dough until he created an online comic—styled after the geeky xkcd.com Web comic—announcing his run for office and asking visitors for \$8.34. The comic generated word of mouth on blogs—and lots of dollars from supporters, many of whom live far outside his home state.



PERSPECTV.COM is a dashboard that snips mainstream and user-generated political fodder from other sites. Charts show the latest polls and track the number of news, blog, and Twitter mentions for each candidate. (Obama far outtweets McCain.) A tweet roll reports updates every few seconds; a blog roll, every few minutes.



PREDICTIFY.COM lets you make predictions about current events, ask others for their predictions, and see charts tracking site visitor's views. A post on Paris Hilton's video response to John McCain's ad comparing Obama to her asked whether her energy plan would be adopted (my answer of "wholly adopted" was in the minority).

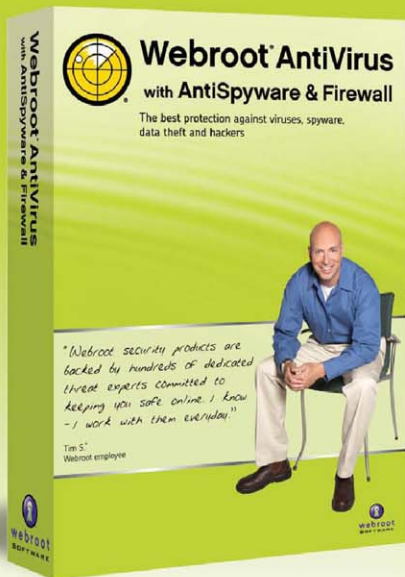


AT ACTBLUE.COM, you can set up your own fundraising page (but only for a Democrat). Enter your campaign message and a fundraising goal, and create a widget for use on your Web site.

SlateCard.com helps you help the Republicans; it has fewer options, but you can add more than one candidate to your widget.



November 2, 2006
Spy Sweeper 5.2 with AntiVirus



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The Best Security
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iPhone 3G Data Service Speeds Vary Wildly

APPLE AND AT&T promote the new iPhone 3G as being “twice as fast” as its predecessor. But how well are the service networks doing at delivering true 3G data transmission speeds? Not well enough. Most users seem not to be getting the near Wi-Fi-like performance that the 3G specification promises.

In informal testing, I obtained mixed results. My iPhone 3G had some difficulty living up to the promised speed boost, which AT&T says should “typically” range from 600 kilobits to 1.4 megabits per second on its 3G network. Alternatively, you can use AT&T’s EDGE service with any iPhone. That network delivers average data speeds of between 75 kbps and 135 kbps, with “bursts of speed reaching 200 kbps.” (By comparison, Wi-Fi, also usable with iPhones, can deliver speeds in excess of 1.5 mbps.) The iPhone 3G clearly indicates which network you’re on.

Many Complaints

Based on an outpouring of complaints on blogs, forums, and message boards across the Web—and based on my own experiences—a broad range of speeds exists, and few users report experiencing near-Wi-Fi performance. How broad a speed range you get depends on what part of the country you’re in. (And remember, AT&T charges \$10 a month more for the iPhone 3G’s data plan than it did for the original 2G model’s plan.)

Users remain enthralled

How often are iPhone users getting true 3G for their data transmission speeds? Our informal tests indicate that it doesn’t happen regularly.

with the iPhone itself—but service woes are tarnishing the experience. In a comment left at the tech news site GigaOM, for example, user Len Fischer posted, “Overall, I love the device, but the 3G service could be better. I get the sense that

purported 1.4 mbps that 3G can deliver would indeed approach the Wi-Fi-like speeds you can achieve on the iPhone, as Steve Jobs promised when he introduced the device in June. The iPhone’s Wi-Fi performance can actually exceed



AT&T is still tuning the 3G network, but they shouldn’t be making us pay considerably more (on a percentage basis) for service that isn’t much of an improvement or which remains inconsistent.”

Informal Tests

Inconsistent is the key word here. The data speeds I saw using my iPhone 3G in tests conducted in Chicago, Dallas, New York, Pittsburgh, and San Francisco fell far short of AT&T’s claims. I have yet to crack 600 kbps using my iPhone; more typically, I average 300 kbps. The

1.4 mbps; my iPhone turned in a transfer rate of over 1.6 mbps at an airport lounge’s T-Mobile HotSpot.

In a stretch of Long Island that was clearly denoted as 3G-capable on AT&T’s coverage maps, I averaged around 200 kbps—about on a par with what I achieved using EDGE in that same area. Not once did the phone attain 400 kbps. (In performing all of my informal tests, I used networktest.com to gauge bandwidth performance.)

The company later said that its network technicians had made a few tweaks to the

network that should have improved performance there.

In San Francisco, my average data speed is about 325 kbps on my iPhone 3G—still a far cry from AT&T’s purported “typical” 3G speeds. The good news? This performance was more than double that of EDGE performance in the same area.

My experience in San Francisco is not unlike that of people in other parts of the country. “Here in NYC I’ve found that 3G speed is all over the place,” a commenter notes on Macworld.com. And Blogger Om Malik of GigaOM finds that “the speeds are marginally better than the old EDGE network.”

Network Issues

Though speeds may vary, it’s reasonable to expect your iPhone 3G’s data performance to be better than its EDGE performance. In some regions, 3G data transfers with my iPhone were two to three times as fast as using AT&T’s EDGE network.

How much of the performance inconsistency is related to AT&T’s nascent network (the company says it offers 3G access in 305 metro areas so far) and how much can be attributed to the iPhone itself remains unclear.

New reports—not confirmed by Apple or AT&T at press time—point the finger at an issue with the Infineon 3G chip set in the iPhone. Apple has tweaked the phone’s software since it went on sale, and it will do so again when a fix is ready.

—Melissa J. Perenson

acer

Acer recommends Windows Vista® Ultimate.



September/October 2008

Ferrari 1100 Unique Innovation



Ferrari 1100-5457

\$1,999

(LX.FR90U.071)

- AMD Turion™ 64 X2 Dual-Core Mobile Technology TL-66
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- ATI Radeon™ Xpress 1270 graphics
- Integrated Acer OrbiCam camera
- Dolby Home Theater®
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- Fingerprint reader
- One-year limited warranty²

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Acer® Aspire® 5520

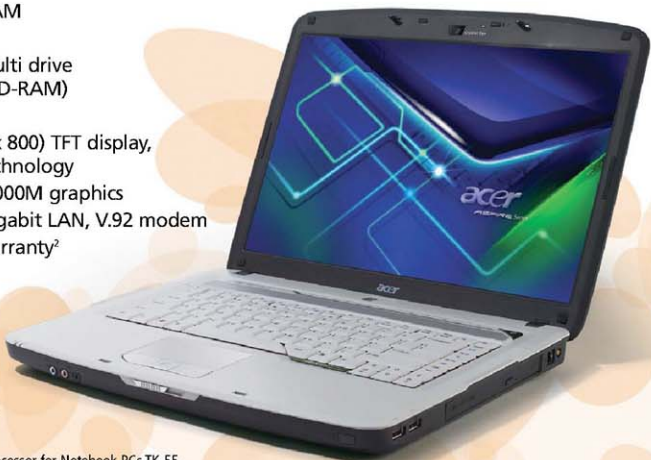
- AMD Athlon™ 64 X2 dual-core processor for notebook PCs
- Genuine Windows Vista® Home Premium
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- Integrated Super-Multi drive (DVD+R, DVD-R, DVD-RAM)
- 5-in-1 card reader
- 15.4" WXGA (1280 x 800) TFT display, Acer CrystalBrite Technology
- NVIDIA® GeForce® 7000M graphics
- 802.11b/g WLAN, gigabit LAN, V.92 modem
- One-year limited warranty²



Acer Aspire 5520-5908

\$539

AMD Athlon™ X2 Dual-Core Processor for Notebook PCs TK-55
Genuine Windows Vista® Home Premium
(LX.AJ70X.027)



Acer X263Wb

- 25.5" wide-screen TFT LCD
- 1920 x 1200 maximum resolution
- 3000:1 dynamic contrast ratio
- 170° horizontal viewing angle
- 160° vertical viewing angle
- VGA, DMI (HDCP) signal connectors
- 350 cd/m² brightness
- 5ms gray-to-gray response time
- Internal power adapter
- Three-year limited warranty²

\$499

(ET.GX3WP001)



Acer B243W bdr

- 24" wide-screen TFT LCD
- 1920 x 1200 maximum resolution
- 3000:1 dynamic contrast ratio
- 160° horizontal viewing angle
- 160° vertical viewing angle
- VGA, DVI (HDCP) signal connectors
- 400 cd/m² brightness
- 5ms response time
- Internal power adapter
- Tilt, swivel, pivot and height adjustments
- Detachable foot stand
- Three-year limited warranty²

\$399

(ET.FB3WP001)



Acer B223W B bmdr

- 22" wide-screen TFT LCD
- 1680 x 1050 maximum resolution
- 10000:1 dynamic contrast ratio
- 170° horizontal viewing angle
- 160° vertical viewing angle
- VGA, DVI (HDCP), USB signal connectors
- 300 cd/m² brightness
- 5ms response time
- Internal power adapter
- Tilt, swivel, pivot and height adjustments
- Detachable foot stand
- Three-year limited warranty²

\$299

(ET.EB3WP003)



Acer® Aspire® 7520

- AMD Turion™ 64 X2 Dual-Core Mobile Technology
- Genuine Windows Vista® Home Premium
- 2GB DDR2 667 SDRAM
- 250GB¹ hard drive
- Integrated Super-Multi drive (DVD+R, DVD-R, DVD-RAM)
- 5-in-1 card reader
- 17.0" WXGA+ (1440 x 900) TFT display, Acer CrystalBrite Technology
- NVIDIA® GeForce® 8400M graphics
- 802.11b/g WLAN, Bluetooth®, gigabit LAN, V.92 modem, webcam
- One-year limited warranty²



Acer Aspire 7520-5907
\$939

AMD Turion™ 64 X2 Dual-Core Mobile Technology TL-60
Genuine Windows Vista® Home Premium
(LX.AM40X.151)



Acer QuickCharge

Found on select models, Acer QuickCharge technology enables the notebook's battery to be 80 percent fully charged in just one hour.



Acer DASP

Disk Anti-Shock Protection is a technology that safeguards the hard disk against knocks and provides an unmatched level of protection.



Acer CrystalEye

Enjoy all the potential of video conferencing with the integrated Acer CrystalEye, simple to use and compatible with internet-based video and voice communication services.



Acer Bio-Protection

Gain an extra layer of security while eliminating the need to remember passwords and PINs with the Acer Bio-Protection fingerprint reader.

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Retailer or reseller prices may vary.

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Acer® LCDs



Acer B223W bdmr

- 22" wide-screen TFT LCD
- 1680 x 1050 maximum resolution
- 2500:1 dynamic contrast ratio
- 170° horizontal viewing angle
- 160° vertical viewing angle
- Two 1.0W integrated speakers
- VGA, DVI (HDCP) signal connectors
- 300 cd/m² brightness
- 5ms response time
- Internal power adapter
- Tilt, swivel, pivot and height adjustments
- Detachable foot stand
- Three-year limited warranty¹

\$269

(ET.EB3WP.002)



Acer V223W bd

- 22" wide-screen TFT LCD
- 1680 x 1050 maximum resolution
- 2500:1 dynamic contrast ratio
- 170° horizontal viewing angle
- 160° vertical viewing angle
- VGA, DVI (HDCP) signal connectors
- 300 cd/m² brightness
- 5ms response time
- Internal power adapter
- Three-year limited warranty¹

\$229

(ET.EV3WP.001)



Acer B203W bdmr

- 20" wide-screen TFT LCD
- 1680 x 1050 maximum resolution
- 2500:1 dynamic contrast ratio
- 160° horizontal viewing angle
- 160° vertical viewing angle
- Two 1.0W integrated speakers
- VGA, DVI (HDCP) signal connectors
- 300 cd/m² brightness
- 5ms response time
- Internal power adapter
- Tilt, swivel, pivot and height adjustments
- Detachable foot stand
- Three-year limited warranty¹

\$249

(ET.DB3WP.002)



Acer B193 bdmh

- 19" TFT LCD
- 1280 x 1024 maximum resolution
- 2000:1 dynamic contrast ratio
- 160° horizontal viewing angle
- 160° vertical viewing angle
- Two 1.0W integrated speakers
- VGA, DVI (HDCP) signal connectors
- 300 cd/m² brightness
- 5ms response time
- Internal power adapter
- Tilt, swivel and height adjustments
- Three-year limited warranty¹

\$249

(ET.CB3RP.002)



Acer B193W bdmh

- 19" wide-screen TFT LCD
- 1440 x 900 maximum resolution
- 2000:1 dynamic contrast ratio
- 160° horizontal viewing angle
- 160° vertical viewing angle
- Two 1.0W integrated speakers
- VGA, DVI (HDCP) signal connectors
- 300 cd/m² brightness
- 5ms response time
- Internal power adapter
- Tilt, swivel and height adjustments
- Three-year limited warranty¹

\$229

(ET.CB3WP.002)



Acer V193 b

- 19" TFT LCD
- 1280 x 1024 maximum resolution
- 2000:1 dynamic contrast ratio
- 160° horizontal viewing angle
- 160° vertical viewing angle
- VGA signal connector
- 300 cd/m² brightness
- 5ms response time
- Internal power adapter
- Three-year limited warranty¹

\$229

(ET.CV3RP.001)



Acer® Aspire® 4530

- AMD Athlon™ X2 Dual-Core Processor for Notebook PCs
- Genuine Windows Vista® Home Premium
- Microsoft® Office Home & Student 2007 (60-day trial)
- 2GB DDR2 667 SDRAM
- 120GB¹ hard drive
- Integrated Super-Multi drive (DVD+R, DVD-R, DVD-RAM)
- 5-in-1 card reader
- 14.1" WXGA (1280 x 800) TFT display, Acer CrystalBrite Technology
- NVIDIA® GeForce® 9100M G graphics
- 802.11b/g WLAN, gigabit LAN, V.92 modem, webcam
- One-year limited warranty²



Acer Aspire 4530-5267

\$579

AMD Athlon™ X2 Dual-Core Processor for Notebook PCs QL-60
Genuine Windows Vista® Home Premium
(LX.ARE0X.048)



Acer SignalUp

This technology strategically positions two PIFA antennas on the notebook's top panel to generate an omni-directional signal sphere for superior wireless reception.



Acer GridVista

Easy-to-use software designed to automatically split the screen in up to four separate windows and make the most of available screen space.



Acer CrystalBrite

A technology that delivers enhanced video performance for brilliant images, making it ideal for sophisticated applications such as HDTV and digital games.

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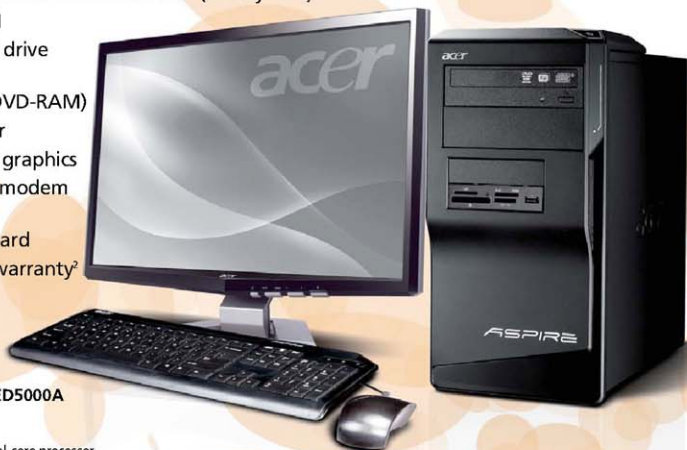
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Acer® Aspire® M1201

- AMD Athlon™ X2 dual-core processor
- Genuine Windows Vista® Home Premium
- Microsoft® Works 8.5 (full version)
- Microsoft® Office Home & Student 2007 (60-day trial)
- 2GB DDR2 SDRAM
- 320GB¹ SATA hard drive
- Super-Multi drive (DVD+R, DVD-R, DVD-RAM)
- 12-in-1 card reader
- ATI Radeon™ 2100 graphics
- Gigabit LAN, V.92 modem
- USB mouse and multimedia keyboard
- One-year limited warranty²

Display sold separately.



Acer Aspire M1201-ED5000A

\$399

AMD Athlon™ X2 5000+ dual-core processor
Genuine Windows Vista® Home Premium
(PT.SAY0X.004)

 *empowering technology*



Acer V193W b

- 19" wide-screen TFT LCD
- 1440 x 900 maximum resolution
- 2000:1 dynamic contrast ratio
- 160° horizontal viewing angle
- 160° vertical viewing angle
- VGA signal connector
- 300 cd/m² brightness
- 5ms response time
- Internal power adapter
- Three-year limited warranty³

\$189

(ET.CV3WP.002)

Acer V173 b

- 17" TFT LCD
- 1280 x 1024 maximum resolution
- 2000:1 dynamic contrast ratio
- 160° horizontal viewing angle
- 160° vertical viewing angle
- VGA signal connector
- 300 cd/m² brightness
- 5ms response time
- Internal power adapter
- Three-year limited warranty³

\$159

(ET.BV3RP.001)





Acer® Aspire® M3201

Display sold separately.



- AMD Phenom™ X3 triple-core processor
- Genuine Windows Vista® Home Premium
- Microsoft® Works 8.5 (full version)
- Microsoft® Office Home & Student 2007 (60-day trial)
- 4GB DDR2 SDRAM
- 500GB¹ SATA hard drive
- Super-Multi drive (DVD+R, DVD-R, DVD-RAM)
- Multi-in-one card reader
- ATI Radeon™ 3200 graphics
- Gigabit LAN, V.92 modem
- USB mouse and multimedia keyboard
- One-year limited warranty²

Acer Empowering Technology



Acer eLock Management

Acer eLock Management locks and unlocks storage media with password protection for additional security.



Acer ePerformance Management

Acer ePerformance Management optimizes performance to make the most of your computer's power.



Acer eRecovery Management

Acer eRecovery Management is an easy-to-use utility to create backups or restore from your archives.



Acer eSettings Management

Acer eSettings Management provides easy access to boot options, security or general system information.



Acer eDataSecurity Management

Conveniently integrated into the Windows® environment, Acer eDataSecurity Management provides one-click encryption and decryption of your files.

Acer Aspire M3201-EF8650A

\$599

AMD Phenom™ X3 triple-core processor 8650
Genuine Windows Vista® Home Premium
(PT.SAX0X.008)

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Acer recommends Windows Vista® Business.



Acer® TravelMate® 5520



- AMD Turion™ 64 X2 Dual-Core Mobile Technology
- Genuine Windows Vista® Business
- 1GB DDR2 667 SDRAM
- 120GB¹ hard drive
- Integrated Super-Multi drive (DVD+R, DVD-R, DVD-RAM)
- 5-in-1 card reader
- 15.4" WXGA (1280 x 800) TFT display
- ATI Radeon™ Xpress 1250 graphics
- 802.11b/g WLAN, gigabit LAN, V.92 modem
- Fingerprint reader
- One-year limited warranty²



Acer TravelMate 5520-5929

\$699

AMD Turion™ 64 X2 Dual-Core Mobile Technology TL-60
Genuine Windows Vista® Business
CD with Genuine Windows® XP Professional³
Microsoft® Office Professional 2007 (60-day trial)⁴
(LX.TKU0Z.005)

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Protect Your Investment with an Acer Notebook Service Upgrade

Quality is built into every notebook PC Acer makes, and each comes with a one-year or three-year standard limited warranty.⁵ It includes hardware technical support via toll-free phone plus a concurrent International Traveler's Warranty for travel outside the U.S. and Canada. For extra protection – and peace of mind – consider a warranty extension or, even better, the **Total Protection Upgrade**. This plan covers the cost of a replacement unit if, as determined by Acer, your covered notebook cannot be repaired.

2-Year Extension of Limited Warranty (146.AB820.EX2) for Notebooks with 1-Year Limited Warranty
\$99

2-Year Extension of Limited Warranty + 3-Year Total Protection Upgrade (146.AD077.002) for Notebooks with 1-Year Limited Warranty
(Total Protection Upgrade runs concurrently with limited warranty and limited warranty extension)
\$199

3-Year Total Protection Upgrade (146.AD339.004) for Notebooks with 3-Year Limited Warranty
(Total Protection Upgrade runs concurrently with limited warranty)
\$99

Each of these upgrades prepaies freight from the Acer repair depot and excludes extension of the International Traveler's Warranty.

¹ When referring to storage capacity, GB stands for one billion bytes and MB stands for one million bytes. Some utilities may indicate varying storage capacities. Total user-accessible capacity may vary depending on operating environments.

² For a free copy of the standard limited warranty end-users should see a reseller where Acer products are sold or write to Acer America Corporation, Warranty Department, P.O. Box 6137, Temple, TX 76703.

³ Genuine Windows® XP Professional can be installed in place of, not in addition to, Genuine Windows Vista® Business.

⁴ The 60-day trial of Microsoft® Office Ready is available with Genuine Windows Vista® Business only, not with Genuine Windows® XP Professional.

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Consumer Watch

Insider Deals: Sweet, If You Can Score Them

JEFF BERTOLUCCI

SAVVY WEB SHOPPERS are always on the lookout for coupons that can save them money on tech gear. But all coupon codes are not created equal, and most of the best ones aren't distributed to the masses. Here is the scoop on snagging insider deals—offers that are meant for family, friends, employees, or affiliates, and that can substantially reduce the cost of PCs and other electronics.

Most major vendors have insider or exclusive coupon deals, often redeemable on special areas of their Web sites. Some of these sites are more accessible than others: The Employees and Affiliates Store in Dell's Member Purchase Program (find.pcworld.com/61304) doesn't seem to require any proof that you're an employee or affiliate, while Lenovo's Contractor Purchase Program (find.pcworld.com/61305) will sell to anyone with the right coupon code, easily found on Web deal sites. In contrast, Hewlett-Packard's employee discount site (find.pcworld.com/61303) requires log-in credentials.

Lenovo is generous with its friends-and-family deals, too. "Anyone I give my information to can use the program," company spokesperson Aimee Foskie says. Dell imposes few, if any limits on its small-business bargains.

To find vendor deals that target students, small businesses, affiliates, or other special groups, you can try running a Web

search or inquiring at school or work. Or browse vendors' sites: Apple, for instance, recently offered an appealing back-to-school special package for college-bound students: a free iPod (a value of up to \$299) plus up to \$100 off the regular

price of a computer and a printer. The Apple deal is available only to college students, faculty, administrators, and staff members, but parents can get the deal on behalf of their kids.

You don't have to be a PC vendor's friend, relative, or employee to snag deals that were created for the benefit of exclusive groups of insiders.



Is This Code for Me?

If you come across a code, shopping mavens say, you should feel free to use it—regardless of whether it's intended for just anyone. A contractor's discount if you aren't a contractor? An education discount if you aren't a student? All of these are fair game, they say—if you can find the bargain and the seller doesn't object.

"If the store doesn't create a barrier, like ask for your student ID, I don't see why you wouldn't take the discount," says Daniel de Grandpre, CEO of Dealnews.com. Scott Kluth,

president and founder of CouponCabin, another popular deal site, concurs: "If you find a code out there, go for it. Nine times out of ten the merchant's not going to come back to you and say, 'This wasn't intended for you.'"

Vendors' policies vary in this area, but in general they appear to be relatively blasé about granting access to friend/family, contractor, and affiliate discounts, and relatively stringent in checking qualifications for educational deals. With »

Let the deals find you: Read *Skeptical Shopper*, Yardena Arar's look at bargain-hunting sites that you can customize to send alerts about good prices for products you choose (find.pcworld.com/61408).

a code for Lenovo's contractor site, I was able to configure a ThinkStation D10 workstation for \$2104, versus \$2475 on Lenovo's regular site. And at Dell's Employees and Affiliates store, I found an Inspiron 1525 laptop for \$685, or \$64 off the regular discounted price. "Targeted coupons are not tied to any person, so if they are shared it is not a problem," Dell spokesman Jay Pinker wrote in an e-mail message.

On the other hand, to get an educational discount from Dell, you may have to prove that you're a student or an educator. And people who sign up for HP's Academic Purchasing Program (APP) must affirm that they are eligible for the discounts. HP may check a customer's credentials and cancel an order if it detects fraudulent activity, HP spokesperson Amy Smith says.

You might also run into qualification problems if you try to purchase software meant for students and faculty. "You're using software you don't have the right to use, so technically it's the same as piracy," de Grandpre says. (Microsoft has no objection to home users' buying its Office Home and Student 2007 suite, but only if they aren't running a business at home.)

Vendors change coupon codes often, a maddening fact of life for bargain hunters. "Expired coupons are the largest complaint, that I know of, from Internet shoppers," says Kluth. "It's extremely frustrating." To verify coupons, CouponCabin places test orders using them: "We post the last test date with the coupon, and typically test each offer at least twice a week."

Smart shoppers must act fast. Susan Kahler of Jefferson, Arkansas, scans FatWallet's user forums 10 to 12 times a day in search of hot deals. "If something comes up, you just can't pass it up," says Kahler, a marketing professional who lives 45 minutes from Little Rock—too far away to take advantage of the big-box discounters there. "With FatWallet, if somebody finds a deal in California, in two minutes everybody from coast to coast knows about it."

SKEPTICAL SHOPPER

YARDENA ARAR



Still Nervous About Shopping Online?

LAST FALL, I wrote about Assuriz, a service that—for a small up-front surcharge—would let you return anything you bought at a participating retailer, on very generous terms: no questions asked, a 90-day window, and no shipping charges or restocking fees. Sadly, Assuriz is no more. PC World's Steve Bass has written about the Assuriz debacle (find.pcworld.com/61407), but the gist of the story is that Assuriz filed for bankruptcy protection in late June after informing its retail partners that it was ending its service because of excessively high return rates. What a shock: Whoever came up with the company's business model apparently didn't anticipate that the type of person who'd sign up for the service would be far likelier than the average customer to use it.

Assuriz returns are no more. But now BuySafe seeks to assure customers of obscure sites with a bonding service.

A more interesting development at BuySafe is a free browser toolbar (though it works only with version 5 or later of IE). The BuySafe Shopping Advisor toolbar provides information on key secure shopping features for all U.S. e-commerce sites (not just BuySafe merchants) that appear in search engine results.

After I installed the beta, some search results on Google, MSN, and

Yahoo sported BuySafe ratings in the form of one to four check marks.

The first check mark indicates the presence of SSL Encryption (which shows that a site has an e-commerce component, useful if you're wondering whether a manufacturer sells directly to consumers).

A second check mark indicates that BuySafe has detected a privacy policy; a third check mark means that the site is known to use a third-party service to detect security vulnerabilities; and a fourth check mark denotes a BuySafe bonded merchant. In eBay searches, BuySafe-bonded sellers sported seals (but no other ratings.)

Clicking a toolbar button shows the top-rated sites: for example, Shoes.com, Zappos, Victoria's Secret, and Amazon topped the list when I googled for espadrilles. None is BuySafe-bonded.

A Safe Shopping Results button lets you search BuySafe merchants for the same keywords. But results in my tests suggested skimpy merchandise offerings: With my espadrilles search, the lead item was a Barbie doll with espadrille sandals.

BuySafe might have made sense when e-commerce was young, but in 2008 it seems somewhat anachronistic.



Another Type of Guarantee

Other third-party services still seek to assuage the fears of nervous online buyers. I recently looked at BuySafe.com, which rates e-commerce sites for security and privacy features, and offers merchants that it deems to be up to snuff the option of offering BuySafe's bonding service. Basically, the service is a guarantee—good for up to \$25,000 and backed by the likes of Liberty Mutual and Travelers Insurance—that the e-tailer will meet all of its obligations on a sale.

BuySafe's service (which, like Assuriz, must be paid for either by the merchant or by the consumer as an extra-cost option) seems designed to reassure people about shopping at small, obscure sites. But I'm not overly impressed. I've shopped on all sorts of sites for years now (none BuySafe bonded) and have never run into serious trouble.

The world's **first** mobile GPS network router.



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ON YOUR SIDE AMBER BOUMAN

MY PC BECAME infected by a Trojan horse that produced constant pop-ups about spyware threats and offers to get rid of them with a \$30 product called WinSpywareProtect, sold on a site of the same name. I bought it, in part because the site had PC World's Best Buy logo. But when a Web search revealed dozens of complaints about this software, I requested a refund. I am writing to you since your logo was apparently used fraudulently, and also to see if you can recommend a legitimate antispyware program that will remove this monster from my computer.

David Shluker, Far Rockaway, New York

OYS Responds: We are aware that WinSpywareProtect is using our logo without authorization, but since the company registered its domain anonymously, we have been unable to contact it. We're currently attempting to get WinSpywareProtect's Web hosting company to take the site down until our logo is removed.

We advised Shluker to use PC Tools' Spyware Doctor (find.pcworld.com/61328) or Norton AntiVirus (find.pcworld.com/61335) to cleanse his PC, which he did. But he could have spared himself trouble by doing some online research before downloading WinSpywareProtect.

At PC World we stipulate that any vendor posting our Best Buy or other award logo must link it to the specific pertinent coverage on our site. So the presence of a nonclickable PC World logo on a third-party site (which is the case on WinSpywareProtect.com) should raise a red flag. (Some legitimate award winners, including Spyware Doctor, don't link their PC World logos properly either, however.)

Consider installing software such as the McAfee SiteAdvisor browser plug-in (find.pcworld.com/61325), which will warn you when you try to visit sites that have been reported as fraudulent. At a minimum, run search-engine queries for unfamiliar products; you may not only dig up dirt but also find useful reviews or other info.

Missing in Action

Reader Rocky Drown of San Diego enrolled at FullReleases.com, a site that claims to provide downloadable games, antivirus software, operating systems, and more. But while Drown was prepared



to pay a \$5 introductory fee for access to unlimited downloads, he was dismayed when FullReleases.com, through a company called Billingsvc.com, began drawing \$30 a month from his bank account.

Complaints about FullReleases.com and Billingsvc.com are posted at Ripoff Report (ripoffreport.com) and Scam.com. Both companies have received unsatisfactory ratings from the Better Business Bureau as well, and McAfee SiteAdvisor flagged both as suspicious. Despite repeated attempts, we couldn't reach anyone at the companies; to stop the charges, Drown had to cancel his bank card.

Hot Fax-Machine Recall

Hewlett-Packard has issued a recall on its HP Fax 1010 and 1010xi units after receiving reports of overheating. No injuries have been reported, but the units have caused minor property damage, and HP says that consumers should disconnect the machines because they pose a fire hazard. To receive a rebate, customers should contact HP online (find.pcworld.com/61311) or by phone (888/654-9296).

LCD Glut Could Mean Holiday Bargains

WEAK DEMAND for LCD TVs and monitors, combined with strong manufacturing output, will likely cause prices on those products to tumble this fall, according to LCD industry analysts.

"The industry pendulum has swung into a buyer's market where customers are holding back orders," Merrill Lynch analyst Jeffrey Su wrote in a recent report on the state of LCD sales.

A lull in demand has already occurred in two of the world's largest LCD TV and monitor markets—the United States and China. The doldrums come at a time when manufacturers are shipping a record number of LCD panels.

"Overshipment of large-area LCD panels in [the second quarter] due to an overly optimistic outlook for 2008 was the main factor contributing to the rapid and significant panel price reductions seen in the panel supply chain beginning in June," concluded research firm DisplaySearch in a report that it issued in early August. The report said that manufacturers worldwide shipped a record 117.9 million large LCD panels during the second quarter.

How quickly will the impact of these market forces be felt at the retail level? Analysts say that it could take a month or so (from this mid-August writing) for declines in prices charged by component suppliers to filter through to retail store price tags.

To combat the falling prices, some LCD makers such as South Korea's LG Display and Taiwan's AU Optonics have said that they plan to cut back on production. Industry giants Samsung Electronics and Sharp, however, have indicated they will continue to ramp up shipments. As a result, prices for LCD panels will probably continue to decline for a while—which should lead to consumer bargains later this year.

—Dan Nystedt ●

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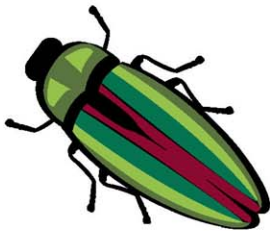
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HIGH SECURITY ALERT:

What's Bugging the SMB



Reliance on computer and networking technology makes small and medium-sized businesses (SMBs) increasingly vulnerable to what seems like an endless stream of potential security threats. Don't ease up, because there are no signs that the onslaught is abating.

Viruses, spam, spyware, worms, Trojans and other code can result in stolen information or slow system performance. They can even co-opt your computer to attack another company or store stolen data such as credit card numbers.

Workers are increasingly mobile with notebooks and smartphones. That means data and systems are constantly on the move, providing the means to transfer malware or capture data. And ever popular

Web 2.0 applications make it too easy to inadvertently or criminally leak company information.

What's an SMB to do?

Surrender is not an option. An incursion could bring your business to its knees. A relatively simple virus infection could be extremely costly in terms of paying for it to be eradicated and in lost productivity while systems are hobbled, if not outright disabled. More sinister

incursions could sit in your network monitoring traffic and scooping up account numbers, passwords and intellectual property.

With that in mind, here's a quick punch list to help you make your organization or your own personal computer more secure:

- **Policy:** Too many companies don't establish even the simplest policies of how their systems should be used and maintained. Many don't educate employees on what they are allowed to do with company systems and data.
- **Patches:** Make sure you or someone in your organization has a regular schedule for reviewing whether software security updates are available — or turn on automatic updating.
- **Phishing:** Manipulating users to visit Web sites where they can come in contact with malware is increasingly frequent. Regularly educate users on phishing dangers.
- **Passwords:** Ugh! If they're too simple, they're easy to crack; if they're too difficult, users will write them down or store them electronically. Make sure your systems require passwords to be changed periodically.
- **Ports:** Save yourself some pain and money with a relatively modest investment in technology to do your own scanning or hire a service company to identify any open ports on your network.

Ahead of the Curve

The volume of new malicious software is growing exponentially, resulting in an increase by a factor of 10 this year over 2007 and with an estimated 20 million new malware samples. Traditional anti-malware protection is no longer effective to combat these malicious threats.

In response, antivirus products have morphed into "security suites," theorizing that if one defensive layer doesn't catch a threat, another will. But with this, computers using these products are experiencing increased drag on system resources and user tolerance.

Kaspersky Internet Security 2009 represents a new standard in Internet security. The software combines a new approach, combining traditional signature scanning of bad applications (blacklisting) with an extensive database of more than 400 million known, good applications (whitelisting). This solution focuses its extensive analysis capabilities to closely watch code that falls into neither category (good or bad) and restrict its access to various system resources that could be secretly attacked.

Kaspersky Lab delivers a new standard for protection against IT security threats, which include viruses, spyware, hackers, phishing, and spam, for home users, SMBs, large enterprises and the mobile computing environment.



DON'T BE SO SAD. YOU WERE VERY GOOD, ONCE UPON A TIME.

Most of today's Internet security technologies are awkward and cumbersome. They just plain slow you down. But with Kaspersky, you can experience a whole new level of security unlike anything you've known before. A system so intelligent it actually knows what's good, what's bad, and what to keep a close watch on.

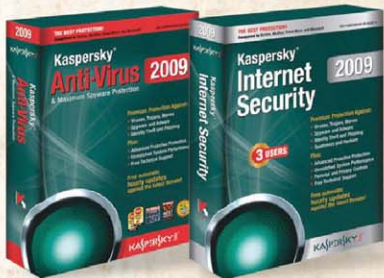
It's the first of its kind. A revolutionary approach combining the greatest possible security with the highest performance and a no-hassle experience that virtually eliminates security pop-ups. So you can work better, faster. And never ever worry.

Compared to Kaspersky, other security software options are positively medieval.

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Business Center

Linux: A Least-Cost Alternative to Windows

BY SCOTT SPANBAUER

IF YOU'RE LOOKING for an alternative to Windows Vista and you prefer not to go "back to the future" with XP, you might seriously consider the Linux open-source operating system as an option for your business. The latest distributions are free, easy to install, and highly customizable; they harness your existing hardware without overtaxing it; and they include a wealth of productivity applications and utilities.

Admittedly, switching from Windows to Linux will incur some costs in time as employees and support staff adjust to the new operating system's configuration settings, utilities, and applications. Even so, the savings in future hardware and software upgrades could eventually be huge.

No License Needed

Though you can purchase boxed commercial versions of Linux that include support, every distribution is also available for free under the terms of the open-source GNU General Public License, or GPL. Once you figure out which distribution you'd like to use (see below), you can simply download, burn, and install it on as many systems as you choose. Your software licensing fee is zero, in contrast to the \$300-per-seat price tag for the full version of Windows Vista Business Edition. And

If you're underwhelmed by Vista, and XP feels like a step back, then it might be time for your small business to try Linux.

(another bonus) Linux lacks Microsoft's intrusive activation requirements.

Besides working with thousands of other free applications (for some of my

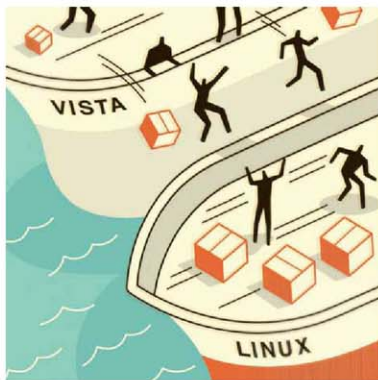
placements, but for many workplaces the missing functionality hardly merits spending \$800 more for Windows and Office. Many Windows applications

will run at native speed under Linux via the Wine utility that comes with most distributions. For those apps that don't work with Wine, two more options exist: You can install a copy of Windows using one of the available free virtualization utilities, such as KVM (Kernel-based Virtual Machine, built into the Linux kernel) or VMWare Server, or you can install Linux to dual-boot with Windows.

For most distributions, the same disc will contain server applications, the MySQL database engine, virtualization software, and support for leading commercial databases

and CRM applications. The Samba networking software emulates Windows Server's networking features admirably, and for free (versus Windows Server 2008's starting price of \$999). You can even replace your costly Exchange server installation with the free, open-source Zimbra Collaboration Suite.

Whether you will be using desktop or server versions of Linux, the operating system is famous for one other important feature that Microsoft is still adding gradually to Windows: security. ➤



picks, see find.pcworld.com/61341), most Linux distributions come with a copy of OpenOffice.org. Though it is not a feature-for-feature substitute for Microsoft Office, it does the job, and for \$500 less per workstation than Office Professional 2007. OpenOffice.org lacks an equivalent to Microsoft Outlook, but just about every Linux distribution includes Novell's free Evolution personal information manager.

A few key Windows-based applications, such as AutoCAD, lack Linux re-

To keep day-to-day tabs on the ongoing operating-systems war, be sure to check out the Operating Systems section of PC World's online Business Center (find.pcworld.com/61342).

Linux isn't somehow magically immune to viruses, worms, and other Internet-based attacks, but the vast majority of threats target Windows and Windows apps. Largely by design—as well as because of its minority status—Linux is simply not subject to most of the Net-based malware that threatens PCs.

Install Options, Support

The two most popular Linux window managers—the software that controls the look and behavior of the X Window graphical user interface—are Gnome and KDE. Most distributions default to installing one or the other—Ubuntu opts for the former, for example, and OpenSUSE, the latter. However, you could install both window managers on your system, and choose which to use when you log in. Also, several window managers, notably Blackbox and Xfce, require less memory and graphics processing than Gnome and KDE, making them a good choice for older hardware.

Finally, lightweight Linux distributions, such as Puppy Linux, prune the OS down to its elements, breathing life into even the most ancient PC.

Operating-system support is never cheap, but Linux support is relatively inexpensive. The \$60 packaged version of Novell's community-supported OpenSUSE 11.0 comes with 90 days of installation support. For long-term support, choose SUSE Linux Enterprise Desktop (currently in version 10) for \$50 per year, or go with Ubuntu and buy a support contract from maker Canonical starting at \$250 per year. (Ubuntu users, though, joke that simply googling for technical support usually results in the exact answer you're looking for on Canonical's forums.)

While Linux isn't an alien life form, it is different from Windows, and making the transition to it will take some time and money. But never having to pay Microsoft for Windows and Office licenses again is a gift that keeps on giving. More important, you'll be free to run your choice of desktop and server software, on hardware you can afford.

NET WORK

RICHARD MOROCHOVE



Create Performance Reviews on the Web

FORTUNE 500 companies dedicate whole departments to managing human resources; small businesses also need to track their employees' professional growth and performance, but usually lack the resources to do it well.

That's where SuccessFactors (www.successfactors.com) comes in. It's an online human resource management service that can help a company of almost any size handle performance reviews and better manage its employees. (Note, however, that it does not run number-crunching HR tasks such as payroll processing and tax deductions.)

Because SuccessFactors is an online service, you have no software to install. Its extensive library of templates and examples helps people who aren't HR professionals through the performance-review process. If you use the service to show employees how meeting business goals directly affects their evaluations, they'll be more likely to keep those goals in mind, thereby assisting in your business's growth.

Using SuccessFactors

Setup involves providing details about employees to be evaluated. The service supplies templates for goal plans and performance-review cycles; it even supports a "360 degree" evaluation, in which peers, managers, and other colleagues contribute to an employee's evaluation.

Online tutorials provide general guidance, and more-extensive help is available for certain components. For instance, a Writing Assistant can suggest language to use in a performance review. You can modify the suggestions, add further comments, and then click for a Legal Scan of your evaluation, which will highlight inappropriate language—a passage calling an employee "stupid," for example,

A new Web service can help a business better manage its human resources.

will elicit suggestions to be positive and recommend how the employee can improve. A spelling check is also available. These tools help a manager create a polished performance review, even if he or she lacks good writing skills.

In short, the service doesn't merely automate paper-based personnel forms;

it provides guidance on the entire performance-review process.

SuccessFactors can also help a manager monitor employee progress. A library of suggested goals can aid you in creating relevant performance targets: A salesperson, for instance, may be required to generate a certain number of leads.

If you keep the service informed of the current state of progress toward meeting goals, it can create color-coded indicators that quickly illustrate whether an employee has completed a goal (blue), is on track (green), is falling behind (yellow), or risks failure to meet the goal (red). A dashboard allows you to track upcoming tasks and your progress in achieving your employee-management goals.

Several Sizes Available

SuccessFactors is available in editions that cater to organizations ranging in size from a few dozen staffers to large enterprises with more than 20,000 employees. The Professional Edition is aimed at small businesses with up to 500 employees; the company says it costs, on average, about \$100 per user per year, depending on the number of modules and users. And you can sign up for a free trial.

The most valuable assets of your business walk out the door at the end of every day. Good human resource management can ensure that they'll return tomorrow.



Fujitsu recommends Windows Vista® Business for business computing.
Fujitsu recommends Windows Vista® Home Premium for personal computing.



Windows Vista®



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PCConnection

Insight



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A Nice Printer for Small Shops

PCW Test Center

COMPARED WITH OTHER printers in its price range, the \$699 Konica Minolta Magicolor 4650EN color laser printer does as good a job as any of its rivals at balancing features, capabilities, and cost; it's a solid choice for smaller offices or workgroups.

In our lab tests, the Magicolor 4650EN posted competent midrange speeds of 23.1 pages per minute for plain text and 3.9 ppm for graphics. Text samples looked black and clean. Graphics were detailed, but photos exhibited a slightly yellowish cast.

79
GOOD

Magicolor 4650EN Konica Minolta

Inexpensive color laser unit; speedy text output, but some-

what limited for legal-size printing. List: \$699

find.pcworld.com/61309

The 250-sheet main paper tray slides out from the printer on rails (it doesn't detach); that extra support probably increases the component's sturdiness. Though legal-size (8.5-by-14-inch) paper is less commonly used than standard (8.5-by-11-inch) paper, we were surprised that the printer's main input tray accepts only the latter. You must load legal-size pages in the 100-sheet auxiliary side tray or invest in an optional 500-sheet feeder (\$255). A related model, the Magicolor 4650DN, includes duplexing (two-sided printing) and costs \$799 at this writing.

The four-line monochrome LCD screen is backlit for readability. The dual-function button for summoning the menus or selecting a setting can be confusing, but word labels indicate both functions. The logically organized



KONICA MINOLTA'S 4650EN is modestly priced, given its laudable feature set.

submenus cover a wealth of features.

The printer ships with 3000-page-capacity toner supplies for each color. The highest-yield replacements (8000-page cartridges) work out to a reasonable cost of 1.4 cents per page for black and 2.1 cents per page for color.

—Susan Silveus and Melissa Riofrio

PHOTOGRAPH: ROBERT CARDIN



we protect your digital worlds®



I Am IronKey, and I Can Encrypt Anything

THE IRONKEY USB flash drive (find.pcworld.com/61323) is not only one of the most secure devices I've ever tried; it also makes setting up that security very simple. Made by a company of the same name, the IronKey—which is available in capacities ranging from 1GB to 8GB—encrypts data six ways to Sunday while achieving government certification as tamper-resistant. A secure version of Firefox comes preloaded on the drive for completely anonymized Web browsing.

The advantage of using an encrypted flash drive such as an IronKey is that any computer you might need to work on will retain none of the data—your e-mail, say—that you're working with. Instead, data stays stored on the drive, along with your apps.

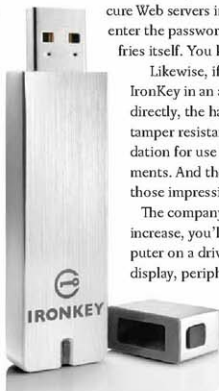
The sleek metal unit provides hardware AES encryption, so all encryption happens on the flash drive, not on the host computer. Encryption keys are kept only on the drive, and unlocked only

when you enter a password you created when you initialized the drive. IronKey lets you back up that password on its secure Web servers in case you forget it—because, if you enter the password incorrectly ten times, the hardware fries itself. You know, *Mission Impossible*-style.

Likewise, if someone physically tampers with an IronKey in an attempt to access the flash memory directly, the hardware wipes out that memory. This tamper resistance has earned the device security validation for use by the U.S. and Canadian governments. And the IronKey certainly was able to back up those impressive distinctions in my testing.

The company says that as flash-drive capacities increase, you'll be able to carry around an entire computer on a drive, relying on a host machine for the display, peripherals, and networking only. For now, you can buy a 1GB IronKey for \$79 (including a one-year subscription to do anonymous browsing); the largest IronKey, at 8GB, costs \$299.

—Glenn Fleishman ●



PHOTOGRAPH: MARC SIMON

SINCE IT'S BUILT to carry classified government data, don't even think about messing with this thumb drive.

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Security Alert

Build Your Own Free Security Suite

BY ERIK LARKIN

DO-IT-ALL SUITES ARE the name of the security game these days. Sure, you can gather free programs that cover the bases much as a suite would, but who wants to bother with finding out which apps work together and which ones might leave you pulling your hair out?

We do. And what's more, we did—all so that you could have an easy-to-follow guide to building your own free suite.

We tested the following applications on Windows XP; not all of them work under Vista, but we've suggested replacements that you can consider if you're on the newer OS. Bear in mind that these downloads are free only for home use.

Your Antivirus Base

For our free collection we went with AVG Free 8.0. It installs easily, and it works under XP and Vista. Its ads for its paid version don't get in the way, and since it ferrets out spyware and adware, you don't need to install a separate antispyware program. Also, it generally does well in signature-based detection tests from organizations such as AV-Test.org (those tests typically evaluate the paid product, but the free and paid versions use the same signature-based scanner).

AVG Free does have some limitations: Though the app will detect and block rootkits (stealth technology used to hide other malware) before they invade your PC, it won't detect or remove a rootkit that has already successfully infiltrated your computer. Furthermore, its ability to detect new threats that don't yet have a full signature generally isn't that great.

But hey, it's free. Nab it from find.pcworld.com/61327. When you install it, you'll be prompted to install a browser toolbar, but you don't need to do so to get AVG's LinkScanner, which checks for attack code on Web search results and puts a safety indicator icon next to each one. (For information on a potential LinkScanner slowdown and how to fix it, see page 148.)

If you use AVG, be aware of one potential gotcha: The free ThreatFire malware detection utility seems like a great pairing, since ThreatFire does a fine job of detecting new malware without a signature and also detects and removes rootkits. But the current version, 3.5, conflicts with AVG and will cause system lockups. PC Tools, maker of ThreatFire, says that it's working on a fix, but for now you should avoid using the two together.

An Outbound Firewall

After installing antivirus software, many people replace the Windows XP firewall with a third-party firewall to regulate outbound traffic. This strategy can stop malware that has

already invaded your PC from sending stolen data to a crook, but even free ones come at a price: You'll almost always have to deal with some annoying pop-ups when a new, unknown (to the firewall) program attempts to connect to the Internet.

Still, if you're willing to tolerate the pop-ups, outbound blocking can provide good protection. To get it, we chose Online Armor Personal Firewall Free (find.pcworld.com/61329). Though there aren't any universally accepted firewall tests, Online Armor did well in the extensive Firewall Challenge (find.pcworld.com/61330) by Matousec.com, a security test- ➤

A no-muss, no-fuss guide to free security tools that work together to protect your PC.



Read our "10 Quick Fixes for the Worst Security Nightmares" (find.pcworld.com/61352) and our report on Net neutrality supporters' victory over Comcast P-to-P throttling (find.pcworld.com/61351).

Security Alert

ing group. This program is also easier to use than many other free firewalls.

After going through the installation and Safety Check, right-click the OA system-tray icon and deselect Program Guard; that feature, when running, will display pop-ups for every new program that you attempt to install or run, instead of just the apps that attempt to connect to the Internet. For us, the huge annoyance wasn't worth it.

Online Armor does not work with Vista. But you can enable the Vista firewall's outbound blocking (it's turned off by default) with the free Vista Firewall Control (find.pcworld.com/61331).

Extra Web-Search Safety

AVG's LinkScanner component checks sites in your search results for browser-busting exploits. To add warnings for

dangerous downloads, user complaints, and spam potential, bring SiteAdvisor into the mix. This free download from McAfee (siteadvisor.com) will add an icon that sits next to the one from AVG in your search results, along with a safety indicator for the currently viewed page.

The Cleanup Crew

Many all-in-one suites offer PC tune-up features that can clear out old junk in temp directories or eliminate Windows Registry clutter. To get the same features in your free suite (for Windows XP or Vista), download CCleaner (find.pcworld.com/61332).



LOOK AT BOTH the program name and its location to decide if you want Online Armor to allow it to connect to the Internet.

When you install the gunk-busting utility, keep an eye out for a check box along the way that will not-so-helpfully offer to install the Yahoo toolbar. If you don't want the toolbar, deselect the box. And when you use the program, re- ➤

PRIVACY WATCH

ERIK LARKIN



When to Worry About Security Holes—and When Not To



ONE OF THE best things you can do to help keep your PC and your private data safe is to stay abreast of the latest security alerts. But security news stories often contain techie jargon that can make your eyes glaze over faster than a congressional session on C-SPAN.

To help you determine whether a

particular alert is worthy of Chicken Little or is truly dangerous, here are translations for some of the most common threat terms.

Drive-by download: A big one. If a program or operating system bug allows drive-by contamination, your PC can become infected with malware if you simply view a malicious Web site. You don't have to download anything or click any links on the poisoned page.

User interaction required: You might think that you'd have to download a file or open an attachment to get hit by an attack described in this way. But experts often apply the term to simply clicking a link that will deliver you to a page containing a drive-by download.

Zero-day: Potentially major, but not always. This term most commonly refers to a flaw (and perhaps an attack exploiting it) that surfaces before a fix is available. If the attack is ongoing (see "in the wild"), watch out. But many alerts or stories play up zero-day flaws that aren't being hit and may never be; see the next entry.

Annoyed by all the computerese that litters security stories? Here's your guide.

Proof-of-concept: A flaw or attack that researchers have discovered but that bad guys have yet to exploit. If the alert says something like "proof-of-concept code has been released," crooks are very likely to create a real attack with that sample. But many evil-sounding proof-of-concept attacks never get weaponized.

In the wild: The opposite of proof-of-concept. When an exploit or malware is in the wild, digital desperados are actively using it. If the term is being used to describe attacks against a software flaw, make sure that you have installed the application's latest patches.

Remote code execution: This kind of flaw allows an attacker to run any command on the victim's computer—such as installing remote-control software that can effectively take over a PC. Holes of this type are dangerous, so take notice when you hear of one.

Denial of service: Not so bad. This term usually describes an attack that can crash a vulnerable program or computer (thereby denying you its service) but can't install malware. Occasionally, however, crooks figure out how to transform a denial-of-service flaw into a concerted attack that allows remote code execution.

Of course, your best bet is to apply security patches as they're released, whether to fix a proof-of-concept denial-of-service flaw (yawn!) or to address an urgent zero-day drive-by download threat.

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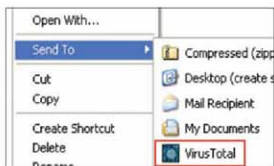


*Based on IDC, Worldwide Quarterly Server Tracker, February 2008. In Calendar 4Q '07, IDC reported worldwide HP ProLiant server shipments at 681,445 units, well ahead of Dell PowerEdge's 499,715 units at #2. IDC also reported ProLiant factory revenue at \$2,743 million vs. \$1,580 million for Dell's PowerEdge family. Prices shown are HP Direct prices; reseller and retail prices may vary. Prices shown are subject to change and do not include applicable state and local taxes or shipping to recipient's address. Offers cannot be combined with any other offer or discount and are good while supplies last. All featured offers available in U.S. only. Savings based on HP published list prices of configure-to-order equivalent (\$3125 - \$850 instant savings = SmartBuy price of \$2,275). 1. Financing available through Hewlett-Packard Financial Services Company (HPFS) to qualified commercial customers in the U.S. and subject to credit approval and execution of standard HPFS documentation. Prices shown are based on a lease of 48 months in terms with a fair market value purchase option at the end of the term. Rates based on an original transaction size between \$3,000 and \$25,000. Other rates apply for other terms and transaction sizes. Financing available on transactions greater than \$349 through September 30, 2008. HPFS reserves the right to change or cancel these programs at any time without notice. AMD, the AMD Arrow logo, AMD Opteron, and combinations thereof are trademarks of Advanced Micro Devices, Inc. ©2008 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice.

member that you might not want to jet-tison everything that CCleaner—or any other gunk remover—suggests clearing, such as your Firefox browsing history or the list of documents that you've recently opened in Windows Explorer. And whenever you use any Registry cleaner or optimizer, be sure to back up the Registry first in case something goes wrong (CCleaner offers to do it for you each time you use the Registry tool).

The Free Security Bonus

With this last tool, your roll-your-own suite will go beyond what even the best paid suite can provide. The free VirusTotal Uploader (find.pcworld.com/61333) gives you a right-click option in Explorer to upload any suspect file no larger



IF ONE ANTIVIRUS scan isn't enough, try 35 at once with the free VirusTotal Uploader.

than 10MB to VirusTotal.com, where a whopping 35 different antivirus engines will scan it. No single antivirus application can catch everything, and for this reason VirusTotal provides a great (and easy-to-use) second line of defense.

If you get the go-ahead from all of the engines, you're almost certainly golden. If you see one or two generic-sounding alerts, the file is likely safe, as the warnings are probably false alarms. But if you receive, say, seven or more different warnings, and some of them identify a specific threat, watch out.

If you don't want to deal with multiple downloads and you would rather pay \$50 to \$80 for a set-it-and-forget-it approach to PC safety, head to find.pcworld.com/61334 for our security-suite ratings. In exchange for a little more effort, however, this collection can keep your PC safe and sound for free.

BUGS & FIXES

STUART J. JOHNSTON

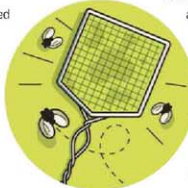


Firefox 3 Breaks Records, Then Itself

MOZILLA'S FIREFOX 3, upon its recent release, set a new record for browser downloads in a single day: more than 8 million copies in just 24 hours. So it's no surprise that these days hackers are spending more time hunting for Firefox holes.

Mozilla issued updates to patch two security holes in both Firefox 2 and 3. The first fix blocks a malicious attack program from crashing Firefox by sending more pipe (the vertical line, or "I") characters than the browser can handle. The second vulnerability involves a similar overflow attack risk.

Neither bug has spawned real, in-the-wild attacks as yet, but with both unfixed, visiting a poisoned Web page could leave your PC infested with malware. Make sure you have the latest browser version by clicking **Help>Check for Updates** (versions 2.0.0.16 and 3.0.1 contain these fixes). Head to www.mozilla.org/security/ for the latest Mozilla security alerts.



Opera Reprise

Firefox isn't the only browser in patching mode this month: Opera 9.51 corrects a security glitch rated "moderately severe" in the just-released 9.5 version. Opera has declined to disclose any details about the flaw, so as not to tip off hackers; thankfully, the patch predates real attacks.

Version 9.51 also fixes several stability issues and a bug that could let a bad guy read random portions of your PC's memory, possibly exposing sensitive information. Use Opera's **Help>Check for Updates** command to determine whether you need an update. To get it, you'll have to download and install the latest full version manually from www.opera.com/download.

Unlike the Firefox and Opera bugs, a Microsoft Word hole is under attack right now. At press time, Microsoft was investi-

Plus: Opera hits a sour note, and zero-days strike Word 2002 and Access.

gating reports of zero-day attacks against Word 2002 SP3 users (all other supported versions of Word are not affected).

As with many Office bugs, you'd have to open a poisoned Word document sent via e-mail or offered as a download to be hit. For more on the bug, check Microsoft's advisory at find.pcworld.com/61307.

Another Zero-Day Threat

Microsoft is probing a different zero-day assault that takes advantage of a hole in the ActiveX control for the Snapshot Viewer for Microsoft Access. The company says that it has seen limited, targeted attacks that trigger the flaw through Internet Explorer. Viewing a malicious Web page could leave your system com-

pletely compromised, and you're at risk if you have Access 2000, 2002, or 2003 installed, or if you downloaded the Snapshot Viewer for Microsoft Access on its own to read Access reports in IE.

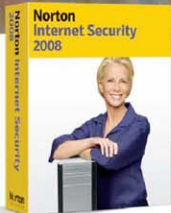
As with all zero-day vulnerabilities, no patch is yet available. Microsoft suggests a few largely unpalatable workarounds, which include disabling Active Scripting in IE, prompting before running Active Scripting, or editing the Windows Registry to disable just that particular ActiveX control (see the advisory at find.pcworld.com/61308 for instructions). Be careful with the Registry workaround, as making a mistake in editing the Registry can hamper or even break Windows. ●

BUGGED?

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Reviews & Rankings

Save Your Data With One of These Top Backup Programs

We test three new applications that make restoring—and saving—your vital data a lot easier than with tools you've tried in the past.

SAVING YOUR files on your hard drive is the easy part; choosing a method for backing up all of those files can be more difficult.

Traditional backup programs help you organize, schedule, and maintain your backups, and they make doing so easier than ever. However, tradition is quickly ac-

commodating new realities. Two of the three new applications we tested—EMC Retrospect Professional and NovaStor NovaBackup—now provide online ties.

Online backup is easy and secure, and it's safer than local backup by virtue of being off-site and stored on drives that are themselves



NTI'S SIMPLE, STRAIGHTFORWARD interface makes preparing your data for backup easy—regardless of which method you choose.

backed up regularly by your online storage provider. It isn't appropriate for everyone; most users' broadband connections offer relatively slow upload speeds, so backing up all your files to an online service can be considerably slower than doing so to a local or ethernet-connected hard disk. And if you have a large collection of digital photos or multimedia files, you're looking at a processing time of several days.

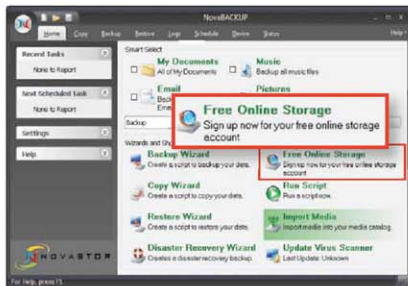
Though online backup undoubtedly is the future, you may not need such services yet. Even so, you shouldn't wait indefinitely to add a backup utility to your list of must-have applications. Put-

ting it off can be one of the costliest mistakes you'll make in your computing life.

NovaStor NovaBackup 10 Professional

While the \$50 NovaBackup 10 (find.pcworld.com/61343) contains many major underlying changes, the most obvious improvement to this package is its infinitely friendlier user interface. The new interface mimics the design of one of the best: Microsoft Office 2007, with its big-button file menu.

Perhaps even more important, NovaBackup's layout and workflow are both immaculate—a rarity among the comprehensive backup



NOVASTOR'S NOVABACKUP 10 Professional features a refreshed (and much-improved) interface and a more-logical backup workflow.



64 DELL STUDIO Hybrid



89 SONY VAIO VGN-FW1980U/H



92 HP PHOTOSMART A636 Compact Photo Printer



96 SIMPLETECH ReDrive

applications that NovaBackup competes against.

Another huge improvement is the addition of disk imaging, the backing up of drives and partitions in their entirety. I was expecting the feature to be primitive; but NovaBackup's implementation, courtesy of Farstone, is more than adequate for most users and will likely satisfy many professional users. My one complaint: I found the imaging module slow at recognizing drives.

The app allows you to back up and restore entire drives or single partitions, restore individual files and folders, and even perform searches within individual images.

NovaBackup comes with a free, one-year, 2GB DigItStor account that is customized to mesh with NovaBackup. You must provide credit card information to get the account; if you don't want to keep it, however, the account will be canceled, not automatically renewed.

MORE ONLINE

For more information, and to download trial versions of the applications discussed here, see find.pcworld.com/61367.

PC WORLD TOP 5 BACKUP UTILITIES

BACKUP SOFTWARE

- 1** **BEST BUY** NovaStor NovaBackup 10 Professional
\$50 NEW
find.pcworld.com/61343

PCW Rating

91
SUPERIOR

Features and specifications¹

- Supported media: Hard disk, CD/DVD, tape, Rev drive
- Disaster recovery: Yes
- Native file backup: Yes
- Open file backup: Yes
- Continuous data backup: Yes

BOTTOM LINE: A friendly new interface and online backup integration are highlights of this full-featured backup app.

- 2** NTI Backup 5 Advanced
\$30 NEW
find.pcworld.com/61344

90
SUPERIOR

- Supported media: Hard disk, CD/DVD, tape, Rev drive, Blu-ray
- Disaster recovery: Yes
- Native file backup: Yes
- Open file backup: Yes
- Continuous data backup: Yes

BOTTOM LINE: A solid, reliable performer, NTI's file-based backup program offers plenty of options and a friendly interface.

- 3** Genie-Soft Genie Backup Manager Pro 8
\$70
find.pcworld.com/61345

84
VERY GOOD

- Supported media: Hard disk, CD/DVD, tape, Rev drive, GoVault, Blu-ray
- Disaster recovery: Yes
- Native file backup: Yes
- Open file backup: Yes
- Continuous data backup: Yes

BOTTOM LINE: This easy-to-use app has exceptional media support and great features, but minor glitches mar its interface.

- 4** EMC Retrospect 7.6 Professional
\$158 NEW
find.pcworld.com/61346

82
VERY GOOD

- Supported media: Hard disk, CD/DVD, tape, Rev drive
- Disaster recovery: Yes
- Native file backup: Yes
- Open file backup: Yes
- Continuous data backup: Yes¹

BOTTOM LINE: Powerful software has advanced features, but the interface is complex and online backup isn't truly integrated.

- 5** Titan Backup 2.1
\$40
find.pcworld.com/61368

80
VERY GOOD

- Supported media: Hard disk, CD/DVD, FTP
- Disaster recovery: No
- Native file backup: Yes
- Open file backup: Yes
- Continuous data backup: No

BOTTOM LINE: Simple-to-use utility with network log on and other features lacks disk imaging and support for tape drives.

FOOTNOTES: ¹Native file backup allows access to backups in their native format within Windows Explorer. ²Through a \$29 add-in module, included in our listed price for the package. **CHART NOTES:** Ratings are as of 7/25/08. Listed prices are for the download from the vendor.

NTI Backup 5 Advanced

NTI Backup 5 Advanced (\$30; find.pcworld.com/61344) is by far the most complete backup application that NTI has ever released. It brings continuous data protection, file-based backup, and what the company calls "drive-based backup" (aka disk imaging),

all inside a single extremely friendly package. This version introduces the ability to back up open files, too—a long-standing omission.

Backup 5 Advanced uses the same impressively intuitive interface that has been the program's trademark for several years, with the more-polished look that debuted

with version 5 last year. The step-by-step buttons located on the left and the relevant options and selectors on the right are the perfect blend of easy to learn and easy to use.

Backup 5 Advanced's imaging module includes adjustments for compression level, encryption, and verification. You can get even more >>

granular in tweaking the file-based backup and continuous data backup. For the latter, you can back up by filter or location (choose a directory), or you can back up your "profile," consisting of your e-mail, desktop settings, address book, Outlook .pst file, and the like.

A nice touch: The application can notify you by e-mail upon the completion (or failure) of a job.

I did have a couple of minor operational issues with the software, however. To back up to a network location, I first had to map the destination as a drive within Windows Explorer—a rather odd approach considering that the program permits

you to select an FTP site as the backup destination.

My other caveat: Though NTI Backup lets you arrange for daily backups, you can't have them run in alternate weeks. Nor can you set the program to write to different media, as you can Retrospect.

EMC Retrospect 7.6 Professional

I wish I could say that EMC has revamped Retrospect's rather obtuse interface for version 7.6. Unfortunately, I can report only that EMC Retrospect 7.6 Professional represents a minor upgrade.

I tested Retrospect for this story with the new Continuous Data Protection professional add-in (\$129 plus \$29 for the CDP module; find.pcworld.com/61346), which adds heretofore missing capabilities to Retrospect.

This latest version of Retrospect remains unmatched in the breadth of its file-based backup features: It has superflexible scheduling, disaster recovery, and plain file copy, along with support for remote clients, tape drives, Macs and PCs, and more.

For version 7.6, EMC offers two primary additions: support for Mozy online backup (first 2GB free), and the \$29 Continuous Data Protection (CDP) add-in. Unfortunately, though the CDP module can launch from within Retrospect, otherwise it's a separate entity complete with its own system-tray application sitting alongside Retrospect's monitor/scheduler. And integration with a Mozy backup account is virtually nonexistent: Retrospect can only launch the Mozy client.

CDP doesn't permit you to select a directory (such as My Documents) for backup, as other programs do; instead, it will back up data based on file filters. EMC earns bonus points, however, for allowing you to back up to multiple locations.

Retrospect 7.6 has a few other minor updates, namely in its expanded support for Mac systems, Microsoft Exchange Server, and 64-bit operating systems.

—Jon L. Jacobi



RETROSPECT 7.6 PROVIDES most everything you need in one place, but both continuous backup and online backup remain more separate than integrated.

DISK IMAGING

Paragon Drive Backup 9.0 Personal

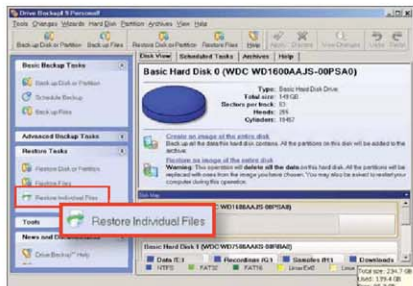
UNLIKE THE NOVASTOR, NTI, and EMC backup packages profiled above, applications devoted to disk imaging aim to back up your entire system, instead of operating merely at a file level.

Paragon's Drive Backup 9.0 Personal (\$40; find.pcworld.com/61355) disk-imaging application is just a feature or two shy of competitor Acronis

True Image Home 11. Drive Backup 9.0's newly acquired ability to back up and restore individual files and folders, in addition to imaging drives and partitions, makes the two programs nearly equal. If the restore implementation were a little friendlier, you could throw out the "nearly"; at any rate, considering Drive Backup 9.0's friendlier

interface and \$10 price advantage over Acronis, choosing between the two utilities is difficult.

Even though Drive Backup is easy to use, I ran into several minor interface glitches, such as an overly cramped file selector. One major issue: You can restore a file only to its original location, which means that you can't retrieve a file and retain the newer version of that file without first copying the existing file to a different, safe location.



PARAGON HAS MADE great strides with its Drive Backup 9.0, thanks to the newest version's ability to restore individual files and folders.

Do you really want Fred to come by and “fix” your computer?

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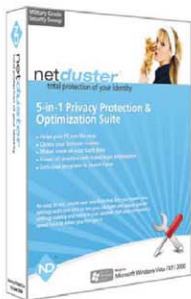
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Boost system performance by cleaning out all missing, unwanted, obsolete and corrupt registry entries automatically with our Registry Cleaner.

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Dramatically improve your desktop experience by repairing all registry problems and minimizing application seizures and crashes.



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Dell's Slick Studio Hybrid PC

PCW Test Center

DELL'S NEW Studio Hybrid makes a strong impression with its stylish design, and its price will make you take notice, too. A basic configuration starts at \$499, without monitor; our configuration, with a 19-inch LCD, cost \$1064.

Dell bills the Studio Hybrid as being 80 percent

smaller than a typical desktop. To achieve this feat of miniaturization, the Hybrid uses notebook-computer components. Our test configuration had a 2.1-GHz Core 2 Duo T8100 CPU, 2GB of memory, a 250GB hard drive, and Intel Mobile 965 Express Chipset integrated graphics. The system isn't expandable (or user serviceable), so it has no graphics option beyond the integrated Intel graphics.

What's most noteworthy about this system is that you don't pay a premium for the miniaturized design.

What's least noteworthy is the machine's performance.

It mustered a score of only 79 on our WorldBench 6 tests, tying the mark garnered by the HP TouchSmart IQ506, which likewise uses notebook components; neither of these systems is in the same league as value PCs configured with desktop guts. Graphics performance was weak as well: The Studio Hybrid failed to muster playable frame rates on either of our gaming tests.

The Studio Hybrid's blah performance limits its versatility, but the idea of having a stylish, unobtrusive system



THE STUDIO HYBRID can sit either vertically or horizontally.

to connect to my television appeals to me. Suddenly, using a PC as a digital video recorder seems plausible.

—Melissa J. Perenson

PHOTOGRAPH: MARC SIMON

81
VERY GOOD

Studio Hybrid | Dell

This miniature system sacrifices power for a supersmall design.

List: \$1064

www.dell.com/hybrid

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Logitech's Handy Wireless Headset

IF YOU OFTEN engage in PC voice chats, check out Logitech's ClearChat PC Wireless headset. With it, you can roam across the room, down the hall, or even downstairs while talking or listening.

Lightweight and sleek without being fragile, this \$100 headset connects wirelessly

to a USB dongle receiver that plugs into your computer. It also works with an included wired station that plugs into your PC.

One of the headset's chief virtues is its ease of setup. After charging its internal battery with the included AC adapter, I flipped the on/off switch on the right earpiece, plugged in the receiver, and watched as the drivers installed. Within a minute, I was hearing excellent-quality voice and music. I chatted with several people on Skype and in Second Life, and each of them said that I sounded clear; Logitech says that the mic uses noise-cancellation

technology to reduce background sounds.

Though battery life was better than I've experienced with other wireless headsets, in my informal tests it fell somewhat short of the 6 hours that Logitech advertises. I certainly wouldn't count on using the headset nonstop for an entire workday.

With its untethered comfort and excellent audio quality, the ClearChat PC Wireless is well worth the



THE CLEARCHAT headset is lightweight and sleek, but still sturdy.

price. I would recommend it to anyone who regularly uses a headset for any voice-enabled PC application.

—Yardena Arar

91
SUPERIOR

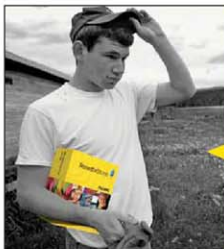
ClearChat PC Wireless Logitech

Excellent headset for people who regularly use voice applications.

List: \$100

find.pcworld.com/61400

PHOTOGRAPH BY MARIO SIMON



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These Powerful Desktops Pack a Punch

WHETHER YOU ARE shopping for a complete desktop package or building a system yourself, our chart is a useful gauge of today's top components. For one thing, Intel processors predominate. You'll find the 2.83-GHz Core 2 Quad Q9550 CPU in the chart's two most affordable performers: the Micro Express and HP desktops ranked second and fifth, respectively. Not much pricier is Dell's well-rounded XPS 630, our



BUILD TO ORDER: Dell's XPS 630.

Best Buy. It and the fourth-ranked Xi system use the excellent Core 2 Duo E8500. For speed freaks, Intel's overclocker-friendly Extreme chip in Polywell's Poly X4800-Extreme yielded some of the fastest results we've seen and propelled the PC into third place. Also notable: Cerise Computers' beautifully built Workstation with a whopping 2TB of hard-disk storage.

—*Danny Allen*

MORE ONLINE

Visit find.pcworld.com/61349 for in-depth reviews, full test results, and detailed specs for each desktop in our chart.

PC WORLD TOP 10 DESKTOPS

MODEL	PCW Rating	Performance	Features and specifications
1 BEST BUY Dell XPS 630 \$1959 NEW find.pcworld.com/61315	82 VERY GOOD	• WorldBench 6 score: 114 • WorldBench 6 rating: Very Good • Overall design: Very Good • Graphics: Very Good	• 3.16-GHz Core 2 Duo E8500 • 640GB drive capacity • 22-inch LG SP220WFP LCD • 512MB nVidia GeForce 9800 GT
BOTTOM LINE: Customizable desktop system provides affordable performance in a stylish package.			
2 Micro Express MicroFlex 450B \$1599 NEW find.pcworld.com/61318	82 VERY GOOD	• WorldBench 6 score: 119 • WorldBench 6 rating: Very Good • Overall design: Very Good • Graphics: Very Good	• 2.83-GHz Core 2 Quad Q9550 • 500GB drive capacity • 19-inch LG W1942TQ LCD • 512MB Sapphire HD4870
BOTTOM LINE: This power desktop delivers a whole lot of performance without a whole lot of price.			
3 Polywell Poly X4800-Extreme \$4799 NEW find.pcworld.com/61316	81 VERY GOOD	• WorldBench 6 score: 141 • WorldBench 6 rating: Superior • Overall design: Very Good • Graphics: Superior	• 3.2-GHz Core 2 Extreme X9770 • 600GB (RAID) drive capacity • 24-inch Acer AL2416WBS LCD • 1GB MSI nVidia GeForce GTX280
BOTTOM LINE: Expensive desktop provides knock-your-socks-off performance and lots of rear-port connectivity.			
4 Xi M700 PCIe Centurion \$3399 NEW find.pcworld.com/61319	81 VERY GOOD	• WorldBench 6 score: 132 • WorldBench 6 rating: Superior • Overall design: Very Good • Graphics: Superior	• 3.16-GHz Core 2 Duo E8500 • 600GB (RAID) drive capacity • 24-inch Samsung SyncMaster 245BW LCD • 512MB EVGA e-GeForce 9800 GTX
BOTTOM LINE: Nicely expandable system has blue-LED bling, gaming muscle, and bundled Logitech peripherals.			
5 HP Pavilion Elite d5000t \$1830 NEW find.pcworld.com/61321	79 GOOD	• WorldBench 6 score: 120 • WorldBench 6 rating: Very Good • Overall design: Good • Graphics: Poor	• 2.83-GHz Core 2 Quad Q9550 • 750GB drive capacity • 20-inch HP w2207 LCD • 512MB nVidia GeForce 9500 GS
BOTTOM LINE: This fairly well-priced PC is good looking, but it doesn't feel particularly sturdy.			
6 CyberPower Power Infinity Pro \$4299 find.pcworld.com/58183	79 GOOD	• WorldBench 6 score: 120 • WorldBench 6 rating: Very Good • Overall design: Very Good • Graphics: Superior	• 3-GHz Core 2 Extreme QX650 • 1.8TB (RAID) drive capacity • 22-inch Syntia SK220IW-B LCD • 768MB EVGA 8800 GTX
BOTTOM LINE: This QX650-based PC offers top gaming performance, but it'll also wallop your wallet.			
7 Polywell MiniBox 7806-9950 \$2350 NEW find.pcworld.com/61317	78 GOOD	• WorldBench 6 score: 110 • WorldBench 6 rating: Good • Overall design: Very Good • Graphics: Fair	• 2.66-GHz Phenom X4 Quad-Core 9950 • 600GB (RAID) drive capacity • 22-inch Samsung 2253BW LCD • 512MB GigaByte ATI Radeon HD 4870
BOTTOM LINE: Polywell's MiniBox is an attractive, compact PC with a medium level of expandability.			
8 CyberPower Infinity Pro \$4999 find.pcworld.com/58653	78 GOOD	• WorldBench 6 score: 124 • WorldBench 6 rating: Very Good • Overall design: Very Good • Graphics: Very Good	• 3-GHz Core 2 Extreme QX650 • 1.8TB (RAID) drive capacity • Dual 22-inch Viewsonic Q22WB LCDs • 768MB EVGA e-GeForce 8800GTX
BOTTOM LINE: This excellent, all-purpose system for serious power users includes vast storage and dual 22-inch LCDs.			
9 Polywell Poly P3503-3DT \$2895 find.pcworld.com/58187	77 GOOD	• WorldBench 6 score: 108 • WorldBench 6 rating: Good • Overall design: Good • Graphics: Very Good	• 3-GHz Core 2 Extreme QX650 • 850GB (RAID) drive capacity • 22-inch KDS 2200W LCD • 768MB nVidia GeForce 8800
BOTTOM LINE: Liquid-cooled desktop PC is well loaded, but isn't as fast as other models with the same quad-core CPU.			
10 Cerise Computers Cerise Quad Core Workstation \$3629 NEW find.pcworld.com/61322	75 GOOD	• WorldBench 6 score: 113 • WorldBench 6 rating: Very Good • Overall design: Superior • Graphics: Poor	• 2.66-GHz Core 2 Quad Q6700 • 2TB drive capacity • 19-inch Samsung SyncMaster 953BW LCD • 256MB nVidia GeForce 8600 GT
BOTTOM LINE: Cerise Computers has built one of the most nicely designed and largest-capacity PCs we've tested.			
CHART NOTES: Prices and ratings are as of 8/8/08.			

What a day...



...I managed to store 21GB of anaconda photos before being stuffed into a backpack with camera lenses and water bottles. Then I got manhandled by spider monkeys under a Brazil nut tree. Later, an MP3 player drowned crossing Río Apurímac—luckily, I have her 80GB music library backed up.

Storage provisions at 350GB—plenty for Machu Picchu tomorrow. Then, the Amazon.

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Apple's MobileMe Will Bug Windows Users

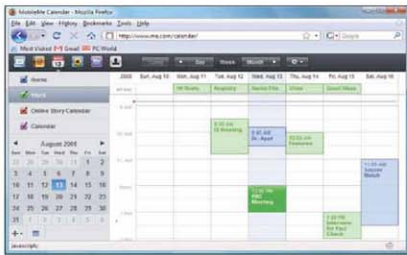
TO COINCIDE with the release of its iPhone 3G, Apple overhauled its Mac-centric .Mac service and renamed it MobileMe. Aside from the name rebranding, the service introduces one notable feature: the ability to sync with iPhones, iPods, and PCs.

Unfortunately, MobileMe

also arrived with about 70 new bugs, many of which are unresolved as of this writing.

If you're a Mac user with an existing .Mac account, moving to MobileMe won't take much adjusting. Syncing iCal calendars and bookmarks, and connecting two Macs via Back To My Mac, work as they always have.

On a PC, however, it's a different story. MobileMe's Windows support focuses almost entirely on Microsoft Outlook. If you just want to sync events to Vista's built-in Windows Calendar, forget it. That omission wouldn't



APPLE'S MOBILEME service is buggy, but its attractive and intuitive user interface upholds Apple's reputation for slick software design.

be so objectionable if Outlook syncing worked smoothly, but it doesn't. Instead, I received frequent error messages informing me that MobileMe's Sync Server had stopped working, along with a vague message directing me to the MobileMe control panel, which offered no fur-

ther help. Still, my calendar events consistently migrated from Outlook to iPhone and iPod and Mac, and back.

It's difficult to justify the \$99 yearly subscription fee for such a half-baked syncing tool. MobileMe is no bargain for Windows users.

—Robert Strohmer

65
FAIR

MobileMe | Apple

Updated syncing service is a disappointment for PC users. List: \$99
find.pcworld.com/61401

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Speed Meter Pro Treats Home-Network Woes

LIKE MOST other computer owners in the world, you've probably become a network administrator by default, forced to handle the myriad problems that can bedevil your home network or small-office network. Pure Networks' Speed Meter Pro, a

\$40 application, can help you do the job—but only to a point. Speed Meter Pro focuses on network slowdowns and ignores other issues such as IP woes, making it only a partial salve.

Still, it does what it does exceptionally well. The app creates a map that shows every device on your network. It also scans your PC and the network for problems, such as too many devices trying to use the network at the same time, and then suggests solutions.

Unfortunately, Speed Meter Pro won't detect and



SPEED METER PRO automatically creates a map that shows every device on your home or small-office network, including your router.

resolve problems related to printer sharing, IP conflicts, and network setup. For that, Pure Networks has a companion product called Network Magic. You can buy the two in a \$65 bundle.

The bottom line? Speed

Meter Pro does a fine job of analyzing home-network bottlenecks, but it doesn't do enough else to justify the \$40 asking price. For a full network-troubleshooting package, buy the \$65 combo.

—Preston Gralla

79
GOOD

Speed Meter Pro | Pure Networks
Utility lacks the tools to be a full-blown networking troubleshooter.
List: \$40
www.purenetworks.com

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R-Tools again strengthens and extends its line of world-class utilities and solutions

Neither your business nor the business world stands still. That's why R-Tools, the leader in world-class data recovery solutions, has once again beefed up R-Studio, its Vista-ready utility that allows users to preview file types before recovery.

Branching out from the Microsoft world, the latest improvement is **R-Studio for the Apple Macintosh**. This versatile solution can be installed on the Macintosh OS X, specifically on versions 10.4 and 10.5.

Other recent improvements to R-Studio have included a sorting algorithm that allows the sorting files according to file type, time of creation, file size and so on. R-Studio was also recently enhanced with HFS and HFS+ file systems support, UFS/BigEndian support, GPT partition layout schema support and Apple

partition map support.

In addition, R-Tools has announced improvements to **R-Wipe & Clean**, which automatically keeps applications free and clear of harmful clutter. This innovative utility now supports the latest versions of Mozilla Firefox and Opera.

And that's not all. R-Tools has unwrapped a new product called **R-Disk Encryption**. This utility allows users to quickly and easily create a virtual encrypted disk on any hard drive, including network drives, or on any removable media.

R-Tools' recent enhancements to **R-Drive Image**, which gives users mission-critical capability to totally restore their systems after a major



crash, included support for backup sets so that full/differential archives can be created with the same file names while old archives are deleted when specified conditions are exceeded. R-Drive Image can now create an image of a hard drive without any partition.

Other stellar solutions from R-Tools include **R-Mail for Outlook** and **R-Mail for Outlook Express**, which reconstruct inadvertently deleted email messages or damaged .pst and .dbx files. And **R-Word** and **R-Excel** recover damaged Word or Excel files that have been corrupted or attacked.

To learn more about R-Tools business continuity solutions, visit www.rtt.com.

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Sony's Wide-Screen Wunderkind Debuts

TWO NOTEBOOKS sport-

PCW Test Center ing Intel's Centrino 2 CPU crash our

Top 10 All-Purpose Laptops lineup. The mighty Micro Express JFL9226 claims top honors. Boasting 3GB of RAM and a 2.53-GHz Centrino 2 T9400 processor, it whipped through WorldBench 6 tests, scoring 103. Meanwhile, Sony's striking VAIO VGN-FW198U/H, the other newcomer with the same CPU, posted a solid 94 on WorldBench 6. You'll love gazing into its gorgeous 16.4-inch, 1600-by-



SONY'S FW198U/H has one big thing going for it: the screen.

900-resolution wide-screen display. Stretched to a 16:9 aspect ratio, it's perfect for viewing Blu-ray discs—or documents side-by-side. The only head-scratchers: This \$1750 entertainment laptop has a measly battery life of 2 hours, 32 minutes, and underwhelming speakers. Keep some headphones and batteries handy.

—Darren Gladstone

MORE ONLINE

Visit our Laptops Info Center (find.pcworld.com/61424) for the latest reviews and reports on mobile computing.

PC WORLD TOP 10 ALL-PURPOSE LAPTOPS

MODEL	PCW Rating	Performance	Features and specifications
1 BEST BUY Micro Express JFL9226 \$1299 NEW find.pcworld.com/61313	84 VERY GOOD	<ul style="list-style-type: none"> WorldBench 6 score: 103 Superior Overall design: Good Tested battery life: 4:25 	<ul style="list-style-type: none"> 2.53-GHz Core 2 Duo T9400 15.4-inch wide screen 6.6 pounds DVD-R DL/DVD-RW
BOTTOM LINE: The JFL9226 cuts most of the right corners to produce a budget-friendly speedster. It just needs a face-lift.			
2 Lenovo IdeaPad Y510 \$830 find.pcworld.com/60635	83 VERY GOOD	<ul style="list-style-type: none"> WorldBench 6 score: 70 Fair Overall design: Very Good Tested battery life: 3:42 	<ul style="list-style-type: none"> 1.66-GHz Core 2 Duo T5450 15.4-inch wide screen 6.3 pounds DVD-R DL/DVD-RW-RAM
BOTTOM LINE: Well-built laptop provides middle-of-the-road performance and a sizable hard disk for a good price.			
3 Acer Aspire 5920-6954 \$999 find.pcworld.com/58990	82 VERY GOOD	<ul style="list-style-type: none"> WorldBench 6 score: 70 Fair Overall design: Very Good Tested battery life: 3:52 	<ul style="list-style-type: none"> 1.66-GHz Core 2 Duo T5450 15.4-inch wide screen 7.2 pounds HD DVD-ROM
BOTTOM LINE: Fairly powerful laptop has dedicated nVidia graphics, HDMI output, and an HD DVD reader.			
4 Lenovo ThinkPad R61 \$1184 find.pcworld.com/57905	81 VERY GOOD	<ul style="list-style-type: none"> WorldBench 6 score: 80 Good Overall design: Very Good Tested battery life: 3:19 	<ul style="list-style-type: none"> 2.2-GHz Core 2 Duo T7500 14.1-inch wide screen 5.8 pounds DVD-R DL/DVD-RW-RAM
BOTTOM LINE: The R61's slim size, light weight, and keyboard illumination make it ideal for taking along on the road.			
5 Fujitsu Lifebook A6120 \$999 find.pcworld.com/60625	80 VERY GOOD	<ul style="list-style-type: none"> WorldBench 6 score: 84 Very Good Overall design: Good Tested battery life: 2:36 	<ul style="list-style-type: none"> 2.10-GHz Core 2 Duo T8100 15.3-inch wide screen 6.3 pounds DVD-R DL/DVD-RW-RAM
BOTTOM LINE: Feature-packed notebook includes plenty of inputs, but battery life was far from great.			
6 Dell XPS M1330 \$1823 find.pcworld.com/58777	76 GOOD	<ul style="list-style-type: none"> WorldBench 6 score: 82 Very Good Overall design: Very Good Tested battery life: 4:53 	<ul style="list-style-type: none"> 2.2-GHz Core 2 Duo T7500 13.3-inch wide screen 4.7 pounds DVD-R DL/DVD-RW-RAM
BOTTOM LINE: Good-looking portable weighs less than 5 pounds and is jazzed up with a color lid and other features.			
7 Sony VAIO VGN-FW198U/H \$1750 NEW find.pcworld.com/61314	75 GOOD	<ul style="list-style-type: none"> WorldBench 6 score: 94 Superior Overall design: Good Tested battery life: 2:32 	<ul style="list-style-type: none"> 2.53-GHz Core 2 Duo T9400 16.4-inch wide screen 6.4 pounds BD-RE/BD-R DL
BOTTOM LINE: This laptop's unusually wide, bright screen is good for working on side-by-side documents or watching movies.			
8 Sony VAIO VGN-FZ180E/B \$1850 find.pcworld.com/57907	71 GOOD	<ul style="list-style-type: none"> WorldBench 6 score: 75 Good Overall design: Good Tested battery life: 4:28 	<ul style="list-style-type: none"> 2-GHz Core 2 Duo T7300 15.4-inch wide screen 5.7 pounds BD-RE/BD-R
BOTTOM LINE: Midsize notebook with a nice screen and a Blu-ray Disc drive delivered great performance and long battery life.			
9 Sony VAIO VGN-SZ791N \$2500 find.pcworld.com/60627	70 GOOD	<ul style="list-style-type: none"> WorldBench 6 score: 94 Superior Overall design: Good Tested battery life: 3:50 	<ul style="list-style-type: none"> 2.5-GHz Core 2 Duo T8300 14.1-inch wide screen 4.0 pounds DVD-R DL/DVD-RW-RAM
BOTTOM LINE: Stylish but pricey Sony has dedicated graphics and turned in superior overall performance.			
10 Fujitsu Lifebook S6510 \$2169 find.pcworld.com/61430	69 FAIR	<ul style="list-style-type: none"> WorldBench 6 score: 74 Good Overall design: Good Tested battery life: 3:44 	<ul style="list-style-type: none"> 2.4-GHz Core 2 Duo T7700 14.1-inch wide screen 3.8 pounds DVD-R DL/DVD-RW-RAM
BOTTOM LINE: Light, travel-friendly unit comes with a big screen and a modular bay for using two batteries at once.			

CHART NOTES: Prices and ratings are as of 8/8/08. Weight does not include AC adapter, power cord, docking station, or extra batteries.

Lightroom 2: Nearly a Full Digital Darkroom

A PHOTO organizer and an impressive photo editor in one package, Adobe's \$299 Photoshop Lightroom 2 adds new editing tools while keeping things simple, further reducing the need to jump over to Photoshop. The interface looks much the same as before, but Adobe has made many workflow improvements; for example, searching is now quicker and more customizable.

Lightroom's strength lies as much in its ability to process images as in its ability to help users organize and keep track of their growing collection of photos. The Library Filter gets a makeover in Lightroom 2, moving to the top of the screen and allowing searches by metadata such as caption, date shot, location, and lens or camera used, as well as by

keyword. Adobe throws in a handy keyword suggester that offers keywords based on when you imported a batch of photos and their subject matter. Another convenience: You can now rate and sort images whether you're in Library, Print, or Slideshow mode; this accelerates the sorting process as you view and share images.

Printing, the Slideshow, and Web output are all improved in Lightroom 2. In the Print module, you can drag and drop images onto a grid, tell Lightroom whether and by how much you want it to sharpen each one, and then print your customized sheets. Web output offers similar sharpening choices. Meanwhile, the Slideshow has added color chips that you can employ to create a custom-tinted background.



THE EXCELLENT GRADUATED filter tool lets you fix an overexposed sky; you simply select the horizon line and manipulate sliders.

The nondestructive editing feature from Lightroom version 1 returns, as does Lightroom's easy relationship with Adobe Photoshop. When using Photoshop CS3, however, you don't have to export your images as TIFFs or PSDs anymore; Photoshop will open them regardless of their format, so you can edit a photo and then send it back to Lightroom without altering the original file.

Lightroom's new editing features permit photographers to make quick touch-ups and exposure adjustments and apply them to a single image or across multiple pictures. As a result, you can now make certain fixes that you want to apply prior to presentation—such as cropping, graduated filtration, and adjustments to selected parts of an image—part of your initial workflow before doing the final retouching in Photoshop.

The program's new Post-Crop lens correction will work on a picture that you have already cropped, using its new dimensions and ignoring the edges of the original

image. This way, you generate an authentic, symmetrical vignetting effect. You can manipulate lens-correction settings to lighten or darken the edges of your photo, fading to white or black at the most dramatic extremes, to produce interesting effects.

Lightroom 2 adds masking to its array of editing tools as well. You can change the size, flow, and feathering of your brush to apply a mask, and then edit only the parts of the photo that need targeting.

Lightroom remains the program to beat for image processing and organization. The new, creative editing tools that are included with Lightroom 2 make it a must-have upgrade by themselves.

—Kathleen Cullen



Photoshop Lightroom 2 | Adobe
New features make it a must-have photo organizer and image editor.
List: \$299
find.pcworld.com/61405

ASK OUR EXPERTS

Backing Up Protected Files

I WANT TO back up my password-protected folders. I have tried various password-protect programs to safeguard my data. But most such utilities make those folders "invisible" to my regular backup app, so they don't get backed up. Can you help me?

Jaime Monteleone, via e-mail

Contributing Editor Jon L. Jacobi responds: If you use Windows' encryption, a program like Retrospect (\$130) will back up everything on your hard drive—hidden or not. But if your third-party security app hides the file from Windows, it may not be backed up. Imaging backup software, such as Acronis True Image or R-Drive Image, backs up drive partitions sector-by-sector. Those programs will work, but you'll have to restore the partition—and in some cases, the security app—to access encrypted files.

E-mail your questions to askourexperts@pcworld.com, or post them online at forums.pcworld.com.

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When purchasing a laptop you want to maximize for as long as possible.

HP's Portable Snapshot Printer Is Simple, Speedy

PCW Test Center **WARE:** HP's new Photosmart A636 Compact Photo Printer sets a high standard—and rewards impatient, on-the-go users. This midpriced inkjet-based model is fast: 4-by-6-

inch photos came out in less than a minute; other snapshot printers we've tested took almost twice as long. Most colors looked realistic, with good detail except in dark areas. My only gripe: Flesh tones appeared a bit orange, and monochrome photos had a pink tinge.

In connecting this printer to a computer, you must provide your own USB cable (HP doesn't include one), but the driver, stored in the printer's firmware, automatically installs itself. No computer? No problem: Insert a media card into one of the



HP's A636 is equipped with a boombox-style carrying handle.

A636's many slots to start.

Printing options include captions, clip art, frames, and effects such as sepia toning and cartooning; you also get simple editing tools. The printer takes an unusually wide range of media sizes, from 4-by-6-inch photos to panoramic (4-by-12-inch) to 5-by-7-inch.

A few of the Photosmart A636's controls perplexed me (for example, lowering the LCD is difficult), but overall it was easy to use.

And a little confession: I actually missed this versatile printer after testing it.

—Melissa Riofrio

84
VERY GOOD

Photosmart A636 Compact Photo Printer | HP

Despite its shortcomings, this swift snapshot printer is lots of fun. List: \$149

find.pcworld.com/61406

PHOTOGRAPH: MARC SIMON

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Discover the Fascinating and Elusive Patterns in Numbers

Let an Award-Winning Professor Be Your Guide in *An Introduction to Number Theory*

Given the product of two numbers, as well as the difference between them, how do you determine the sum of their squares? How do networked computers "talk" to each other? What is the Golden Ratio, and what does it reveal about the relationship among numbers? These are just a few of the puzzles you will encounter in the 24-lecture course, *An Introduction to Number Theory*.

Since antiquity, creative and curious people have tried to wrap their minds around the nomenclature of numbers. Called "the queen of mathematics" by the legendary mathematician Carl Friedrich Gauss, number theory is one of the oldest branches of pure mathematics. Nestled in the heart of number theory is a wealth of earth-shattering breakthroughs, such as public-key cryptography and open questions like the Riemann Hypothesis (a complete and correct proof of which is worth \$1 million!).

You Can Open a World of Numbers

Now is your chance to enter the world of tantalizing mysteries and elegant solutions. This course delves into the structure of numbers and examines mathematical conundrums that have intrigued humankind for millennia. With renowned mathematician Edward B. Burger as your guide, you'll explore the enigmatic prime numbers, discover the synergy between rational and irrational numbers, travel through algebraic and transcendental numbers, and take a peek at several modern areas of number theory.

The Thrill of Discovery is Yours

You will also witness the often exhilarating, sometimes heartbreaking process by which great thinkers devise ingenious mathematical proofs in their pursuit of new areas of knowledge. The history of mathematics is one of competition and collaboration, as scholars build upon the insights of their colleagues. In this course, this vibrant world comes to life, as Professor Burger recounts gripping tales of intellectual trailblazing, including the dramatic saga of Fermat's Last Theorem, a mathematical puzzle that remained unsolved for more than 350 years!

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Challenging and rewarding, *An Introduction to Number Theory* is perfect for anyone with a curiosity about numbers. While familiarity with basic mathematics is helpful, each lecture provides a conceptual overview, followed by a clear step-by-step explanation of all calculations and problem-solving methods.

About Your Professor

Edward B. Burger, Professor of Mathematics and Statistics at Williams College, earned his Ph.D. from The University of Texas at Austin. Professor Burger's teaching and scholarly works have been nationally recognized; most recently, Williams College awarded Professor Burger the 2007 Nelson Bushnell Prize for Scholarship and Teaching.

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7. The Classical Theory of Prime Numbers
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10. Division Algorithm and Modular Arithmetic
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Feature-Rich Casio Does YouTube, Too

PCW Test Center ABOUT THE SIZE of a credit card and just 0.5 inch thick, Casio's Exilim EX-Z80 can slide into a pocket with the ease of a phone. And at 8.1 megapixels, it produces decent 8-by-10-inch prints, with nice colors but a bit of blurriness.

79
GOOD

Exilim EX-Z80 | Casio

Low-cost camera offers creative modes and YouTube capabilities.

List: \$180

find.pcworld.com/61402

By forgoing a viewfinder and by relying on very small buttons elsewhere, Casio managed to fit an impressively large 2.6-inch LCD on the EX-Z80. But with the streamlined form comes a sacrifice: the Casio's miniature buttons nest very close together, and the handy dedicated video button is so close to the top right corner that a clumsy dip at the end of each clip became a signature motif of my video work.

One feature that Casio seems especially proud of is the camera's YouTube video capability. In that mode, the



ENCASED IN A combination of sleek brushed metal and matching faux-metal plastic, the EX-Z80 is available in a variety of colors.

EX-Z80 records .mov files in YouTube's preferred H.264 format, optimized for online viewing. The software even includes a special YouTube video uploader. By and large, my movies came out quite well, particularly at the higher quality settings.

Alas, as with most sub-

\$200 cameras, you don't get crystal-clear optics. Color was very good, but shots lost focus on the outer edges.

Its drawbacks notwithstanding, the Casio Exilim EX-Z80 is a solid little snapper that delivers a slew of worthwhile features.

—Kathleen Cullen

PHOTOGRAPH: MARC SIMON

PHOTOGRAPH: MARC SIMON

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Unusual, Eco-Friendly Hard Drive Debuts

SIMPLETECH'S high-flying

PCW Test Center

Duo Pro Drive stays atop our external hard drives chart.

The real news, however, involves the company's ninth-ranked ReDrive. This 500GB model took more than twice as long as the Duo Pro to copy our file set. But the ReDrive gains points for eco-friendliness, inside and out. The device uses a Western Digital Green Power drive inside, comes with a bamboo finish on the outside, and has attractively stepped heat sinks along the sides (and no fans) to dissipate heat.



THE REDRIVE HAS a bamboo top, and heat sinks on its sides.

This month we also tested Western Digital's 2TB My Book Mirror Edition, the Iomega eGo 1TB, and Hamster Storage's Morespace (another 1TB drive), none of which made the cut. The \$550 My Book, the most interesting of these, comes preconfigured as 1TB of mirrored storage; unfortunately, it was a slow performer.

—Melissa J. Perenson

MORE ONLINE

To see full reviews, complete specs, and latest prices for the hard drives we've tested, visit find.pcworld.com/61399.

PC WORLD TOP 10 EXTERNAL HARD DRIVES

MODEL	PCW Rating	Performance	Features and specifications
1 BEST BUY SimpleTech Duo Pro Drive \$299 find.pcworld.com/61398	86 VERY GOOD	• Overall performance: Superior • Copy files: 69 seconds • File search: 112 seconds	• 1000GB • 7200 rpm • External SATA-300, USB 2.0 • Cost per gigabyte: \$0.30
BOTTOM LINE: Terrific design, speedy performance, and versatile backup software make this drive a strong choice.			
2 Apricorn EZ Bus Desktop SATA \$169 find.pcworld.com/57139	82 VERY GOOD	• Overall performance: Superior • Copy files: 76 seconds • File search: 105 seconds	• 500GB • 7200 rpm • External SATA-300, USB 2.0 • Cost per gigabyte: \$0.34
BOTTOM LINE: This fast, inexpensive drive comes with three basic utilities for backup, file copy, and encryption.			
3 LaCie d2 Quadra \$200 find.pcworld.com/57127	81 VERY GOOD	• Overall performance: Superior • Copy files: 87 seconds • File search: 108 seconds	• 500GB • 7200 rpm • eSATA-150, USB 2.0, FireWire 800/400 • Cost per gigabyte: \$0.40
BOTTOM LINE: A slight price premium buys you the flexibility of USB, SATA, FireWire 400, and FireWire 800 data interfaces.			
4 Seagate FreeAgent Pro \$230 find.pcworld.com/56722	79 GOOD	• Overall performance: Good • Copy files: 80 seconds • File search: 114 seconds	• 750GB • 7200 rpm • External SATA-300, USB 2.0 • Cost per gigabyte: \$0.31
BOTTOM LINE: An eye-catching design, coupled with a useful, well-rounded software set, differentiates the FreeAgent Pro.			
5 Western Digital My Book Home Edition \$300 find.pcworld.com/61397	79 GOOD	• Overall performance: Very Good • Copy files: 83 seconds • File search: 118 seconds	• 1000GB • 7200 rpm • eSATA-300, USB 2.0, FireWire 400 • Cost per gigabyte: \$0.30
BOTTOM LINE: Though reasonably priced for a single 1TB drive, this model is a slower performer than some of its competitors.			
6 Maxtor OneTouch III Turbo Edition \$550 find.pcworld.com/52089	76 GOOD	• Overall performance: Very Good • Copy files: 91 seconds • File search: 110 seconds	• 1500GB • 7200 rpm • USB 2.0, FireWire 800/400 • Cost per gigabyte: \$0.37
BOTTOM LINE: This model's performance and backup software are impressive, but its drives are not readily accessible.			
7 WiebeTech ToughTech FS \$206 find.pcworld.com/61396	76 GOOD	• Overall performance: Very Good • Copy files: 85 seconds • File search: 104 seconds	• 500GB • 7200 rpm • eSATA-300, USB 2.0, FireWire 400 • Cost per gigabyte: \$0.61
BOTTOM LINE: The speedy ToughTech comes in a sleek, accessible (via tools) chassis, but you don't get any bundled software.			
8 CMS Products ITB Velocity2 Series Backup System \$711 find.pcworld.com/61395	76 GOOD	• Overall performance: Superior • Copy files: 71 seconds • File search: 100 seconds	• 1000GB • 7200 rpm • External SATA-300, USB 2.0 • Cost per gigabyte: \$0.71
BOTTOM LINE: This top-flight performer provides a software/hardware combination for creating a bootable backup drive.			
9 SimpleTech ReDrive \$160 NEW find.pcworld.com/61394	71 GOOD	• Overall performance: Poor • Copy files: 146 seconds • File search: 107 seconds	• 500GB • 5400 rpm • USB 2.0 • Cost per gigabyte: \$0.32
BOTTOM LINE: An elegant, original, and ecologically friendly design inside and out highlights this external hard drive.			
10 Seagate Maxtor One-Touch IV Plus \$175 find.pcworld.com/61393	71 GOOD	• Overall performance: Poor • Copy files: 135 seconds • File search: 107 seconds	• 500GB • 7200 rpm • USB 2.0, FireWire 400 • Cost per gigabyte: \$0.35
BOTTOM LINE: Slow performer lacks an eSATA interface, but its integrated backup software makes one-touch backups easy.			
CHART NOTES: Prices and rankings are as of 7/2/08.			



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Two Scanners Take Aim at Different Targets

THE EPSON WorkForce GT-1500 and the Plustek OpticBook 4600 are 48-bit USB color flatbed scanners that install easily and can digitize documents, books, and photos. But the two models differ considerably in their cost and in their primary aim.

The \$350 Epson comes equipped with a 40-page automatic document feeder (ADF) and is intended for multipage document scanning. The \$900 Plustek has no ADF but is designed to scan bound books without splitting their binding. Each model has some worthwhile features, but overall the Epson scanner impressed me more than the Plustek did.



THE PLUSTEK SCANNER (left) lacks an automated document feeder, but the Epson model has one.



The Epson WorkForce GT-1500 is a simplex (single-sided page) scanner with four customizable buttons (for scanning, printing, e-mailing, and making PDFs). Though it isn't as fast as pricier duplex models, the Epson is considerably swifter than the last simplex scanner I looked at, the \$300 Plustek SmartOffice PL806. The Ep-

son took 151 seconds to scan a 15-page, double-sided monochrome text document at 300 dots per inch—less than half the time (340 seconds) the PL806 took. The Epson also delivered sharp text and graphics, and demonstrated high optical character recognition accuracy: Using the bundled Abbyy FineReader Sprint 6.0, it yielded several 97 percent error-free documents.

Plustek's OpticBook 4600 even outpaced the Epson at scanning individual color and monochrome pages. It took a scant 9.3 seconds to scan a one-page color document at 300 dpi, versus 21 seconds for the Epson. But because it doesn't have an ADF, the Plustek can't automatically scan multipage documents, which makes it less versatile.

When it comes to scanning books, the Plustek has a definite advantage. The scanning glass on one side of the Plustek's length is right next to the scanner's edge, so you can place one side of an open book completely flat on the glass. This unusual design lets you scan book pages without picking up any shadows or text distortion near the book spine.

The Plustek's OCR capabilities (when using ReadIris

Pro 10 Corporate) translated into consistently outstanding results—an accuracy rate of about 99 percent—in both word-processing and spreadsheet formats. But when used to create searchable PDFs, it achieved clean results only when I manually (and laboriously) used the scanning software to preview, crop, and rotate (when necessary) each page that I scanned.

I can recommend the Epson WorkForce GT-1500 to anyone who needs a simple document scanner. The Plustek's value will be greatest for people who need its book-scanning capabilities.

—Richard Jantz

Listen to the Internet on Your Alarm Clock

AT FIRST GLANCE, Aluratek's Internet Radio Alarm Clock With Built-in Wi-Fi looks like an ordinary alarm clock. Unlike a run-of-the-mill clock, however, it connects to your home network to access more than 11,000 channels of Internet radio, and it can also connect to a library of tunes on your PC.



THE ALURATEK RADIO includes a remote control.

Sound is decent but a bit tinny—as you'd expect from an alarm clock. True audiophiles may be disappointed.

Still, this radio is fun to use. If you're bored with the offerings on your FM radio, the Aluratek Internet Radio Alarm Clock can expand your musical options.

—Liane Cassaway

83
VERY GOOD

Internet Radio Alarm Clock With Built-in Wi-Fi | Aluratek

A convenient way to expand your musical horizons. List: \$200
<http://www.aluratek.com>

80
VERY GOOD

WorkForce GT-1500 | Epson

Versatile scanner handles multipage documents and photos fast. Price: \$350

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76
GOOD

OpticBook 4600 | Plustek

Premium-priced book scanner falls short on its automated features. Price: \$900

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Snagit 9 Is a Winner

THE BEST screen-capture program just got better. Snagit version 9 keeps all of its predecessor's basics (it can capture your entire desktop, portions of it, scrolling Web pages, and even short videos) and adds new tricks.

A thumbnail organizer shows recent captures and lets you save them, organize them, and tag them for easy finding. You can search by other data, too, such as the date or size of the capture.



SNAGIT 9 MAKES it easy to save, tag, and find images.

Combining multiple images is a breeze, and the utility's revamped interface makes annotating images a snap.

If you haven't used Snagit and need to capture screens, give it a try. Long-time users will want this upgrade.

—Preston Gralla



Snagit 9 | TechSmith

The best screen capture program we've found is now even better. List: \$50

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DOWNLOAD THIS LAURA BLACKWELL

Alternative Desktop Realities

YOU WANT TO live in harmony with your PC, but Windows is very rigid. Here are three remedies: a clever launching dock, a folder organizer, and a far-reaching macro program.

Pull Your Programs Into Dock

If you are looking for a visual way to launch programs and open folders, try Circle Dock. This handsome freebie makes these tasks blissfully convenient.

Circle Dock's default shape is a set of concentric circles, but you can make it take the form of a spiral. It comes pre-stocked with icons for common tasks and locations (launching the default browser, opening Control Panel, and so on), and you can drag and drop your own folder and program icons. Personalize the look with included skins or icons you create.

The first release of Circle Dock is a little rough around the edges visually, and I occasionally found the launching key combination unresponsive on my Windows XP machine. But developer Eric Wong promises fixes and new features. Free/donationware, find.pcworld.com/61337.

Folders at Your Fingertips

Are folders tying you in knots? This freebie places virtual tabs along the edge of your screen so you can quickly nab files you need.

Creating tabs is a snap with Stick's Tab Manager, reachable with a right-click of Stick's glue-bottle System Tray icon. I created what Stick calls Navigator Tabs for my heavily used folders, then tweaked the settings (autohide, autoshow, and the like) to minimize mousing. In short order, tabs for my most important folders were neatly lined up and ready to spring open with a mere mouseover.

Stick's installation invites you to add Stick plug-ins of bare-bones utilities from creator iWonder Designs; choices include a calculator, a calendar, an RSS reader, and more. Unlike many desktop utilities, Stick doesn't launch programs or run command-line utilities. It just lays out your folders for you. If that's all you need, Stick is certainly worth a look. Free/donationware, find.pcworld.com/61338.

Click Less With ActiveWord

If you do the same things at your PC every day, you probably waste time and energy retyping and needlessly clicking. ActiveWords Plus (\$50) addresses the problem with a feature-rich, easy-to-use keystroke macro utility.

ActiveWords is both simple and powerful,



CIRCLE DOCK ARRANGES your desktop icons either in an elegant spiral or in concentric circles.

and it works with every program. An ActiveWord (which is what the program calls its commands) can do anything from typing your address to opening a specific Web page or filtering Outlook e-mail for a word in the header. You decide what to call the tasks—"ff" to launch Firefox, for example. The utility's Add Wizard helps you create actions in a few efficient steps, without jargon. To use an ActiveWord, simply type it in wherever you are, and hit the execution hotkey (<F8> is the default).

ActiveWords Plus's many options include the Spacebar-Spacebar Trigger, which initiates actions with two taps of the spacebar (much faster than hunting in function-key Siberia). Vendor ActiveWord Systems offers free macros for apps (for example, to create a table in Microsoft Word quickly) and common types.

ActiveWords Plus's generous license lets you install the program on all your PCs. Register to extend the free trial from 5 to 60 days. Free trial, \$50 to keep, find.pcworld.com/61339.



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Six-Month Rating: 9.70 / 10

As Of August 31, 2009
Six-Month Business Q3
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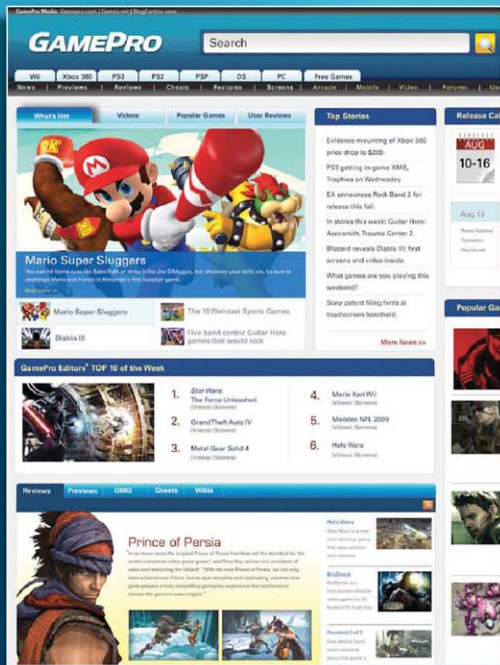
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PROVANTAGE



HACK YOUR

Hardware

Want to get more out of your desktop PC, cell phone, Wi-Fi network, and other devices? **Our hands-on guide** shows you how to make your tech **gear faster, more powerful,** and more versatile than ever.

BY ZACK STERN

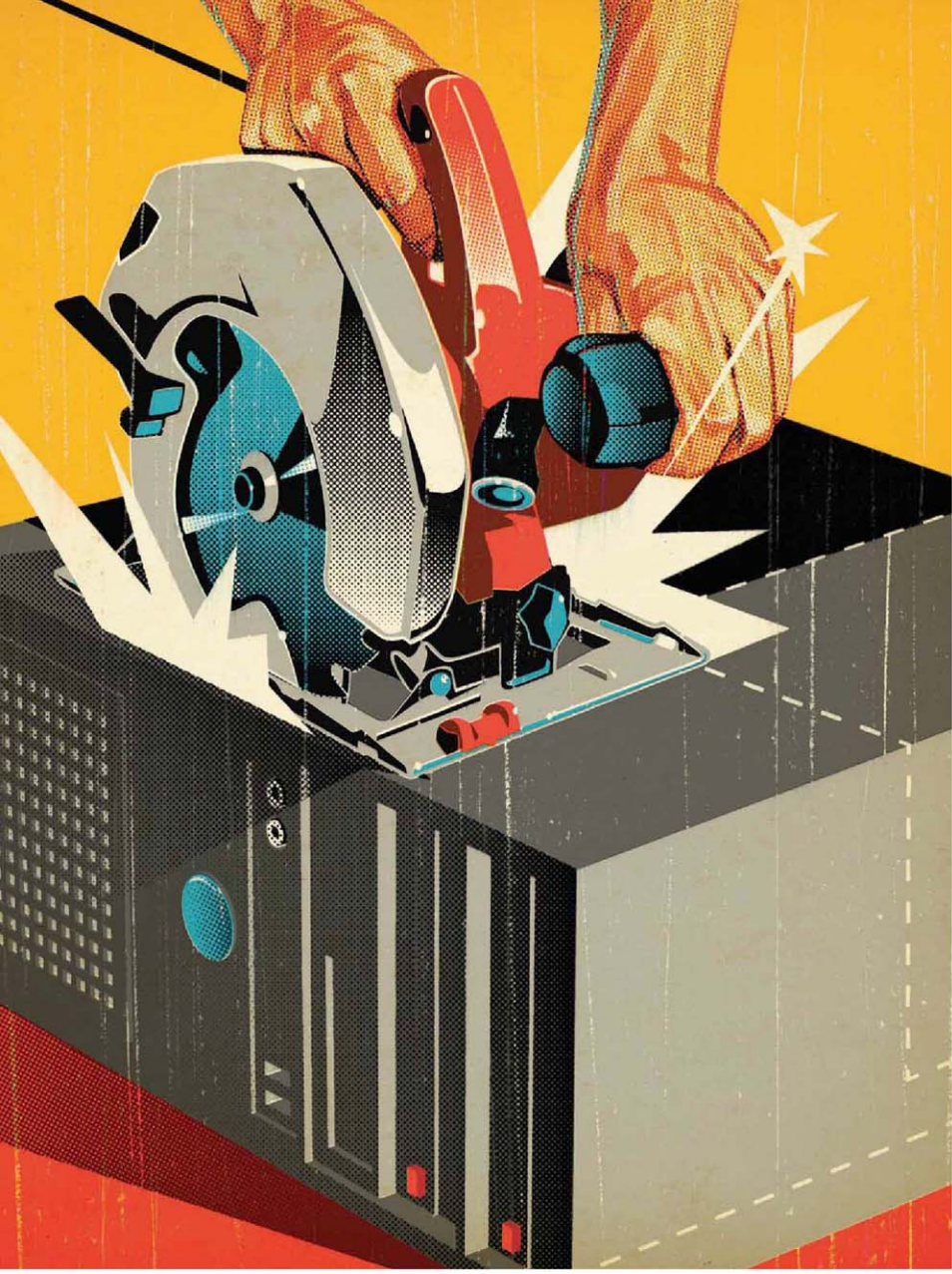
ILLUSTRATION BY TAVIS COBURN

HACKING ISN'T JUST FOR GEEKS ANYMORE.

In this era of ubiquitous gadgetry and free information, anyone with a screwdriver can do a little

unauthorized tinkering. Sure, the word *hacking* has negative connotations. But hacking is really about being a do-it-yourselfer. That means opening a Web browser rather than your wallet to get more functionality from the products you own.

The following pages are loaded with hacks that will help you wring more power out of the devices you use every day. Without spending a dime, you can increase your Wi-Fi range, unlock your iPhone, or upgrade a digital camera. You can also save big bucks by forgoing high-end extras and adding an off-the-shelf hard drive to your TiVo or Xbox 360, or by making tweaks to get more speed from your current PC. »



Overclock Your System's CPU

Difficulty: Moderate **Time:** 10 minutes to an afternoon

With a bit of effort, you may be able to ratchet up your system's speed by 10 percent or more. Most CPUs ship with clock speeds set below their maximum possible settings, and they often provide a method for increasing that speed. Overclocking isn't very dangerous to your PC or difficult to do, but it'll likely void your warranty.

While some off-the-shelf PCs can be overclocked, many can't; give yours a shot to see if it can. If your PC supports overclocking, you can bump up the speed in minutes. But to obtain the best performance and stability, set aside an afternoon to test different settings.

Begin by gathering information. Look up your motherboard model, download

its manual, and update its BIOS to the latest version. The maker of your motherboard likely offers an overclocking utility that you can run within Windows, but if you choose this method, the utility may need to launch within Windows upon every boot. Alternatively you can adjust settings directly in the BIOS; this approach will keep the system

settings by pressing <Delete> or <F1> as the system is booting; the PC's splash screen will likely prompt you. A reset, however, might require physically changing a jumper switch or pressing a button on the motherboard. Don't proceed without discovering this escape route; otherwise, you could lock up the computer without knowing how to get back to the BIOS.

Additionally, research your CPU model online—you will likely find its part number listed

in the BIOS—and record the temperature range that it supports. Successful overclocking requires that you

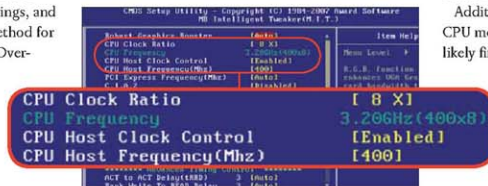
compromise between performance

and heat; if the CPU grows too hot, the PC will crash. Check the temperature in the BIOS as you progress.

Sometimes the BIOS can overclock the CPU dynamically for you, through an "AI" mode. If you have this option, it's all you need to use. But in most cases you tweak the CPU speed by adjusting the frontside-bus speed settings. Within the BIOS, raise that value by 5-MHz or 10-MHz increments, save the changes, and then reboot.

If your PC fails to boot completely—that is, into Windows—go back into the BIOS and return the bus speed to the previous setting. If it does boot successfully, restart it and repeat the process, incrementally raising the bus speed again. After you've made a few increases, run Prime95 (find.pcworld.com/61412) for about a half hour to exercise the CPU. If the system remains stable as this prime-number-generating software taxes the processor, continue to raise the frontside-bus speed slowly.

If you notice performance problems and crashes, or if the CPU becomes too hot, back off the speed until you discover a stable setting. Consider upgrading your CPU's heat sink to keep it cool; a heavier heat sink can allow you to raise the bus speed a bit more.



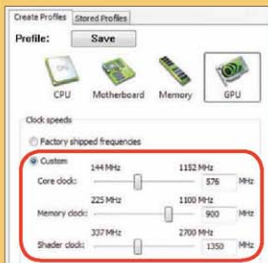
IN THE BIOS, adjust 'CPU Clock Ratio' or 'CPU Multiplier' to speed things up.

tuned until you change the settings again.

Next, figure out how to access the BIOS and reset the machine to its

default configuration if the upgrade becomes unstable (symptoms of which include application crashes and system freezes). Typically you enter the BIOS

Overclock Your Graphics Board



THE NVIDIA Control Panel lets you use sliders to adjust the GPU speed.

Difficulty: Easy **Time:** 60 minutes

ATI and NVIDIA each offer free tools to overclock some of their higher-end video cards. This tweak doesn't require any BIOS tuning and can boost your system's graphics performance. Gamers will see smoother video as a result of the faster speed. Update your graphics board's drivers before you begin.

In the NVIDIA Control Panel, click *Device settings* under *Performance*. Click *GPU*, select *Custom*, and raise the clock speed by moving the slider, testing the results each time for glitches.

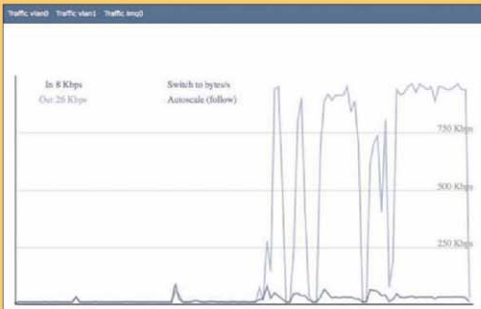
For ATI cards, launch the Catalyst Control Panel. Click *Auto-Tune* in the *Overdrive* section. This option gradually increases the clock speed and tests each one in sequence. When it detects instability, it backs off, settling on the previous rate.

Add Advanced Features to Your Wireless Router

Difficulty: Moderate **Time:** 45 minutes

Your wireless network may be growing, but that doesn't necessarily mean you need to purchase new networking hardware. As your network expands, you can use third-party firmware to add features to your existing wireless router, matching or (in many instances) exceeding the abilities of a new device. With this hack, you can boost antenna power, configure a repeater to blanket a bigger Wi-Fi area, improve your wireless security, isolate Wi-Fi traffic from your wired network, set up a VPN, and much more.

The X-Wrt firmware (x-wrt.org) supports many Asus, Buffalo, Linksys, and other routers; check the Web site to see whether yours is listed. (If you don't see yours, search online for "your router model firmware hack," in case a similar hack could work for your device.)



X-WRT'S GRAPHS
tab shows you real-time network traffic statistics.

Connect the router directly to your PC, using an ethernet cable, and log in to the router's configuration page. Check for a system settings menu and scan it for a firmware option. Use the buttons there to select the new firmware file and upload it to the router. Don't unplug the router before the update finishes, or you'll risk permanently damaging the hardware. The process can take up to 15 minutes.

After the update is complete and the router restarts, use your browser to reconnect. The X-Wrt interface will replace the default

design, prompting you to set a new password. You can now reestablish your wireless connection, but it's best to perform most management tasks through ethernet.

In the updated firmware menus, change your broadcast power by clicking **Network > Advanced Wireless Settings > Transmit power**. Tune the number upward to reach longer distances or downward to keep the network from spilling over to neighbors' houses. Under **Network > QoS**, enable the default quality-of-service settings that give certain peer-to-peer programs less priority, so you'll always have the most possible bandwidth for immediate tasks. Under the **Graphs** tab, you can see real-time charts that show bandwidth usage and other details. Be sure to click **Save Changes** on each page in the lower-right corner and click **Apply Changes** when you're ready to make an update. And if you ever want to go back to your stock firmware, download it from your router manufacturer and then upload it on the **System > Upgrade** page.

The modular nature of X-Wrt permits you to add and remove specific features. Click **System > Packages** to browse through other upgrade packages that you can add to the router. You don't have to use any of them, but their presence means that you might never outgrow your router. »

Boost Your Wi-Fi Network's Range With an Antenna Add-On

Difficulty: Easy **Time:** 45 minutes

Fitting a simple, passive, parabolic reflector around your antenna can focus the signal exactly where you want it. Your network will reach farther, and the addition can even improve your network security.

Download **Parabola Calculator** (find.pcworld.com/61371) to help you figure out the correct antenna shape. Enter a diameter and depth to represent the maximum size of reflector that your router's antenna(s) can physically accommodate. The software will create a table of points for you to plot onto graph paper. Cut out the inside of the parabola shape on two pieces of cardboard. Then cut a smooth piece of metal to serve as the reflector. Curve the metal into a U-shape around the guides, and glue it in place. Cut small holes into the guides at the focal point, and mount the reflector.

THESE HOMEMADE
antenna reflectors
help focus the signal
for better range.



Add Advanced Features to Your Digital Camera

Difficulty: Easy **Time:** 20 minutes

Unless your work requires maximum megapixels, the most meaningful differences between your old camera and a new one have less to do with image quality and more to do with features. Newer cameras and more-expensive models support the RAW format, let you set manual exposure times, shoot in burst mode, and perform other tricks—but with a simple firmware hack, you can add the same capabilities to older models that don't support them.

This hack works with many Canon point-and-shoot models. Intermediate and advanced photographers will grow into the high-end extras it provides, but even beginners will appreciate its quantitative battery meter and other features.

The camera's firmware usually governs all of the settings, but in this hack you'll use a separate utility to install a program onto an SD Card and override the camera's basic features. Canon does not support this sort of hacking; it isn't permanent, however, as the camera will fall back to its original state when you remove the SD Card. Before you get started, visit find.pcworld.com/61414 to see whether your camera is compatible.

Set the camera to Play mode and then turn it on. Hold the **Func Set** button, and press the **Disp** button. A window should identify your firmware; look for a number with a letter following it. For instance, my Canon SD870 IS displayed "Firmware Ver GM1.00C". With that information, you can identify the correct CHDK software for your camera.

Download and run Card Tricks (find.pcworld.com/61415), and insert an SD Card into a card reader connected to your PC. Within Card Tricks, click the **SD** icon, and select your card. Be sure to verify that the card size listed is the same as your memory card's, not a hard



THE CHDK firmware adds tons of new features to an aging Canon.

drive's or other device's. Click **Format as FAT**.

Click **Make Bootable**, and choose **Download CHDK**. A Web page should open, and it should prompt you to select your camera's model and firmware version. Save the zipped file to your PC's desktop without extracting it.

In Card Tricks, choose **CHDK->Card** and select the firmware file. The software will transfer the file to the card without unzipping it. Afterward, remove the card, slide the physical lock switch on it away from the metal connector, and pop it into your camera. (You'll still be able to record images.) When

you turn on the camera, you should see a brief splash screen indicating that CHDK is running. Now you can access features beyond the original specs.

The basic steps above will get you started. Read my more-thorough tutorial at find.pcworld.com/61428 for additional tips and instructions on using the CHDK tools with your camera.

Control Your Digital Camera With a Universal Remote

Difficulty: Easy **Time:** 1 hour

Many cameras, even point-and-shoots, support wireless remote controls, but camera makers charge a premium for those accessories. You can save some cash by using any universal TV remote with your remote-capable camera.

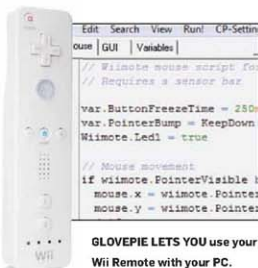
By coincidence, infrared command codes for certain electronics devices happen to overlap with the commands that trip your camera's shutter release. The trick is to figure out which VCR, TV, or other device matches your camera, and to set the universal remote to match. Look online to see whether someone has already tried this hack with your camera model. I found that my Canon Digital Rebel supports the same codes that control MGA VCRs.

If you don't find help for your camera, you can try scanning through the codes. Make sure that the camera has a memory card and is set to receive IR commands. (Often a mode or menu setting is involved.) As you go through the remote's options, verify that the camera stays awake and responsive. (Mine locked up once with a certain code

but was fine after I removed and reinserted the battery.) Push the remote buttons while attempting to control different electronics brands, and see if any fires the shutter.

THIS \$9 UNIVERSAL remote controls a Canon Digital Rebel camera just fine.





Use a PS3 or Wii Video Game Controller on Your PC

Difficulty: Easy **Time:** 10 minutes

If you have grown accustomed to your game console's controller, you may want to use it on your PC, too. Microsoft provides a driver for using its Xbox 360 controller on a computer (find.pcworld.com/61416), but Sony and Nintendo don't do the same for theirs. Fortunately, I've found a couple of utilities that can connect them to a computer.

For the Sony PlayStation 3 controller, download the Sixaxis driver at find.pcworld.com/61417. You'll also need an unpacker such as WinRAR (find.pcworld.com/61418) to extract the file. Install libusb-win32-filter-bin-0.1.10.1.exe, which is included in the Sixaxis download package. Connect the controller to a USB port with any mini-USB cable, and run `ps3sixaxis_en.exe`. If your PC doesn't recognize the controller, push the PS button on the controller's face.

You will have to keep the controller plugged in to your computer rather than using it wirelessly, but most games should recognize it. Enter the options menu within each game to map the controller buttons as necessary.

For the Wii Remote, you'll need a PC with Bluetooth. Open Windows' Blue-

Add Capacity to a 20GB Xbox 360

Difficulty: Hard **Time:** 90 minutes

Microsoft expects you to pay close to \$200 to upgrade your Xbox 360's hard drive from 20GB to 120GB. That's about \$150 more than a 120GB SATA drive actually costs. But with this slightly tricky hack, you can save a bundle while boosting your game console's storage capacity to hold more music, video, and other media files.

You'll need a DOS installation on a writable flash thumb drive for this hack. (The utility doesn't work under Windows, and you'll also be disconnecting your PC's hard drive.) First, grab a spare USB thumb drive and copy the HP Drive Key Boot Utility (find.pcworld.com/61421) to it. The utility is designed for HP flash drives, but it works on other types of flash drives, too. Also download and mount a DOS image file (find.pcworld.com/61422).

In Windows Vista, right-click the HP utility and run it as an administrator. Select the thumb drive, choose the FAT structure, click the *Create a DOS startup disk* checkbox, and pick the DOS files when prompted. Then download the DOS Xbox utility, HDDHackr (find.pcworld.com/61423), and copy it to the root level of the thumb drive.

This hack is designed to work with a specific drive, the 120GB Western Digital Scorpio, model number WD60WD1200BEVS. You'll be replacing the drive's native firmware with Xbox-recognized firmware. You can track down the firmware online by doing a search for "hddss.bin 120 Xbox 360." Place the hddss.bin file in the root of your DOS thumb drive.

With your PC turned off, unplug any other SATA devices and then connect the new Scorpio drive to one of the SATA cables and to a power lead. Afterward, boot from your DOS thumb drive (specify a boot drive in your PC's BIOS, if necessary). At the DOS command line, type `run hddhackr -f` and press `<Enter>`. You'll be prompted to make a backup of the original drive firmware; do so.

Continue with the process to flash the firmware on the new hard drive. After a few seconds, you'll be prompted to restart the computer. Once you have done so, run the "hddhackr -f" command again, and it should report that the hard drive has been formatted for the Xbox 360.

Use Torx screwdrivers to remove the 20GB hard drive from your Xbox and to remove the drive from its case. Swap the formatted Western Digital drive into the case, put it back together, and start the console. Follow the prompt under *System-Memory* to format the new drive; after formatting is complete, the drive will be ready for use.



YOU CAN SWAP out your 20GB Xbox 360 drive for a 120GB one and save some dough.

tooth Control Panel, click *Add*, and then hold the 1 and 2 buttons on the Wii Remote. Follow the prompts on your PC to search for a new device. Select the Wii Remote, and choose not to use a passkey. Release the 1 and 2 buttons only after completing the connection.

Next, download and run GlovePie (find.pcworld.com/61419). Select *File>Open* to launch a Wii Remote script, and click *Run*. These scripts, which you can modify in the GUI tab, translate the game controller commands into PC actions, such as mouse movement. »

Add a Cheap External TiVo Hard Drive

Difficulty: Moderate **Time:** 2 hours

When TiVo hard drives get full, they begin erasing old shows that you might still want to watch. To fight this problem, add an external hard drive. TiVo will sell you an external drive for the TiVo HD and TiVo Series3, but by doing it yourself, you can get twice the storage for the same cost.

Note: This hack will void your warranty, and since the hardware connects online, you will probably get a frowny face written on your account. But TiVo doesn't go out of its way to punish users who try this hack. The process is time-consuming but not too difficult.

If you have an unmodified TiVo Series3, all you have to do is connect an eSATA drive. Power off the TiVo, plug everything in, and power up the DVR and the drive. To enable the drive, simply go to the TiVo's *Settings-Remote, CableCARD and Devices-External Storage* menu.

Many TiVo HD hackers suggest that you buy an A/V-marketed drive, which is designed for

video performance, constant use, and (often) quieter operation. These typically cost a little more than standard PC hard drives, so consider whether that premium offsets possible lost shows and the time you might have to expend in replacing the drive again should it eventually fail. (I decided to use a 500GB drive I had on hand that isn't marketed for A/V use.) You'll also need a 3.5-inch eSATA drive enclosure, preferably one with a built-in fan and a power switch that stays locked in the on position.

First, turn off and unplug the TiVo HD. Use a Torx-10 screwdriver to remove the six screws on the back of the DVR's case, and remove the top cover. Always keep your fingers well away from the capacitors on the back left, near where the unit's power cord connects. These can carry a dangerous electrical charge, even when the TiVo is unplugged.

UNSCREW FOUR TORX screws to remove your TiVo's built-in hard drive.



Disconnect the SATA data-and-power cable from the internal hard drive. With a Torx-10 screwdriver, remove the four screws that hold the drive cage to the case. (The screws near the front bezel are difficult to reach.) Lift the cage out of the box.

I recommend that you back up the original drive to another SATA drive. Connect both drives to a PC, and run WinMFS (find.pcworld.com/61420) as an administrator by launching it with a right-click and choosing *Run as administrator*. Be sure to select the TiVo-formatted drive as 'A' and '1', and click *Tools-Miscopy*. Select the destination drive in the following screen with the drop-down menu so that only Source A and Destination A are chosen. Be patient; the software takes about an hour to complete the backup process, and at times it may appear as though it has stalled or crashed.

Turn off your computer, and replace the old backup drive with your new SATA drive. Run WinMFS as an administrator again. After clicking *File-Select Drive*, choose the original drive as 'A'. The software will identify it as TiVo-formatted. Click the check box for the 'B' drive, and choose the new hard drive. Verify that its size matches your expectation. Click *Select*, and choose *Tools-Miscopy*. Reinstall the original (A) drive inside the TiVo, and then install the new (B) drive in the external case.

With everything powered off, connect the external drive; afterward, turn on the TiVo and the drive. The TiVo should boot to its home screen after about 5 minutes. You'll have to keep the external drive powered up and connected from this point forward—if you remove it, you'll lose any new recordings made since the upgrade, just as you would with an official TiVo upgrade. ➤

Skip Ads Easily With a Standard Cable Remote Control

Difficulty: Easy **Time:** 5 minutes

Many Motorola-made DVRs that cable-TV providers supply are unable to skip ads by jumping ahead 30 seconds. But you can remap the remote control to add this feature. I got it working with a Comcast remote, and it will likely work with your cable company's remote, too.

Press the **Cable** button at the top of the remote. Hold the **Setup** button until the Cable button flashes twice. Enter 994 on the keypad. The Cable button will flash twice again. Push the

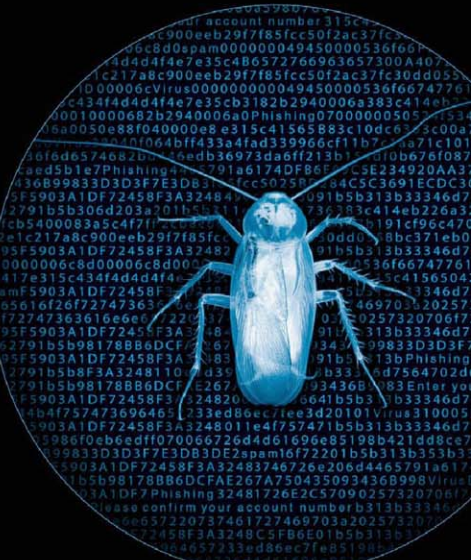
Setup button once. Enter 00173. Finally, push the button that you want to use as the 30-second skip; I chose the A button since I don't use it for anything else. The Cable button will flash twice.

To restore the original functionality to that key, follow the first steps described above, but after entering 994, push the remapped key twice. The Cable button will blink twice if your input has been accepted.

NOT USING THE 'A' button for anything? Repurpose it as a 30-second skip control.



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Media Player



Play iTunes Purchases on Any Music Player

Difficulty: Moderate **Time:** 30 minutes

Here's how to make music you bought via iTunes play on any media player. Like all of the hacks on this page, this DRM-stripping trick could get you into legal hot water, but it also gives you control over songs that you rightfully own.

I recommend using myFairTunes to set iTunes downloads free. You'll also need to use an older version of iTunes (and yes, give up some features), because this utility strips tracks of their copy protection, and Apple regularly updates iTunes software so hackers can't remove the DRM. Search online for "Old iTunes 7.4.1 download" and "myFairTunes7 download" to find the two applications.

If you're already running iTunes, choose *Store>Deauthorize Computer*, and then close the program. Temporarily rename the iTunes folder something simple like 'iTunes Recent'. Uninstall iTunes, and then restart the PC.

Install iTunes 7.4.1 and myFairTunes7. Next, install Visual C++ SP1 (find.pcworld.com/61374) and .Net Framework 2.0 (find.pcworld.com/61376). Restart your PC, and launch iTunes. Import your DRM-loaded songs, and play one of them. Enter your iTunes Music Store account information when prompted to do so.

Launch myFairTunes7. Click the check boxes for *Preserve RAW AAC Stream* and *Enable "No Sound" Fast Dump*. If you'd like to create MP3 files instead of using the original AAC files, click that box. With the songs selected, click *Start Conversion*. The software will take about 15 seconds per song to remove the DRM.

Go back to iTunes and drag all of the converted files from iTunes into a new folder in your desktop. The songs should now be playable on any audio device.

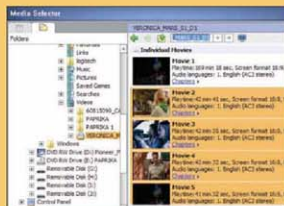
MYFAIRTUNES strips out DRM so you can play your files on any device.

Rip DVDs to a Media Player

Difficulty: Moderate **Time:** 1 hour

DVDs are too big to fit into your portable media player, but that doesn't mean you need to pay again to watch a movie on it. A multitude of tools can strip out the DRM that is built into the discs, and other utilities will let you compress movies for portable use.

You can find free tools such as DVD Decryptor to rip the DVD, but most have been abandoned for years and might not work on recently released movies. If those don't work, you can use the \$49 AnyDVD (find.pcworld.com/61370). After installing the software, insert a DVD and right-click on the logo in your system tray. Choose *Rip Video DVD to Harddisk* and give the pro-



SELECT MOVIES in Crunch, and compress them for portable use.

gram about half an hour, depending on your PC's power, to process the media.

Afterward the video can be processed in any program that reads the .vob and .ifo files used on DVDs. Again, you can find free tools, such as Video9a Pod Converter (find.pcworld.com/59803), and they tend to work better than the free utilities for stripping out DRM. For its simplicity, however, you might want to use the \$40 Roxio Crunch (find.pcworld.com/61372). Open the software, and choose *File>Add Movie*. Select the various files you transferred, and click *OK*. Choose a compression level from the *Format* drop-down menu, click *Save As*, and begin the processing. When it's complete, just transfer the movie to your media player.

Transfer TiVo Shows to an iPod for Free

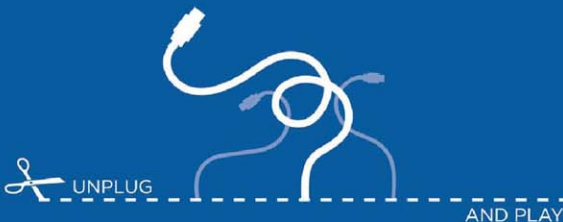
Difficulty: Easy **Time:** 30 minutes

Series2 and later TiVo DVRs can copy shows to a networked PC through the TiVo Desktop (find.pcworld.com/61373) software, but TiVo charges you to put those shows on an iPod, a smart phone, or any other device. Though TiVo locks its files with DRM, you can use a free tool to unlock them.

Windows users should first transfer the TiVo shows to a networked PC with the free version of TiVo Desktop. After that, run DirectShow Dump (find.pcworld.com/61429) to enable the shows to function on any video-playing device.

DIRECTSHOW turns TiVo programs into playable files.





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Unlock an iPhone and Install Unofficial Apps

Difficulty: Hard **Time:** 2.5 hours

Despite its coolness factor, the Apple iPhone comes with way too many restrictions. You're locked into AT&T service, for starters. On top of that, Apple says that it must approve all software before anyone can use the programs. But with this iPhone hack, you'll be able to swap in a different SIM from another provider. In addition, you'll have access to new software tools—such as one that gives you the ability to share the iPhone's mobile Internet connection with a laptop—that AT&T doesn't permit.

As of this writing, you can hack both the original iPhone and the newer 3G iPhone to give them access to new soft-

ware, but with this hack only the original handset can accept other SIM cards.

The hack requires a Mac in order to work. The process will void your warranty, and there's a small chance that you'll damage the phone in a way that prevents your restoring the handset from a backup. At the very least, before you dive in, sync your iPhone with iTunes and then **<Ctrl>**-click the phone name to create a software backup.

A program called PwnageTool (find.pcworld.com/61426) performs the hack. You'll also need original firmware for the iPhone. If you're lucky, you'll have a recent version of it in **Users>Username>Library>iTunes>iPhone Software Updates**.



SEE T-MOBILE'S name in the upper-left corner of the screen? This iPod has been unlocked.

Otherwise, click your phone, and select the **Restore** button in iTunes to download the latest file to that location. Next, search online for "bl39.bin and bl46bin iPhone boot-loader download" and grab copies of those two files. Now verify that the .ipsw and .bin files you downloaded will work, by checking the

list on the PwnageTool Web site.

Launch PwnageTool and choose your iPhone. Click the right arrow for the next page. PwnageTool should find the .ipsw file automatically (if it doesn't, browse to the file manually). Select the file and click the right arrow. It'll ask for the bootloaders; click **No** to skip the search, and enter where they're stored locally. Then click **Yes** to create the new iPhone .ipsw firmware file. You will be prompted for your admin password.

After the tool tells you to connect the phone, follow the on-screen instructions to turn it off, push the power button followed by the home button, and then release the buttons in that order.

Back in iTunes, hold down the **<Option>** key and click **Restore**. Choose the new, PwnageTool-created firmware on your desktop, and click **Open**. After several minutes, iTunes will restart the phone and will prompt you for a backup file to restore your old data on the hacked phone. Choose one if you want, or skip the prompt to start fresh.

A utility called Cydia will have been installed on the iPhone. It downloads unapproved software directly to the handset, but you'll still be able to buy programs through the App Store. And if you've hacked an original iPhone, you can now make calls on it with any active GSM SIM card. ●

Unlock Your Mobile Phone

Difficulty: Easy **Time:** 20 minutes

If you travel internationally, you can save money by buying a local, prepaid SIM card and swapping it into your phone, instead of paying high roaming rates to your U.S.

cellular provider. Most U.S. phones, however, are locked to a single carrier and function only with SIM cards from that company. Here's how to unlock your mobile handset for use on any GSM network.

First try to find a free code online that might unlock the phone. You can visit unlockitfree.com or bilemo.com/unlock, or you can begin by searching for your phone model online, using terms such as "Nokia 6820b free unlock code."

You'll be prompted on such sites to enter the phone's unique IMEI number (usually found under the battery), the model, and your carrier. With that data, the site will generate several codes and instructions for typing them into the handset. I recommend trying the first code returned at a few sites (since they can generate different results), instead of running through a full list of codes at one site.

SIMPLY ENTER an unlock code into your phone to set it free.

If you're unsuccessful, try following the same process at a paid site, such as mobilecodez.com.



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Small Office Solutions Provide:

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- UPS protection against blackouts, brownouts and surges on both AC and Tel/DSL line connections
- Surge suppression to protect computers and vital system peripherals



Home Theater Solutions Provide:

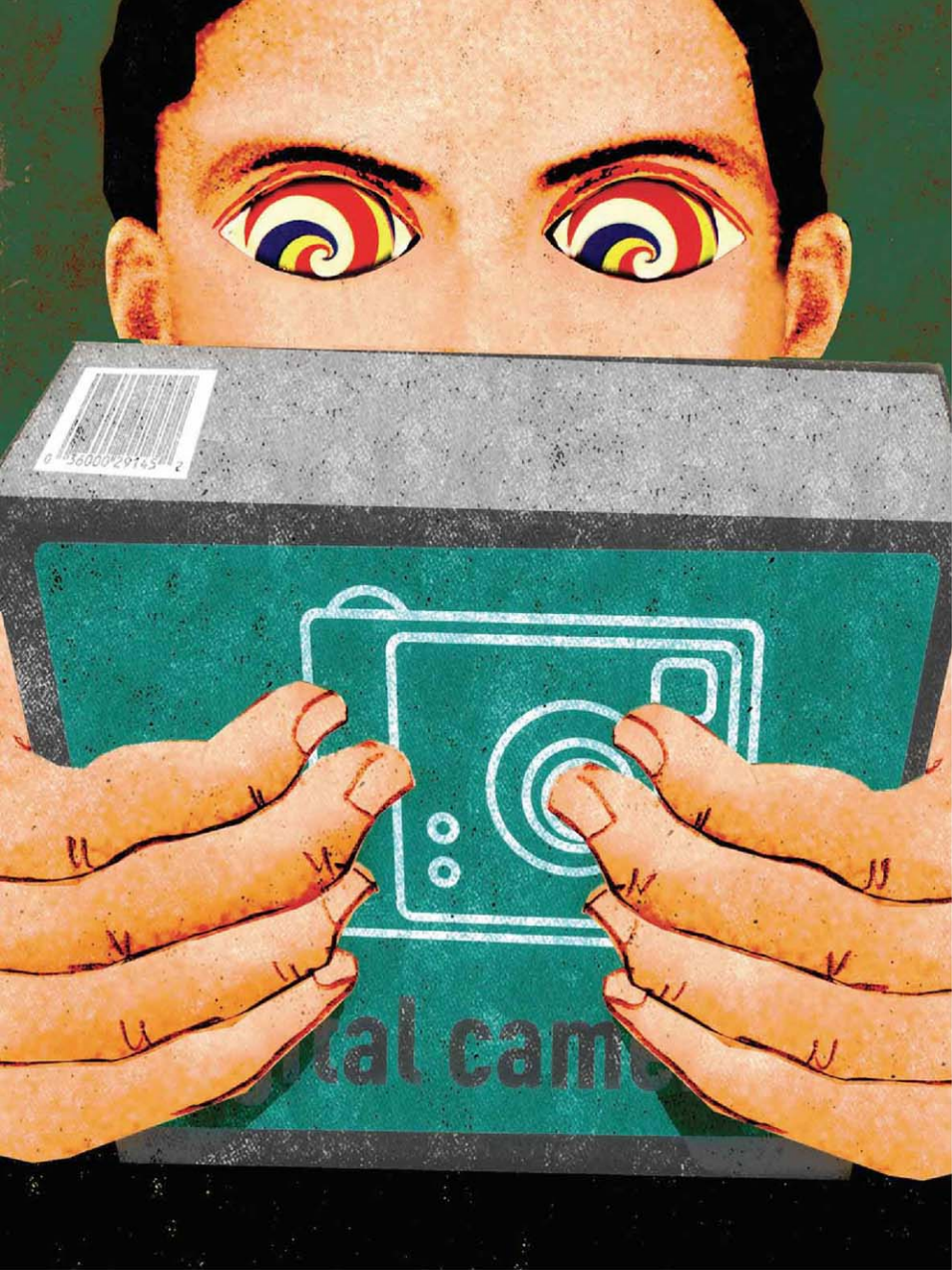
- Battery backup, EMI/RFI line noise filtering and surge protection for all components (TVs, DVRs/DVDs, HD source components, receivers, sound systems, PCs/servers and more)
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The Specs That Matter [and the Specs That Don't]

Technology stores and shopping sites bombard you with details about a device's speeds, resolutions, formats, and more. But much of that data is less important than it may seem. These are the specs to pay attention to when you're in the market for a PC, laptop, HDTV, camera, or router.

BY DARREN GLADSTONE | ILLUSTRATION BY BRIAN STAUFFER

IT USUALLY GOES LIKE THIS: An ad in the paper (or online) catches your eye. It lists a few product specs and claims some special features, but that's about it. Still, the price seems okay. May as well pull out the wallet now, right? Wrong!

Don't get suckered by an array of twinkling numbers into buying gear you don't need. To prevent that from happening, you need to arm yourself with more than just marketing material from competing vendors. That's where we can help.

Before you plunk down a credit card to buy anything, ask

yourself what you need your new gear to do. Put together a list of the tasks that you have in store for it. For example, do you need high-powered hardware, or are you paying extra for bragging rights? Are all of the features on a particular gadget critical, or can you do everything you want with a lower-priced model that can fulfill the primary wishes on your list?

Get the answers to these kinds of questions first. Then, with a little help from us, you'll be able to sort out which of the features that the vendors are pitching really count. »

Your Next Desktop PC

One second you're talking about wanting to use your next PC to make quick edits of home videos. Suddenly the salesperson is pushing a computer suitable for Pixar. But no matter what retailers say, you don't need a super-computer. For a system capable of handling most basic tasks flawlessly, you probably shouldn't have to spend more than \$750. So fend off the salesfolk and take a closer look under the hood.

CPU: Vendors love to highlight GHz numbers in ads, because those numbers go up constantly and are sure to look better than what you have on your current system (even if it's only two months old). The truth: Any recent CPU can handle the basics. Pile on power thoughtlessly, and you waste money. Often the performance gain after a certain point is minimal—though if you'll be juggling tons of multimedia files, you do need a little muscle. AMD's Phenom 9600 Quad-Core CPU, for example, goes toe-to-toe in price with Intel's Core 2 Duo E4600 and will power you through any workday job. But only the most demanding multimedia users need heavy-duty hardware like Intel's quad-core Core 2 Extreme QX9770.

RAM: This quick-and-easy upgrade for your desktop comes with a catch: the maximum amount that your operating system can handle. Common 32-bit versions of Windows Vista

A QUAD-CORE COMPUTER WE CAN ALL AFFORD.

\$499

DELL™ INSPIRON™ 530

- Intel® Core™2 Quad Processor Q6600
- Genuine Windows Vista® Home Premium, SP1
- 3GB Memory
- 500GB* Hard Drive
- Plays and Creates CDs and DVDs
- Monitor Not Included

Monitor not included. Add a Dell™ 19" widescreen flat panel for \$190.

LET SOMEONE SPECIAL CHOOSE THEIR OWN PERFECT GIFT.
Go to dell.com/giftcard for details.
TERMS AND CONDITIONS APPLY.

MONITOR

Is the display included in the price? Read the fine print—and be sure to buy only what you need.

HARD DRIVE

The bigger the hard drive is, the better. It would also be worthwhile to know the drive's speed.

GRAPHICS (MISSING)

Beware of ads that fail to identify the included GPU (you shouldn't try to run Vista without a good one).

and Windows XP can address no more than 4GB of RAM, even if your machine has more available. So unless you're using the 64-bit version of Vista (or 64-bit XP, if you can still find a copy), 2GB to 4GB of memory is the right target.

GRAPHICS BOARD: In bygone days, a high-quality graphics board mattered only to gamers. But now everyone with a digital camera to download or a TV show to watch craves graphics performance. Even so, premium cards don't offer enough of a boost to justify their high-end pricing unless you are a serious gamer. Instead, look for a PC configured with a decent CPU and a good GPU—such as nVidia's GeForce 9800 GTX or ATI's Radeon HD 4850. Only hard-core gamers and video editors need to drop \$600 on a fancy graphics card.

EXPANDABILITY: A desktop PC lets you upgrade later without having to rebuild from scratch. But few stores provide a full accounting of a system's upgrade options. Don't let that discourage you from checking. Note how many open PCIe slots and available internal and external drive bays the system has. And look for easy access to FireWire and USB ports.

The Desktop PC Specs That Matter

BASIC HOME SYSTEM

- » 2-GHz Dual Core CPU
- » At least 2GB of RAM
- » At least four USB 2.0 ports and one FireWire port
- » Extra bays for expansion

MULTIMEDIA SYSTEM

- » 2.4-GHz Quad Core CPU
- » At least an ATI HD 4850 or nVidia 8800 GT GPU
- » At least a 500GB, 7200-rpm hard drive

Mobile Computing

Whether you are looking for a lightweight device to handle low-demand Web browsing and document writing or a Death Star-size desktop replacement, the perfect notebook for you is out there somewhere. But try to get what you want at the outset: Laptops are trickier than desktop PCs to upgrade.

BATTERY LIFE: Notebook battery life continues to improve—especially in the ultraportable category—but the times that vendors quote tend to be inflated by being measured under optimum conditions, with the power-draining wireless receivers turned off and often with the extended-life battery (which usually costs extra). In PC World Test Center tests, laptops equipped with a T7200 Core 2 Duo processor had battery lives ranging from a little under 2 hours to as long as 5. The results depend on which of a multitude of components are sucking power under the hood. Check the fine print to learn whether the notebook was tested with the standard battery.

CPU: Vendors slap an Intel (or AMD) logo on a laptop, cite a speed, and leave it at that. Rarely do they acknowledge that laptops with low-end CPUs can barely get out of first gear running Vista. Beware of processors that run at less than 2 GHz. Intel Centrino 2-powered laptops have roared through our WorldBench 6 performance tests. But don't expect Centrino performance out of Intel's Atom processor, a hamster-wheel CPU designed to run sub-\$500 mini-notebooks.

GPU: Most laptops rely on basic integrated graphics chips. That's not an ideal component for playing recent 3D games (including social network games like Second Life) or running high-end graphics programs. To handle those capabilities, look for a laptop with a discrete nVidia or ATI graphics chip. But the extra graphics power comes with a catch: Laptops

with discrete chips tend to be larger and heavier, as evidenced by some of the mammoth gaming notebooks on the market.

RAM: Even though a laptop's RAM is relatively easy to upgrade, you should still buy as much memory as you can at the outset. Most laptops have two RAM slots, and it's not uncommon for a machine configured with 2GB of memory to have a 1GB module in each available slot. But if you start with this configuration, upgrading to 4GB of RAM later on means pay-

The Laptop PC Specs That Matter

ULTRAPORTABLE

- » At least a 1.7-GHz CPU
- » 2GB of RAM
- » Weight (laptop only) under 3 pounds
- » Screen size of 13.3 inches or less
- » Long battery life

DESKTOP REPLACEMENT

- » Centrino 2 CPU
- » Discrete GPU (AMD or nVidia)
- » 200GB or larger hard drive, running at 5400 rpm or faster
- » Optical drive

ing for two completely new RAM sticks. By opting for a generous quantity of RAM from the get-go, you won't need to spend money down the line on upgrading your sticks.

WEIGHT: Ads often omit "little" things from the laptop's declared weight—like the battery and power supply, which you'll likely carry with you when you go mobile. Before you buy, ask what the total weight of the product is with these critical accessories included. Better yet, go into a store and do a few power-lifting reps with the machine in its road configuration.

SCREEN: Though it certainly is important, screen size tells you nothing about how well you will be able to read text. Ask about the laptop's native resolution—and see it for yourself. And while you're at it, test the screen coating, too. The very thing that makes images pop on the show floor can make it unusable in broad daylight. Some laptop screens bounce reflections like a mirror, which can make them very difficult to use outdoors. LED-backlit screens provide greater brightness, though they do jack up the price. »

15.4" Ultrabright™ Widescreen

Intel Centrino Duo Core 2 Duo inside

SAVE \$200
\$899.99

NEW BEST BUY EXCLUSIVE

Gateway
Intel® Centrino® Duo Mobile Technology
Intel® Core™ 2 Duo Processor
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Minimum 3 per store. No rainchecks.

power up your game with total precision

Razer Lachesis™ Gaming Mouse \$69.99 (Reg. Price \$99.99)

SCREEN

The ad calls the screen "Ultrabright," but how is the picture in different lighting conditions?

PROCESSOR

The ad points out the Intel Core 2 Duo CPU—but not its speed. On notebooks, that matters.

GRAPHICS

Considering how power-hungry Vista is, having a discrete GPU for the laptop is almost mandatory.

High-Definition Viewing

Are you ready to treat yourself to a new television set? HDTVs—whether plasma, LCD, or rear-projection—are easy to use, but far too many retailers hype them with confusing and often incomprehensible sales jargon. Let's decode what it all means.

CONTRAST RATIO: In HDTV ads, this number enjoys way too much prominence. It measures the difference between the darkest and brightest light values a display can produce at the same time. The benefit of a high contrast ratio: It provides a more detailed and realistic image. But specs for contrast ratio are not measured consistently among vendors. LCDs start at a 600:1 ratio, and plasmas kick off at 1000:1; some sets boast high numbers up to 1,000,000:1. Trust your eyes first, and look to the numbers second.

Manufacturers crank up the contrast on their LCD TVs so that the images will look brighter under showroom lights. Try adjusting the image at the store to get a better sense of how the picture will look at home.

REFRESH RATE/RESPONSE TIME:

These numbers show up occasionally, and they are useful if you play video games or watch fast-action programs such as NASCAR races. Shopping for a plasma TV? Move along: Neither of these specs will come into play, as plasma technology is fast enough to handle the content. When it comes to LCD sets, look for a low response time. These days, we rarely see a response time above 10 milliseconds. Refresh rates, measured in hertz (Hz), matter for LCDs, too. A high refresh rate translates into less on-screen blurring. An HDTV with a 120-Hz refresh rate should handle fast-moving action.

RESOLUTION: If you plan to buy a Blu-ray player, get a 1080p set;

that spec means the TV will display 1920 by 1080 lines of resolution. No Blu-ray? Then just about any HDTV that supports both 1080i and 720p (1280 by 720 lines of resolution) content will do. All current models have one of these two resolutions. The "p" stands for "progressive scan," which produces supe-

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PANASONIC VIERA
50" 1080p Plasma HDTV (1000:1)
Contrast Ratio, New Anti-Reflective Filter,
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50" 720p Plasma HDTV with 1500:1
Contrast Ratio, New Anti-Reflective
Filter, Built-in SD Card Slot, Game Mode
& 3 HDMI inputs WEB ID: TH50P150

CONTRAST RATIO

Don't let yourself be persuaded by a huge number in this spec. Go to a store and believe your eyes.

INPUT

Futureproof with HDMI inputs, but make sure that the set supports all your current gear, too.

REFRESH RATE

Plasma sets don't list refresh rates because they can handle fast-paced content.

The HDTV Specs That Matter

ANY HDTV

- » Screen size appropriate to your viewing space.
- » 1080p resolution on sets with 40+ inch screens.
- » Contrast ratio. But trust your own vision first.

rior images without antialiasing and better video scaling than interlaced video (the "i" in the 1080i specification).

The 1080p spec represents the maximum resolution of the TV and the maximum resolution of Blu-ray Disc. If you aren't diving into Blu-ray—or if you're buying a TV with a screen smaller than 40 inches—get a 720p/1080i set. The image won't match the crisp detail of a 1080p set, but the difference is less noticeable on a smaller TV screen. And since cable, satellite, and over-the-air HD video is currently broadcast at only 720p or 1080i (depending on your provider), the native content won't take full advantage of a 1080p set, anyhow.

SCREEN SIZE: A 65-inch monument to couch-potato excess may look gorgeous until you put it in your den. To determine the ideal TV for your home, multiply screen size (in inches) by 2; the result is the optimum viewing distance for the set. Thus, the viewing sweet spot for a 52-inch is 104 inches (8.5 feet) away. Lack the space? Get a smaller TV or a bigger room. »

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MICRO CENTER
The Windows Computer Store

NCIX.com

newegg.com

TigerDirect.com

Digital Photography

If taking the highest-quality photos you possibly can is all that you care about, you should opt for a digital single-lens reflex (DSLR) camera. But when you carry an item around all day, you soon realize the value of light weight and compact size. Here's what to look for in a DSLR or a point-and-shoot.

MEGAPIXELS: The most hyped and misunderstood camera spec is the megapixel count. The pitch you'll get is that more megapixels equals better photos—but 5 megapixels is enough to create a sharp 11-by-14-inch print. A higher megapixel number does come in handy if you need to crop and zoom in on a section of a photo; but unless you're planning to print movie-size posters, a 14.5-megapixel camera is overkill.

OPTICAL ZOOM: Ignore vendors' specs for digital zoom and focus instead on the optical zoom. Digital zoom crops the image you see in your viewfinder and expands it to full-frame, reducing the quality of the resulting image. Optical zoom uses the lens to magnify the subject, resulting in a crystal-clear shot. But the higher the optical zoom, the more important optical image stabilization becomes; if you zoom in tight, very slight movement will blur your shot. Most point-and-shoots have optical zooms of 3X or 4X. For anything higher than that, you'll need optical image stabilization.

MANUAL FOCUS: Manual focus is a great option for a point-and-shoot camera to offer, and all DSLRs have it. Very-low-end cameras frequently omit manual focusing or permit only stepped focusing, forcing you to choose from preset distances

or scene modes. These days, more digital SLR cameras are offering point-and-shoot-like features, such as autofocus and scene modes to lure casual users. Casual photographers who are looking for more functionality may be better off opting for an upper-end point-and-shoot with a high optical zoom and a host of manual settings than splurging on a DSLR.

EXPOSURE SETTINGS: Many digital cameras offer aperture- and shutter-priority modes, which let you fine-tune the exposure settings for certain situations. Look for a camera with

The Camera Specs That Matter

POINT-AND-SHOOT

- » Optical zoom, not digital
- » 6 megapixels is plenty
- » Optical image stabilization
- » High ISO for low light
- » Fast shutter speed

DIGITAL SLR

- » 8+ megapixels
- » 10X optical zoom
- » RAW file support
- » Wide-angle/macro lens
- » Optical image stabilization

high shutter speeds if you plan on capturing fast-moving action, such as cars racing by or athletes running. Try to find a camera with a low aperture, such as f2.8, if you want to take shots in dark environments without using a flash.

VIEWFINDERS: A big, beautiful display is handy, but it's also a huge energy drain. Ask if you can adjust the screen's brightness, and whether you can toggle it off. Old school or not, having an optical viewfinder as well as an LCD can be a tremendous advantage when you're trying to prolong a camera's battery life.

OPTICAL IMAGE STABILIZATION: With image stabilization, as with zoom, optical wins out over digital big time. Because it physically shifts the image sensor to counteract movement, optical image stabilization does a much better job of capturing a clear shot. Digital stabilization simply adjusts the image's pixels or the camera's shutter speed in an effort to create a less-blurry shot. In any case, a tripod can save the day.

Optical Viewfinder!



2.5" LCD

Canon
PowerShot
SD1100 IS
Digital ELPH

8.0 million pixels
3x Optical Zoom

\$249.99

FREE \$20 Gift Card Instantly**

*10x Wide Angle Optical Zoom!
Ritz Exclusive Black Finish!*



2.5" LCD

Panasonic
Lumix
DMC-TZ4
Digital
Camera

8.1 million pixels
10x Optical Zoom

\$269.99*

Mega Optical Image Stabilizer!

***After \$30 Instant Savings**

**Gift cards may be used next day

LCD

A roomy screen is desirable, but is the display visible from different angles? Are the menus legible? How quickly does it drain the battery?

MEGAPIXELS

Don't get hypnotized by bigger, better numbers. Megapixels beyond 5 or 6 matter only for big prints and cropping edits.

OPTICAL ZOOM

Most advertisers these days are wising up and citing only the optical zoom figure. But some include digital zoom numbers. Ignore those.

Do More.



Travel Less.



Don't waste any more time, money and energy traveling to meetings. With GoToMeeting you can hold unlimited online meetings with anyone, anywhere — right from your desk. Whether you need to present, demonstrate, collaborate or train, GoToMeeting makes it easy. Spend less time on the road and more time improving the way you do business. Do more and travel less with GoToMeeting.

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Networking Equipment

Once upon a time, cobbling together a network was a painful procedure reserved for businesses, hard-core geeks, and kindly elves that appeared mysteriously at midnight. But these days, setting up a network—wireless or not—has never been easier. That said, it's still not as simple as purchasing the first router you see, plugging it in, and starting up. You still have to navigate the ins and outs of optimal connections. With a home network, you especially need to take into account not just what you're planning to hook up but also the layout of your house.

WIRELESS SPEED: Vendors will happily tell you the network's theoretical speed limits, but here's the ugly truth: You'll be lucky if your network hits 150 mbps. Take 802.11n, the latest draft of Wi-Fi. In our lab, we test with encryption on (a must!), and we rarely see speeds higher than 100 mbps. Also, beware of vendors promising proprietary technology that will provide a speed boost. The latest draft of 802.11n eliminates the need for most of those special "extras."

WI-FI STANDARDS: Draft-n routers are backward-compatible with older specs (802.11a, b, g, and pre-n), but those specs



NETGEAR
RangeMax™ NEXT Wireless N Router
 Simultaneously stream HD video, download MP3s and more at blazing speeds. (WNR8348/M-100NAS) 7831518

\$89.99



RangeMax™ Dual-Band Wireless N Router
 (WNR8300-18YNAS) 8669915

\$99.99



D-Link
FREE \$20 GIFT CARD INSTANTLY*
Xtreme N™ Wireless Router with 4-Port Gigabit Switch
 Stream HD and more at speeds that are 14X faster than standard wireless g with 6X the range. (DIR-655) 8040121

\$119.99



FREE \$20 GIFT CARD INSTANTLY*
Xtreme N™ Gaming Router (DGL-4500) 8548841

\$179.99

SPEED

Bold promises like "14X speed" and "6X range," very likely represent the router's capacity under optimal conditions.

GIGABIT

A gigabit router is great for transferring huge files on your network. It won't help with Internet speed, though.

may slow the whole network down. Any 802.11b/g devices that are connected to your draft-n router may hobble the entire network with 11b/g speeds. Also, avoid older, "pre-n" (as opposed to draft-n) routers if you come across them at clearance sales. Pre-n gear may work with 2.4-GHz draft-n products, but only at the speeds of aging 802.11g gear.

SECURITY: Using a Wired Equivalent Privacy (WEP) password is about as effective as hiding your system under a wet paper bag. That said, older devices might not support the more secure (and more recent) Wi-Fi Protected Access (WPA) standard, much less the current (and most efficient) WPA2 security standard. Regardless, any new gear you buy should support WPA2 because—even if you have to stick with WEP for a while to accommodate older gear—you'll want to move up to snappier speeds eventually.

WIRELESS ANTENNAS:

Generally, the greater the number of antennas that are sprouting out of your router, the faster you can transmit data. So if you are a fan of video streaming and multimedia, three is your magic number.

WIRED ALTERNATIVES: Wired connections may be a pain to install, but they are still the most reliable and secure high-speed broadband option. If snaking Cat5 ethernet cable throughout your home isn't feasible, consider getting a power-line network designed to work with the electrical wiring you already have.

Alas, power-line networks have their own issues: You will need adapters for each outlet you plan to use (plus one for an existing router); and there are three power-line standards, each of which is incompatible with the other two. Our advice: Look for HomePlug AV products. ●

The Networking Specs That Matter

WIRELESS ROUTERS

- » 802.11n
- » Dual-band (2.4 GHz and 5 GHz)
- » WPA2 security
- » Three antennas
- » Gigabit ethernet ports

Protects your computer, the environment, and your wallet.



APC Back-UPS BE750G with SmartDesktop Technology automatically powers down idle peripherals to save energy and money.



Get the most energy efficient desktop battery backup yet.

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What's in your computer? Photos, music, personal files, financial data, broadband access, videos, and more. Your computer has never been more important, and yet it has never been at higher risk for damaging power surges and other disturbances.

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— Heather Clancy,
ZDNet.com

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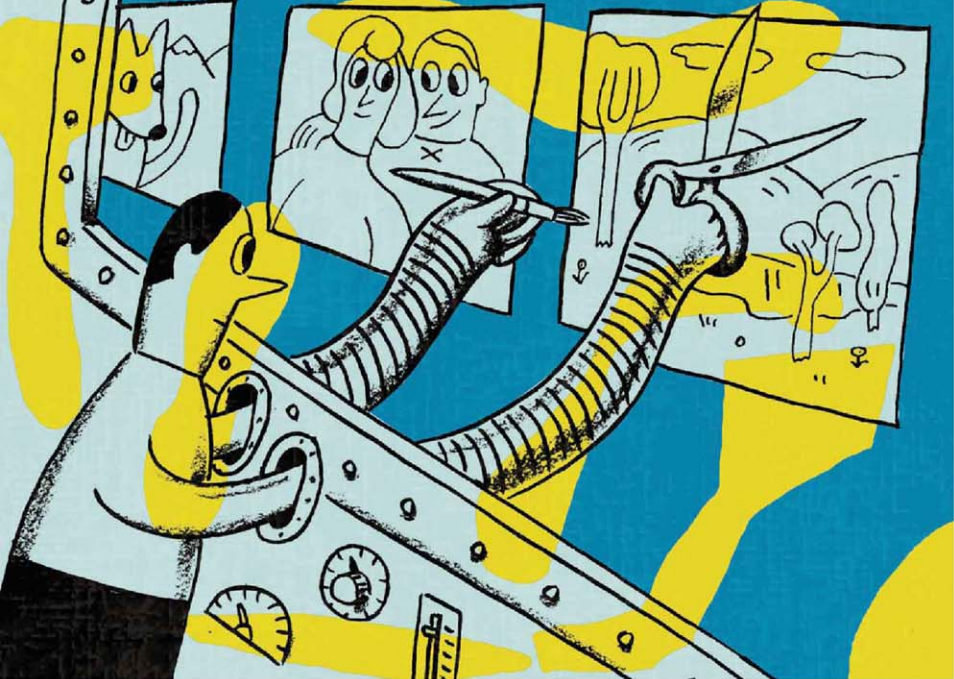
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Web Photo Fixers

Lots of free, browser-based image editors promise to get your pictures in shape with a few clicks. But big differences separate the best from the rest. »

BY HARRY McCracken

ILLUSTRATION BY MARC ROSENTHAL

In the beginning there was Adobe Photoshop, an awesomely potent—but famously pricey and complex—digital darkroom. Simpler photo editors, such as Adobe's Photoshop Elements and Corel's Paint Shop Pro, now run around \$80—not bad, but still an investment. And none of the programs has evolved much to serve millions of shutterbugs seeking simple, easily accessible tools for images shared online via Facebook, Flickr, Picasa, and the like.

Enter a new breed of photo editors that not only leverage the Web but live on it—browser-based services you can use on any PC with an Internet connection. These Web tools let you directly edit images on photo-sharing sites and social networks, so it's easy to tweak images you've posted to the Web without downloading them again; the editors also work with photos stored on your PC's hard drive. As with most Web

services, the typical price for browser-based editors is unbeatable: \$0.00.

There are several catches, though. No online image editor delivers the wealth of features and precision editing tools that Photoshop Elements and Paint Shop have had for years; most don't even let you print your pictures. Some of these Web-based editors are sluggish, clunky to use, or both. And unlike traditional desktop software, the ser-

vices work only when the Web itself works—a point that was driven home in July, when Amazon's widely used S3 storage platform suffered an outage that knocked out several online editors.

At their best, though, Web image editors deliver surprisingly strong tools, with decent performance and usability. For this review, I explored half a dozen services: FlauntR, FotoFlexer, PhotoShop Express, Picnik, Picture2Life, and Splashup. They all offer basic editing features, including cropping, resizing, and color-adjustment capabilities, plus at least a few fancier effects (for example, the ability to apply Warholesque pop-art colors or warp subjects into cartoony caricatures).

All allow you to work directly with images posted on at least three major photo-sharing sites (see the features chart below). None charges fees of any

Photo Editors in Your Browser: With Picnik, Powerful Image Editing Is a Breeze

IMAGE EDITING SERVICE		PCW Rating	Sites supported	Number of effects	Features supported	Bottom line	
1	BEST BET Picnik www.picnik.com	87 VERY GOOD	Facebook, Flickr, FreeWebs, MySpace, Photobucket, Picasa, Websheets, Yahoo	31	<ul style="list-style-type: none">• Text: Yes• Borders: Yes• Layers: Yes	<ul style="list-style-type: none">• Full-screen mode: No• Printing: Yes	A superb interface and thoughtful touches make photo editing fun; some features are reserved for the \$25/year Premium edition.
2	FotoFlexer www.fotoflexer.com	84 VERY GOOD	Facebook, Flickr, MySpace, Phanfare, Photobucket, Picasa, Smugmug, Yahoo	34	<ul style="list-style-type: none">• Text: Yes• Borders: Yes• Layers: Yes	<ul style="list-style-type: none">• Full-screen mode: Yes• Printing: No	A bevy of unique editing tools wrapped up in a better-than-average interface; optional full-resolution editing is somewhat sluggish.
3	Photoshop Express www.photoshopexpress.com	78 GOOD	Facebook, Flickr, Photobucket, Picasa	6	<ul style="list-style-type: none">• Text: No• Borders: No• Layers: No	<ul style="list-style-type: none">• Full-screen mode: Yes• Printing: No	Includes a photo organizer, unlimited undo, and good tools for the basics, but lacks some standard features such as text insertion.
4	Splashup www.splashup.com	77 GOOD	Facebook, Flickr, Picasa	13	<ul style="list-style-type: none">• Text: Yes• Borders: No• Layers: Yes	<ul style="list-style-type: none">• Full-screen mode: Yes• Printing: No	Mimics Photoshop with amazing fidelity, including layer support; but it's less usable than the best, and short on flashy effects.
5	FlauntR www.flaur.com	66 FAIR	Bebo, Facebook, Flickr, Picasa	33	<ul style="list-style-type: none">• Text: Yes• Borders: Yes• Layers: No	<ul style="list-style-type: none">• Full-screen mode: Yes• Printing: No	Bursting at the seams with whizzy features, but the convoluted and sluggish interface makes FlauntR a drag to use.
6	Picture2Life www.picture2life.com	55 POOR	23, Facebook, Flickr, Websheets	33	<ul style="list-style-type: none">• Text: Yes• Borders: Yes• Layers: No	<ul style="list-style-type: none">• Full-screen mode: No• Printing: No	Lots of special effects and a few interesting features can't compensate for a hopelessly annoying user experience.

sort except Picnik, which reserves a few features for a Premium edition that costs \$25 a year. (FotoFlexer, Picture2Life, and the free version of Picnik carry ads; FlauntR, Photoshop Express, and Splashup don't.)

FotoFlexer and Picnik were clear standouts—and Picnik's uncommonly well-done interface gave it the edge. When you need to quickly tweak a picture on a photo site (or on a PC with no desktop image editing application), it's productive and fun to go Picniking.

1 Picnik

www.picnik.com

PRO: Terrific user interface makes applying layers and other advanced features easy.

CON: Some features, such as full-screen editing, are restricted to the paid version.

BEST BET Picnik certainly takes its name to heart: Its sleek tabbed interface has a blue-sky background and blades of grass, and it claims to be picking blackberries, buttering sandwiches, and cueing up birdsongs as it loads. But the service's playful personality belies its serious capabilities. In fact, its free version is my top pick—even without some features available only in the \$25-a-year Premium edition.

The freebie version has fewer tools than the also-impressive FotoFlexer; but more than any other editor here, it doesn't just do a lot of things—it does a lot of things well. The controls for browsing, choosing, and using the dozens of special effects are particularly slick, and they can show you an instant live preview of an effect's impact on your photo.

Picnik remembers the last image you edited and automatically loads it when you return; the service also keeps track of the last five pictures you worked on and lets you undo the changes you made to them at any time, even after you've saved them to an external photo

site such as Flickr or Photobucket.

Picnik is also the only editor here that lets you print photos. And even though it's the easiest to use, it also has the best help: Brief explanations of features pop up as you need them.

As I was working on this review, I was able to try out a prerelease version of a new feature, called Picnik Baskets, that

any other contender that I tried.

The one feature Picnik denies free-loading users that I really missed is a full-screen editing mode; the service displays banner advertising, which reduces the size of the editing window. (Every other service here except Picture2Life allows full-screen editing.)

The Premium version has no ads,

Erasing Your Mistakes

FlauntR (right) sometimes has a blank space where its Undo button normally sits; Photoshop Express (below) lets you click on thumbnails to undo editing changes at any time.



however; its other benefits include stylish additional fonts and Photoshop-like manual editing of image levels and curves. Premium also lifts the five-image limit on Picnik Basket documents, and lets you track back through any image you ever edited and undo any change. For heavy users, I think Premium is worth the annual \$25 fee—but Picnik's service is pretty darn likable even if you don't pay a cent.

works something like FotoFlexer's layers. While not as powerful as Photoshop layers, Picnik Baskets lets you drag and stack up to five images from a nifty pop-up viewer into an editing window, where you can apply different effects to each to create a photo collage.

Those images must come from your PC or another site: Unlike the other services here, Picnik doesn't store any photos. Fortunately, however, its support for third-party photo sites is as seamless and comprehensive as that of

2 FotoFlexer

www.fotoflexer.com

PRO: Plenty of high-end features wrapped up in a serviceable interface.

CON: Not optimized for high-res photos; can't edit layers or effects once you've saved and closed an image.



FotoFlexer, which bills itself as “The world’s most advanced online image editor,” does indeed pack an amazing array of capabilities—including a few that no other contender even dares to attempt.

Ultimately, I preferred the slicker, more fully baked Picnik, but this ambitious service isn’t far behind.

who wandered into your snapshot—that FotoFlexer then erases while preserving everything around them. The effect works well only with images where cloning surrounding pixels into the painted-out area is easy—but it’s simple to use and fun to watch at work. Given FotoFlexer’s richness and its

3 Photoshop Express

www.photoshopexpress.com

PRO: Built-in image organizer, friendly interface, unlimited undo.

CON: Lacks basics such as text, borders.

Despite its Adobe pedigree, Photoshop Express is by no means the closest thing you’ll find to Photoshop on the Web. While this relative newcomer is impressive in some ways, it lacks basics that all other editors here offer.

One significant benefit that Express does deliver is a full-blown image organizer that gives you 2GB of storage and lets you create public and private albums as well as fancy 3D slide shows. While less fully evolved than photo-sharing sites such as Flickr and Smug-Mug, it’s the best organizer here.

Express’s editing interface looks nothing like Photoshop or Photoshop Elements, but it’s nicely done—only Picnik’s is more refined. When you choose a tool for exposure, highlighting, or sharpening, you get thumbnails that show how different variants of the effect will alter your photo. Admittedly, they were often too small to show the change well, but clicking on any of them provides an instant full-size preview. And applying Express’s effects is pretty zippy, too, even when you’re working

with a high-resolution image.

The service’s multilevel undo feature is a joy, freeing you to experiment without worrying about messing up your masterpieces. Thumbnails provide a visual history of all your changes; one click takes you back to any point in time. It’s the photographic equivalent of the Time Machine backup utility in Apple’s OS X 10.5 Leopard.

But Express offers only a smattering of effects, compared with the dozens found in most of the services here. You can’t even add text to an image, let alone frame your picture in a border. And you have no way to layer multi-



Advanced Editing

Hey, where did the horse go? FotoFlexer’s unique, fun-to-use Smart Resize tool can help you erase unwanted animals (including human ones) from your photos.



Like FlauntR and Picture2Life, FotoFlexer’s service is filled with image-processing tools of all sorts, from the mundane (red-eye reduction) to the oddball (fonts that sparkle). But FotoFlexer is far better at making them simple to find and figure out, thanks in part to a tabbed interface that organizes functions into areas such as Effects, Decorate, Beautify, and Distort.

The service’s extensive layering features are outstanding compared with those of other Web applications, and more intuitive than Splashup’s more Photoshop-like implementation of the same idea. You can place multiple pictures into one file, shuffle them, and then apply special effects layer by layer—a great way to create composite images such as photo collages.

FotoFlexer’s most distinctive tools sit in a tab intriguingly labeled Geek. Smart Resize, for instance, lets you change an image’s proportions by painting out elements—such as random strangers

claim to offer unlimited storage, I was sorry to find that saving an image permanently freezes your changes: You can’t come back later and move a layer, undo an effect, or edit a block of text, as you can with Picnik and Splashup.

By default, the service also knocks down the resolution of high-res photos when you load them, without clearly telling you it’s doing so. You can opt to edit everything at full resolution, but it accurately warns that this may bog down your work. However, if you don’t intend to print out your pictures or archive them for posterity, the reduced resolution shouldn’t be an issue.

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ple photos. It feels as if Adobe has half-way completed a potentially top-notch photo editor (at this writing, PhotoShop Express is still labeled as a beta).

4 Splashup

www.splashup.com

PRO: Photoshop-like layer and selection tools.

CON: Relatively few effects; speed and reliability issues; no online help.

If an award existed for "Web Image Editor Most Likely to Be Mistaken for Photoshop," Splashup (formerly known as Fauxto) would win in a cakewalk. Drop-down menus, floating tool palettes, and multiple features are located exactly as in Adobe's flagship product. That's not an inherent plus, though—after all, Photoshop is notorious for having a less-than-intuitive interface, and I found FotoFlexer and Picnik easier to navigate.

More impressive are features that are standard in traditional desktop image editors but still refreshing surprises on the Web. Splashup is the only editor here that lets you select part of an image and apply an effect to it alone, and it implements layers in Photoshop-like fashion, letting you stack several images into one file and apply different effects to each layer. (It uses its own file format so that you can edit layers and elements when you open an image again later.) You can also open multiple photos at once; you don't have to save one before opening the next.

Too bad it has no documentation; the Launch Help item in the Help menu is permanently grayed out. And for all of the service's sophistication in some areas, it's short on tools for folks who want to add pizzazz to photos with a few clicks: It offers far fewer special effects than most com-

petitors do, and you can't add borders or clip art. I also missed the dozens of jazzy fonts available in FotoFlexer and Picnik; Splashup has only 12 (all mundane), and they max out at 72 points, on the small side for high-resolution photos. Support for photo-sharing sites is relatively skimpy, »

For Free Photo Editing on the Desktop, It's Paint.Net

TODAY'S BEST WEB-BASED photo editors excel at quick, simple fixes. But for advanced image processing, desktop applications still offer more power, flexibility, and speed—and some of them even do it for free.



Google Picasa 2 (find.pcworld.com/61388) is easy to use but short on features. GIMP (find.pcworld.com/61391) packs

PAINT.NET OFFERS much of PhotoShop's precision and many of its advanced editing features, at a far more appealing price.

Photoshop-like power but sports a user interface that appears to have been designed by Martians. And then there's the best free image editor, Paint.Net (find.pcworld.com/61195).

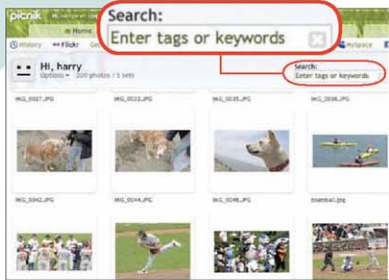
With an interface modeled on Photoshop's, it takes time to master but offers a precision that online editors don't match. It opens multiple images at once, supports layers, and lets you apply any of its 30-plus effects to part of an image. It can handle images of almost any resolution, and offers full-blown printing options. You can add features via free third-party plug-ins.

Paint.Net doesn't include clip art or borders; it doesn't integrate with photo-sharing sites and has no organizing tools (such as those in Photoshop Elements). But this quietly competent freebie is awfully handy when you need more than a Web service can deliver.



Photo Importing

Picnik (right) makes snagging photos from Flickr a cinch with sorting options and keyword searching; Picture2Life (above) presents all your pictures in one gigantic, undifferentiated pile.



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too—it hooks into three, versus eight apiece for FotoFlexer and Picnik.

Splashup was less sprightly and more glitchy than some rivals. Images in a Flickr album appeared slowly, and sometimes didn't open at all.

Splashup's creators say a new version is in the works. But for now, unless you're a fanatical devotee of the Photo-shop approach to things, FotoFlexer and Picnik have more to offer.

5 FlauntR

www.flaur.com

PRO: Tons of photofinishing features and goodies such as fonts and clip art.

CON: Byzantine interface; no undo for some features.

Like splashy graphics? FlauntR is a riveting eye-candy store crammed with effects, fonts, clip art, borders, and other tools. It can create slide shows and prep images to be social-network avatars or cell-phone wallpaper. You can apply color schemes from famous paintings to your images, create electronic greeting cards, or even slap your photo on a mock magazine cover.

But accessing all that power can be difficult. FlauntR's assorted features are divided up among half a dozen subapplications with names such as StylR, EditR, and TextR; it isn't always obvious what's where, and it takes a few seconds to hop between the applets. An Undo button appears and disappears depending on where you are, and the controls for tweaking effects sit in a window so small that you sometimes must scroll around to see all the options that a particular effect offers.

Oh, and one other thing: FlauntR works only on Windows PCs. All the other services I tried ran on both PCs and Macs, as a good Web app should.

FlauntR is nowhere near as frustrating as Picture2Life, but it lacks the ele-

gance and efficiency of FotoFlexer, Photoshop Express, and Picnik. At least FlauntR doesn't claim to be ready for prime time: Although it appeared in 2007, it's still labeled an alpha release.

6 Picture2Life

www.picture2life.com

PRO: Jam-packed with features, including collages, slide shows, and photo sharing.

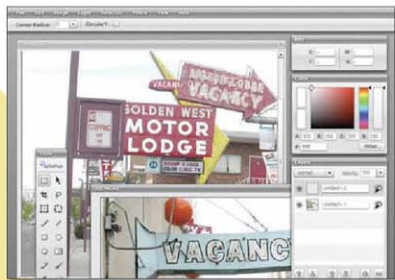
CON: Frustrating user interface; sluggish. Buried in the Picture2Life beta I tried are occasional, tantalizing hints of a

sequence of effects you've applied to one photo—say, cropping it, giving it a sepia look, and adding a border—and transfer it to others with one click.

But Picture2Life's Flickr-import interface is so confusing that I thought I'd failed to do the job when I'd actually succeeded. This is also the only service here that doesn't show what an effect will look like on your photo until after you've applied it (at least undoing is easy). A prominent button lets you see pictures at full size, but you get no on-screen controls for shrinking or magni-

User Interfaces

Splashup (right) uncannily replicates Photoshop's look and feel, complete with layers and multiple-image support—but the streamlined design of Picnik (below) is less intimidating.



pleasing app. But they're overwhelmed by an annoying, baffling user interface.

The good news: Picture2Life is full of stuff, including one of the longest special effects lists here. A unique collage creator lets you insert several photos into a canned or custom-built template. Like Photoshop Express, it has built-in tools for storing, organizing, and sharing photos. I loved the ability to save a

rying them. The link to online help vanished when I was in editing mode, and the useful-looking Learn More buttons didn't do anything when I clicked them. (Picture2Life's makers tell me they're working on a version that fixes these issues and improves the interface.)

Like FotoFlexer, Picture2Life automatically downsamples your high-res pho-

tographs, a step that speeds up image processing; you can override it, but only up to 1600 by 1200 pixels. I wouldn't bother, though, since other services match most of Picture2Life's capabilities without the hassles. ●

Former PC World Editor in Chief Harry McCracken now blogs at his own site, Technologist (www.technologist.com).

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Here's How

Give Your Chats a Personal Touch With Video

Videoconferencing is finally more than just a nerdy novelty. Here's how you can get some face time with your family, friends, colleagues, and customers—with or without a PC.

BY ZACK STERN

CHAT IS CHEAP. Videoconferencing, on the other hand, gives your online conversations a more personal feeling. For telecommuting, keeping in touch with your clientele, calling home from a business trip, or checking in with out-of-state relatives, you are never more than a smile away, provided you have a Webcam and some free software. I'll explain how to get started and offer tips for getting the most out of your video chats.

Pick a Camera

Although you obviously can't do videoconferencing without a camera, what sort of camera you use doesn't really matter much. Since your Internet connection will likely throttle the performance of any videoconference, a high-resolution camera can actually be a waste of money. Nevertheless, keeping in mind some important differences between camera models can



THE \$100 LOGITECH QuickCam Pro 9000 Webcam includes a built-in microphone that can pick up your voice easily from a few feet away.

help you find the best hardware for your setup.

Resolution and frame rate make for the clearest distinctions between models. Ideally, pick a camera that captures natively at 640 by 480 resolution or better, with a speed of 30 frames per second. Some Webcams record at HD resolutions, but you'll rarely be able to transmit such dense images through a home Internet connection. Office networks are sometimes fast enough to take advantage of a bigger picture, but most IT professionals would probably frown on employees' hogging network bandwidth for high-def video.

Many Webcams include built-in microphones that do an excellent job of picking up your voice from a few feet away. Built-in mics aren't always the best choice for all situations, though. In a busy office, for instance, ambient noise can be so loud that even a high-quality noise-canceling microphone won't be

able to cut through the racket. Built-in microphones also tend to produce echo effects as they pick up the voices coming out of your nearby speakers. So if you want to ensure that your voice gets through clearly, consider investing in a good headset microphone that will isolate your voice from background sounds (a headset will also deliver incoming audio directly to your ears).



ALONG WITH ITS voice services, Skype offers excellent videoconferencing.

Naturally, if your computer came with a Webcam built in, you don't need to bother with an external camera.

Choose an Application

Your choice in videoconferencing software is a far more important consideration than the type of camera or microphone you use. As of this writing, only a few good video-chat applications are available, and they tend not to communicate with one another. Fortunately, these apps are free, and nothing will prevent you from installing more than one of these programs on your PC.

AIM (AOL Instant Messenger, aim.com) is the most popular IM program around, and it supports video, too. The best part: In North America, at least, it's nearly ubiquitous, so everyone you know probably already has an AIM user name. If they happen to have a Webcam, you can hold video chats with them.

iChat, Apple's take on AIM that comes with Mac OS X, now does videoconferencing using the built-in Webcam installed on every new Mac. If you have Mac

users in your AIM buddy list, this is what they'll be using. It even allows Mac users and PC users to chat together.

Microsoft Windows Live Messenger (messenger.live.com) is a free download, and it supports videoconferences. It's more popular in Europe than in North America, so it can be a good choice if you're looking for so-

Skype (skype.com), which has won international acclaim for its free voice-calling service, now offers one of the best video-chat interfaces around. And because Skype works on both Mac OS and



IN ADDITION TO any audio controls included in your Webcam's software, you can use Windows' Sound control panel to set up your microphone.

Linux (as well as Windows), it's a great choice for cross-platform conversations.

Yahoo Instant Messenger (messenger.yahoo.com) handles videoconferencing, also, but at this writing the capability was not supported in the Vista version (a beta).

In addition to free consumer-targeted offerings, several business conferencing services support video. The popular Cisco WebEx ([webex.com](http://www.webex.com)) service provides videoconferencing features to small businesses, while the more specialized SightSpeed.com presents a more specifically video-oriented conferencing service that includes a host of other file-sharing and collaboration features.

Set It All Up

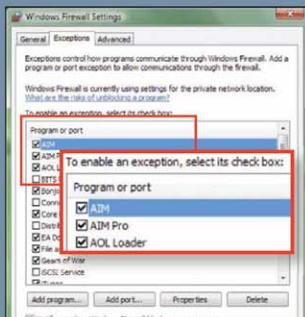
Your first step into the world of videoconferencing—if your computer didn't come with a built-in camera—is to

set up your Webcam. Nearly all Webcams are USB devices, so setup is generally very simple. In most cases, however, you should install the driver software before plugging in the camera, to ensure that your Webcam's drivers function properly. With most Logitech QuickCams, for instance, you will be prompted to plug in the camera at a specific point during the installation.

After installing the Webcam driver and plugging in the camera, you're only half-way finished. Your next step is to test the camera's microphone or to install a separate mic and test it. If you're using a camera with a built-in mic, you can control the audio settings via the »

TROUBLESHOOTING TIP

Boost Your Network's Performance for Videoconferencing



IF WINDOWS' FIREWALL stops your videoconferencing software, add an exception in the Firewall Settings control panel to let the program through.

Here's How

software that came with the Webcam. If, on the other hand, you're using a standard headset plugged into your PC's audio jacks, you should use the Sound control panel in Windows to select, configure, and test your microphone.

Browser-Based Video Chat and Video Mail

I like the reliability of running a chat-and-video program on a computer, but browser-based tools can be ideal on a borrowed PC.

TokBox (tokbox.com) creates videoconferences through Firefox or Internet Explorer, and it can even invite people who haven't signed up with any service to participate. AIM and Windows Live Messenger fans can sign in with those accounts, too, for regular chatting and for video calls to their contacts.

To start a video chat, sign in to TokBox and click *Conference* on the left side of the page. When a box prompts you for permission to use the Webcam, click *Allow*. Then just send the conference link to your contacts.



TOKBOX'S FLASH-BASED videoconferencing software asks for permission to use your PC's Webcam.

The link recipients don't even have to log in; they can simply load up the browser page and click *Allow* to join the conference.

TokBox also lets you create recorded video messages that you can send to family members, colleagues, and friends. In the main TokBox page after logging in, just click *Video Mail*. Click *Record Message*, enter an e-mail address, add a text message below it if you want to, and click *Send*. The recipient will get an e-mail containing a link back to your video, which TokBox.com hosts.

Share Documents and Desktops

In most chat clients, you can drag a file to the chat window to send it, or right-click a contact's name and choose the option to send a file.

Desktop sharing takes collaboration further, letting you view or control a remote computer. This feature is great for troubleshooting a parent's distant laptop, but it's also helpful for showing a PowerPoint or Excel presentation to a group.

Desktop-sharing support varies greatly on different video and chat programs. For instance, it isn't available on the standard AIM

client for PCs, but it is included in the more business-oriented AIM Pro. Right-click a buddy in AIM Pro, and choose *New Desktop Share*. Click *Continue*, and the remote computer can see your desktop. (Bear in mind that your buddy will also need to be running AIM Pro to receive your file.)

On a Mac running OS X 10.5 and iChat, first click a buddy, and then click the icon in the bottom right to offer your screen to the



MAC USERS ON Apple's iChat client can easily hold videoconferences with Windows-using buddies who are on AIM.

remote contact or to ask to control their computer.

When you're in control, the remote computer replaces your main screen, but a small representation of your own system lets you toggle between the views.

Google Docs is another collaboration favorite that works independently of your videoconferencing software. You run your chat application as you normally would, and log in to this service at the same time. Open one of your documents, and click the *Share* tab on the right. You can then invite other people to collaborate or to view the document, and they can alter it or look at the file at the same time.

Use a Videophone, Skip the PC

For permanent videoconferencing setups, consider avoiding the PC altogether. Dedicated videophones can be great for always-ready office installations. Unfortunately, such stand-alone devices tend to work only with their own kind, so you usually need to buy at least two of the same device if you want to talk to anyone. As fate would have it, though, some manufacturers now offer PC-based software that can

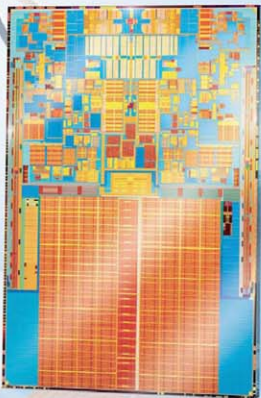
connect Webcam users to dedicated videophones.

D-Link (dlink.com) offers a couple of business-oriented hardware products: the \$160 i2eye Broadband Videophone DVC-1000 and the \$350 i2eye Broadband Desktop Videophone DVC-2000. While the DVC-1000 is designed to sit atop a television set in a conference room, the DVC-2000 consists of a camera and a video screen that are built into a desktop telephone.

The \$200 Packet8 Tango (packet8.com), meanwhile, is a device that connects to your PC, phone, and Internet source. It has a built-in wireless router, which helps to free up some space in a home office. Regrettably, it can talk only to other Packet8 videophones.

Game consoles also make a great video-chat platform. If you already have the game hardware, you'll just need to add a camera from Microsoft or Sony. The former offers the Xbox 360 Live Vision Camera, and the latter sells the PlayStation Eye for the PlayStation 3 (each camera is about \$40). As with most other non-PC video-chat products, these let you converse only with people who are using the same system.

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Turn Just About Any PC Into a Media Center

YOUR PC ALREADY plays all of your music, and your hard drive contains every digital photo you've ever taken. And you probably watch hours of video on Hulu, Veoh, or YouTube.

You can corral all of that stuff within one attractive, easy-to-use interface that's large enough for you to see (and control) from the couch—and you can add TV and DVR features to the mix—by transforming your PC into a self-contained media center. All you need is the right software, and possibly some extra hardware, to give your machine new life as a jukebox, a high-def digital photo frame, a movie theater, and a TiVo clone.

The Easy Way

You don't necessarily need to buy new hardware, and the software part of this upgrade could be easier than you think. In fact, if your PC is running Windows Vista—either the Home Premium or the Ultimate edition—you're set: Microsoft baked Windows Media Center right into the operating system. Users of Mac OS X Leopard have basic media-center software in the form of Apple's Front Row, though third-party alternatives are also available. And Linux users have several free options, including Freeco (find.pcworld.com/61380) and LinuxMCE (find.pcworld.com/61381).

All of those applications scan your PC for photos,

Want the latest media-center features in your living room? Here's how to turn your PC into such a powerhouse without breaking the bank.

music, and videos, and then present them inside an over-size, TV-friendly interface



IF YOU DON'T want to spend any money on media-center software, check out MediaPortal. It's a full-featured program, and it's free.

(commonly known as a 10-foot interface, meaning it's easily viewable from the couch). So when we talk about turning your PC into a media center, we mean installing software that finds, catalogs, and plays your media files—and looks good while doing it.

Step one is to choose a media-center program—though as noted previously, you may already have one.

The most obvious choice is Windows Media Center (WMC), which, despite being a Vista-bundled freebie, offers a rich feature set and a dazzling interface. With it you can view photo slide shows (complete with Ken Burns-style pan and zoom effects), watch DVDs and videos,

browse your music library by cover art, and even connect to various online services (including such movie-download stores as CinemaNow and Movielink).

If you'd rather dip your toe in the media-center waters without spending any money, consider MediaPortal (find.pcworld.com/61382), a free application that's every bit as powerful as WMC. It can record TV, play videos and music, run

fancy slide shows, tune in radio stations (both FM and Internet), and even play games such as Tetris. MediaPortal is compatible with Windows XP and Vista.

Tune In

A tuner is a key ingredient in any good media-center PC. Relatively inexpensive and easy to install, tuners are available in both PCI (internal) and USB (external) flavors. They support both analog and digital sources, too.

THE HAUPPAUGE WINTV-HVR-2250 tuner card adds high-def television to your PC.



An analog tuner can receive standard-definition cable or satellite signals, while a digital tuner affords access to over-the-air (OTA) digital broadcasts and/or so-called QAM signals; the latter are unscrambled digital channels (usually just local ones, but high-definition) delivered via standard cable.

The \$149 Hauppauge Wintv-HVR-2250 is a PCI Express card that comes with a pair of hybrid digital tuners, meaning that they can decode both analog and digital signals (QAM included). In addition, the Hauppauge card comes with a plug-in for watching and recording QAM channels via the Windows Media Center program guide—a major plus for Vista users.

Want something more travel-friendly? AVerMedia's \$80 AVerTV Hybrid Volar Max is a USB tuner that's just the size of a flash drive; it supports analog, OTA, and QAM sources.

A media-center PC is at its best when it's connected to a big ol' TV. That usually means having a PC in your living room, which is both an inconvenience (since you no longer have your computer wherever you were using it) and a decor killer. Solve both problems with a media-center extender—a box that streams media from your PC to your TV.

For a guide to the latest media-streaming options, see Becky Waring's "The New High-Def Streaming Tools" (find.pcworld.com/61379).

—Rick Broida

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Work Faster With a Gaming Keyboard

WHETHER IT'S COPYING data from multiple worksheets to create a sales report, grabbing the same block of statistics from a Web site each morning and formatting its text to match your document, or just staying an ore king so you can loot and sell his enchanted crown, you probably have repetitive tasks that could use a little automating. With a macro-enabled keyboard, you can take the drudgery out of these and other mundane computing tasks.

While obviously designed with gamers in mind, macro-enabled keyboards like the Logitech G15 (logitech.com) and Razer Pro (razerpro.com) can give you a huge productivity boost at work. Their power lies in their programmable keys, which can execute complex commands instantly with a single tap.

What makes these keyboards superior to the built-in macro features in Word, Excel, and other apps is hardware macros' ability to work across multiple programs at once, copying data from one app and pasting and formatting it in another. That way, in under a minute you can crank out boring jobs that might otherwise take up to half an hour.

Macro keyboards come with their own key-profiling utilities, which control the behavior of their programmable keys. The utility for the Logitech G15 is the Logitech G-series Keyboard Profiler. To start programming your keys, choose an application to use as your macro's start-

ing point. Microsoft Excel is the example here, but this method works with any application on your PC, and even with Web-based programs such as Google Calendar.

Record a Macro

In Keyboard Profiler, click *Profile*, and choose *New*. Give your profile a name and a description, and then switch to the program that you will use with the macros.

Let's say that you need to copy data from one Excel worksheet over to another. Start by selecting the data you want to copy.

Now create a macro that will copy the selected block to an adjacent worksheet

you have open. Press the MR (for Macro Record) button on the keyboard, and then continue by using keyboard commands. Copy the selection of data (**<Ctrl>-C**), switch over to the other worksheet (**<Ctrl>-<Tab>**), paste the data (**<Ctrl>-V**), and then switch back to the first worksheet (**<Ctrl>-<Tab>**). You could also use **<Alt>-<Tab>** to switch to your Web browser or another application, grab data, and **<Alt>-<Tab>** your way back into Excel and paste the data in.

When you're done, assign your macro to whichever programmable key you prefer, and then press the MR button again. From that

GAMING keyboards like the Logitech G15 feature programmable keys that can speed up your workday.

point on, you won't have to drudge your way through that particular task anymore.

—Alfred Poor



READER-TO-READER

FORUMS.PCWORLD.COM

Get Your Old Games Working in Vista

FROM THE PCW FORUMS

IF YOUR Windows XP games crash in Vista, PCW forums member Enginebill has a quick fix that should put you back in the action.

Join the PCW online community at forums.pcwworld.com. If we print one of your tips in the magazine, we'll send you a PC World T-shirt.

Enginebill Says:

To work around Vista's compatibility problems and make your old games run as they should, turn on Compatibility Mode. This works for XP games, as well as those made for earlier versions of Windows.

First, locate the game's icon in your Start menu or find its executable file through Windows Explorer. Right-click on the icon and select *Properties*.

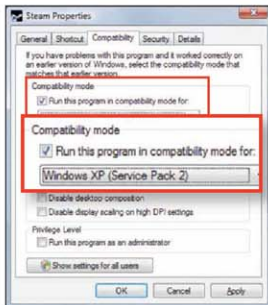
Click on the *Compatibility* tab in the Properties menu.

Under the Compatibility Mode section, put a check in the box next to *Run this program*

in compatibility mode for, and then select the appropriate operating system for the game. In most cases, this will be Windows XP with SP2.

Click *Apply* and then *OK*. Your game should now run fine in Vista, using compatibility settings for its originally intended OS.

I have tried this method on a variety of games, including *Black Hawk Down*, *Warcraft 3*, and many others, with no problems.



SELECT YOUR GAME'S native operating system from the list in the Compatibility tab to make the game behave in Windows Vista.

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Calibrate Your HDTV to High-Def Perfection

YOU SPENT A lot of money on your fancy new HDTV, but the set's picture probably isn't as good as it could be. If you want to see exciting sports events and movies that look the way the broadcasters and filmmakers intended, you need to calibrate your HDTV.

Fine-tuning your picture with just your eyeballs and instincts is theoretically possible. But if you want to get it right, you should use a DVD-based calibration tool.

You likely already have THX Optimizer, since it comes on every commercial DVD bearing a THX logo. But you don't have all of it. Some of the Optimizer's tests require special blue glasses that you must buy

through mail order from THX.com. The glasses cost only \$2, plus an additional \$2.50 for shipping and handling.

THX offers a decent set of test patterns, although they're not as complete and well explained as some stand-alone products. Nor are the written instructions as helpful as the narrated ones on stand-alone discs.

Not surprisingly, considering THX's background in cinematic audio, the Optimizer can also assist in setting up your home theater's surround-sound system.

Imaging Science Foundation's \$30 HDTV Calibration



THE HDTV CALIBRATION Wizard uses live video instead of test patterns, so it gives you a good sense of what your real picture will look like.

Wizard (imaging-science.com) is a tool cocreated by Imaging Science, Microsoft, and Monster Cable. The disc walks you through calibration without using a bunch of unnecessary tech jargon.

The Wizard uses live video instead of test patterns; the clips are easier to look at,

and they give you a better sense of what your TV's picture will look like. For instance, to set the black level (an extremely important setting that almost always has to be fixed), you get a close-up of a man's black shirt and coat, and you simply adjust the setting until you can see the difference

between the two.

Once you get the TV right for the DVD input, jot down those video settings on a piece of paper; then reenter them for each of the other inputs, tweaking them a little as needed until the image looks as good as possible.

—Lincoln Spector

ANSWER LINE

ASK YOUR QUESTION AT FORUMS.PCWORLD.COM

? How do I get Windows to stop asking me for a password when I boot my PC?

Wesley Harris, via e-mail

WINDOWS REQUIRES A log-in password for a reason: to protect you. If someone else can log in as you, they may be able to send out e-mail under your name, access your encrypted files, log in to Web sites as you, and even make purchases using your credit card number.

You can protect yourself from the worst of those offenses without a log-in password—just enter passwords at other times. For instance, you can set up your e-mail system to require a password, and you can keep sensitive files in a TrueCrypt vault. But giving up the log-in password removes a layer of security.

Still, if only trustworthy people have access to your PC, and if you take the right precautions, turning off Windows' native password protection probably won't do you harm.

Turning the password off is simple: Select **Start>Run** (just **Start** in Vista), type **control userpasswords2**, and press **<Enter>**. Uncheck **Users must enter a user name and password to use this computer**.



IF ONLY TRUSTWORTHY people have access to your PC, and if you take precautions, turning off Windows' password feature likely won't do you harm.

When you click **OK** or **Apply**, a dialog box will ask you which user should be logged on automatically. Entering your name and password this one time will free you from having to type them in again.

—Lincoln Spector

Cyberpower recommends Windows Vista™ Home Premium



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Make Vista Look and Act Like Windows XP

YOUR NEW PC came with Vista. Maybe your office deployed Vista. Or perhaps you got caught up in the early hype and bought the OS. Whatever the case, you're now stuck with it. The following tricks will help you feel more at home in Vista.

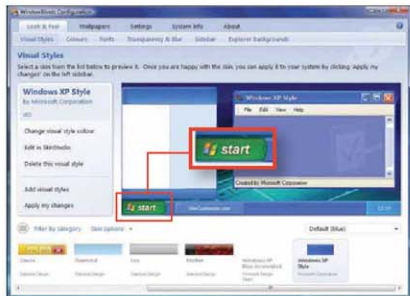
To make your OS look and feel more like XP, and to improve its performance, disable Aero Glass by right-clicking any empty area of the Desktop and then clicking *Personalize* in the context menu. Next, click *Window Color and Appearance*. Clear the *Enable Transparency* check box, and click *OK*.

For maximum XP-ness, call in some outside help: Star-

dock's \$20 WindowBlinds (find.pcworld.com/61383) lets you tweak Windows' appearance or choose from hundreds of user-designed themes—including the aptly named Windows XP Style, which comes complete with a big green Start button.

Now it's time to revert to Windows' classic Start menu. Open the Control Panel and type *start menu* in the search box. Click *Change Start menu to Classic view*, and then choose *Classic Start menu*. Click *Apply*, and say hello to the classic menu layout.

Next, restore XP's familiar hourglass pointer: Right-click on any empty area of the Desktop, and choose



STARDOCK'S WINDOWBLINDS INCLUDES an excellent Windows XP-style theme complete with a Start button, but it'll set you back \$20.

Personalize•*Mouse Pointers*. In the *Scheme* drop-down menu, select either *Windows Standard* option. Click *OK*.

XP never bothered you with anything like Vista's User Account Control, so if you truly want to re-create the XP experience, UAC must go. Open Vista's Control Panel and type UAC in

the search box. Click the *Turn User Account Control (UAC) on or off* link. On the next screen, clear the *Use User Account Control (UAC) to help protect your computer* check box, and click *OK*. Rebooting seals the deal, sending that annoying UAC back to hell where it belongs.

—Rick Broida

FACT CHECK ROBERT STROHMEYER



True or False: Wi-Fi Users Don't Need a Software Firewall

AS WI-FI ROUTERS have become ubiquitous on home and business networks, a strange rumor has made its way around the Net: Namely that, because your wireless router has a built-in firewall, you needn't bother installing any software firewall on your PC. Hardware firewalls are superior to software-based ones, peo-

Think your router's firewall is enough protection against online threats? Think again.

ple say, so why bog down Windows with resource-hogging security suites?

Don't believe it.

It's true that nearly every Wi-Fi router on the market has a built-in firewall. Unfortunately, that protects you only from things like port scanners, which continually search the Internet for vulnerable PCs.

What your router's firewall won't protect you from is yourself—and you are probably the biggest threat to your PC's security. You surf the Web, download files, open e-mail attachments, and run programs. Doing any of those things can potentially expose you to worms and Tro-

jan horses that can initiate communication with the Internet from inside your PC.

Software firewalls will warn you about threats that are already on your system. Charles Koldyge, research director of secure content and threat management products at IDC, recommends running a firewall, such as ZoneAlarm (find.pcworld.com/61413), that constantly scans Windows for application activity that attempts to send information online and prevents malware from altering your system configuration. No wireless router can do that.

Ultimately, going online with only a router firewall is a bit like riding a motorcycle while wearing nothing but a helmet. Sure, you have a bit of protection, but you're mostly naked. Visit find.pcworld.com/61347 for help in choosing a security suite.



SOFTWARE FIREWALL APPS like the free Comodo (shown here) or ZoneAlarm monitor your PC's inbound and outbound traffic.



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STEVE BASS'S HASSLE-FREE PC

Eliminate Hassles With Antivirus, Flash, Task Manager, and iTunes

HAS THE NEW edition of AVG, your beloved free antivirus tool, slowed your system to a crawl? Is the sound missing from your favorite time-wasting YouTube videos? I have fixes for those hassles, plus an easy way to restore the Windows Task Manager Toolbar and a free utility to transfer music from your iPod to your PC.

Speed Up AVG Free Antivirus

The Hassle: I upgraded to AVG Free 8.0, and now Firefox is slow and my whole system is unusually sluggish. What happened to my favorite antivirus program?

The Fix: The latest version of AVG Free (find.pcworld.com/61359) does more than detect viruses; it has stronger protection against malware and malicious sites. (For more about AVG's benefits, see page 55.) But one of the new security tools, LinkScanner, can bog down some PCs. LinkScanner checks Google, MSN, and Yahoo

Get the lead out of AVG, fix the Windows Task Manager toolbar, and dump duplicate files.

search results for exploits or phishing expeditions. The tool disguises itself as an Internet Explorer component so that malware programs can't detect it and hide from it.

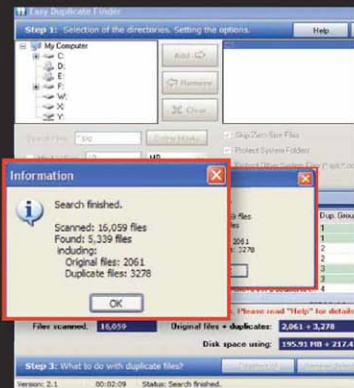
If LinkScanner is a drag on your PC's system resources, you can remove it by downloading and reinstalling AVG Free (and no, you don't have to uninstall it first). When installation starts, choose *Add/Remove Components*, click *Next* for a list of components, uncheck *LinkScanner*, and finish the process.

You'll probably need to reboot, and make sure to do a manual update to grab the most current virus definitions. To suppress any annoying warnings that LinkScanner isn't working, choose *Tools*, click *Advanced Settings*, *Ignore Faulty Conditions*, check the *LinkScanner* check box, and click *OK*. If you still aren't happy with AVG, try Avast Home Edition (find.pcworld.com/61358); or for under \$30, use my favorite, Kaspersky Anti-Virus 2009 (find.pcworld.com/61357).

TOOL OF THE MONTH

Easy Duplicate File Finder

IF YOU'RE TIRED of duplicate-file clutter, try Easy Duplicate File Finder (find.pcworld.com/61356). Search on all files or just images or videos, and filter for size. You can delete duplicates, or safely move them to another folder. The tool guards against deleting system files and folders, so no need to worry. This freebie works in XP and Vista.



EASY DUPLICATE FILE FINDER cuts down space-hogging clutter on your hard drive by searching for unwanted duplicates.

No Sound on the Web?

The Hassle: Suddenly I can't get audio when I play a video—on YouTube or CNN, for example—from within Firefox or Internet Explorer. Odd, because I can play and hear MP3s in Windows Media Player, and system sounds work, too. Talk to me.

The Fix: Here's a quick news flash about Flash: The last time you upgraded your Adobe Flash player, a handful of Registry entries that handle the mapping of Microsoft codes probably went south. The fix will take a few minutes. Read the tutorial at find.pcworld.com/61361 and download the .reg file from find.pcworld.com/61360.

Restore Task Manager's Toolbar

The Hassle: XP's Task Manager somehow lost its tabs. I don't have option tabs, or even buttons, and the only way I can close it is from the system tray. What gives?

The Fix: It sounds like you've been clicking where you shouldn't—on a blank area surrounding Task Manager's tabs. One of your clicks stripped Task Manager of its menu bar. You can bring back its default setting by double-clicking any gray area on the Task Manager window, which will cause the menu bar to reappear magically. Okay, you can stop clicking now. It's fixed.

Recover Lost Tunes From an iPod

The Hassle: I recently reinstalled Windows, but forgot to make a backup of over 400 songs and playlists that I had recently added to my iPod. Now I discover that iTunes won't allow me to transfer anything back to my PC. Am I stuck?

The Fix: I'm going to make you a happy iPod user. Grab a free copy of iDump (classy name, eh?) at find.pcworld.com/61377 and let it transfer all the tunes on your iPod back to your computer. ●



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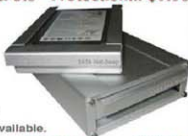
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What is This Notice About? This Notice is about a lawsuit which has been filed in the Superior Court of Santa Clara County in California entitled *Heverly/Magpiss vs. Symantec Corp.* On May 7, 2008, the Superior Court certified this case as a class action on behalf of persons and entities who purchased online upgrades of certain Norton antivirus and internet security-type software products, the installation of which resulted in the uninstallation of another Norton subscription product, prior to the expiration of that product's subscription. Examples of this software include Norton AntiSpam, Norton Personal Firewall, Norton AntiVirus, Norton Internet Security, Norton SystemWorks, Norton Confidential and Norton 360. The class consists of persons and entities who installed their upgrade product between December 5, 2001 and April 11, 2008, but does not include those who purchased upgrades through Symantec's online store.

What is This Lawsuit About? The lawsuit alleges that Symantec Corporation, the company that sells Norton computer security products, has an unlawful policy of terminating subscription time of certain customers who purchased upgrades, without providing a credit or refund for unused subscription time and fails to disclose this policy. Symantec denies these allegations and asserts that, at all times, its actions and business practices have been lawful and appropriate. The Court has not ruled on the merits of the claims.

Why Did I Get This Notice? You have been sent this notice because you may be a member of the class described above and your rights may be affected by the lawsuit.

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If you wish to be excluded from this case, you must send a written request for exclusion in accordance with the directions set forth at www.heverly-nortoncase.com. Requests for exclusion must be postmarked by November 19, 2008.

Where Can I Get More Information? This is only a summary notice. You should go to www.heverly-nortoncase.com to obtain more detailed information.

How Do I Contact the Lawyers for the Class? The email address for the lawyers representing the class is nortoncase@heverlylawyers.com

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Time for Change? Not Necessarily

YOU'VE JUST INSTALLED the mostly estimable Firefox 3. Now you proceed to make an online purchase and head straight for the checkout page. The page claims to be secure, but...whoa! Where's the little lock that used to be to the right of the address? Why isn't the entire address yellow, signifying a secure site? Because, in the words of the immortal Dr. John, "Somebody changed the lock."

Oh, it's still around. It just moved to the status bar down in the lower-right corner of the window. You can almost see the justification for the change: Showing the lock there has a long history, particularly with Internet Explorer. You could argue that a lock in that spot is the de facto indicator of a secure page, and that it's simpler to tell users to look there for the icon. But putting the lock beside the address makes so much sense that Microsoft moved it to that spot in IE 7. Smart move. Firefox should have stuck to its guns.

But no. In what's meant to be an improvement, the new browser dumps the yellow address bar for clickable color-coded "Instant Web Site ID" indicators that appear at the left of the URL. They're supposed to improve security reporting, but in reality they're hopelessly geeky and confusing. How geeky? A green background for a site's icon signifies that the page supplies identity information and is encrypted. Blue means the site is encrypted but doesn't supply identity info. Gray is for sites that don't report much of anything at all.

Unfortunately, the identity info Firefox looks for is something called an Extended Validation Certificate, which most sites simply don't supply. Good-to-go green icon background? You won't see it at Amazon, Bank of America, Google, and Wells Fargo—or even Mozilla.org itself. Click, and you discover that "This web site does not supply identity information."

Things can get even weirder. Buy.com's home page is no-info-supplied gray. Hit the sign-in page, and you're in the secure-and-identified green.

Gmail? Blue, at least to start. The sign-in is encrypted, but it's run by (unknown)—uh, hardly. If you log in the standard way, the icon's background turns gray, giving you a clue that your session has no encryption, a bad idea if you happen to be on an insecure Wi-Fi network. (You can make sure that your connection to Gmail is true-blue secure by starting at <https://mail.google.com>, or go into the settings and choose a secure connection by default.) That switch from a blue back-



Too many software developers love to alter even the parts of their programs that work.

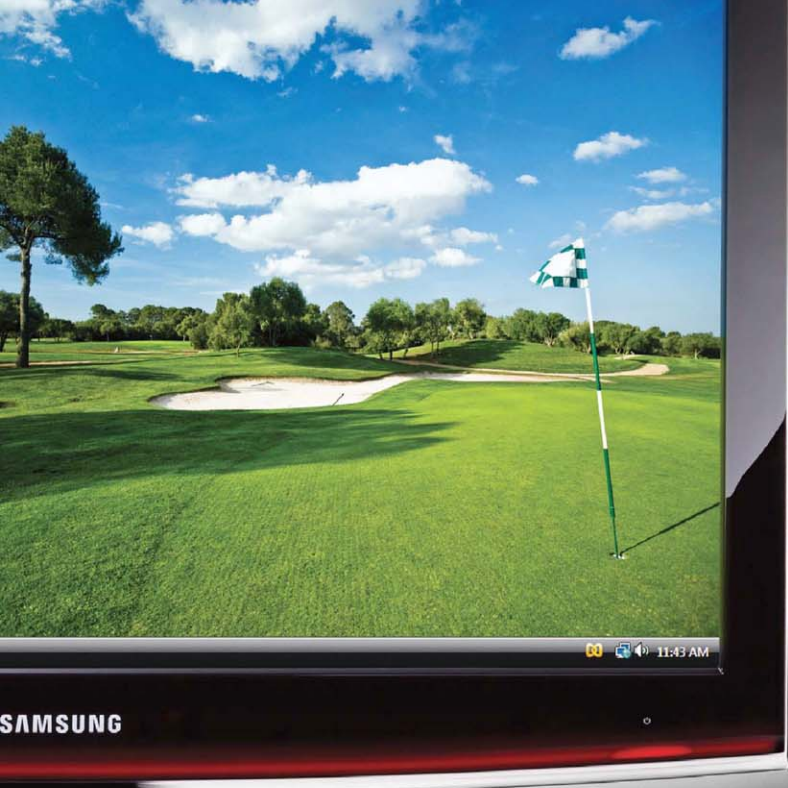
ground to a gray one offers useful information, but the effect is a lot easier to miss than the yellow-to-white transformation of the entire address box, as in Firefox 2. Like Vista's in-your-face User Account Control, this is the kind of hopeless user "protection" that's so confusing it will largely be ignored.

It's also the kind of change that seems a lot better in developers' PowerPoint slides than in their code. Microsoft remains the undisputed leader in this sort of feckless alteration, from the "personalized" (more like disappearing) menus of Windows and older Office versions to Office 2007's dictatorial "Menus are bad for you" design, which has undoubtedly prompted a steep rise in the world's usage of foul language. And virtually every time anybody's browser undergoes an update, the designers insist on changing the look of the icons and buttons, and moving them around in ways that are always far more annoying than helpful.

Firefox 3 has many real improvements, including a far better method of handling passwords and a "smart location bar" that remembers sites you've visited the instant you start typing. I just wish its designers had quit when they were ahead. ●



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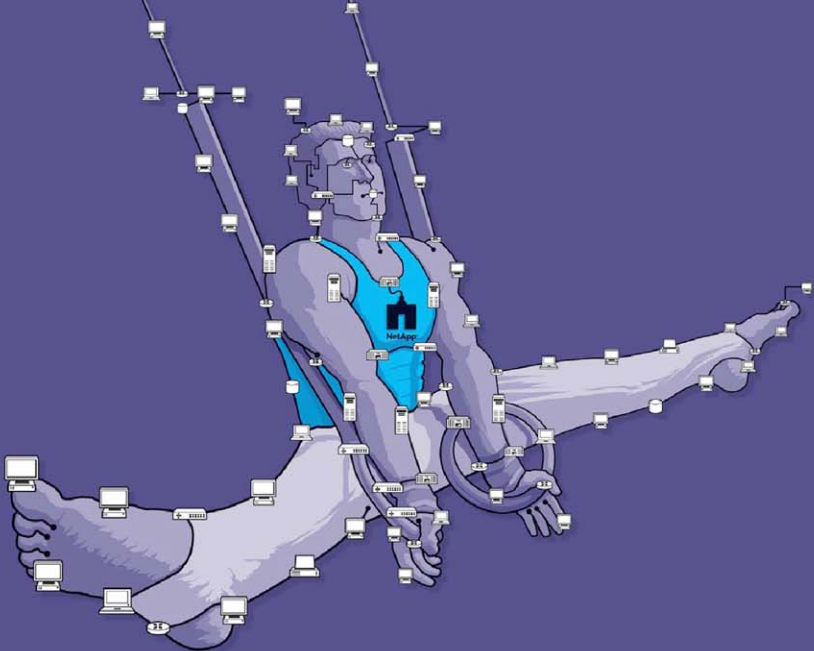
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