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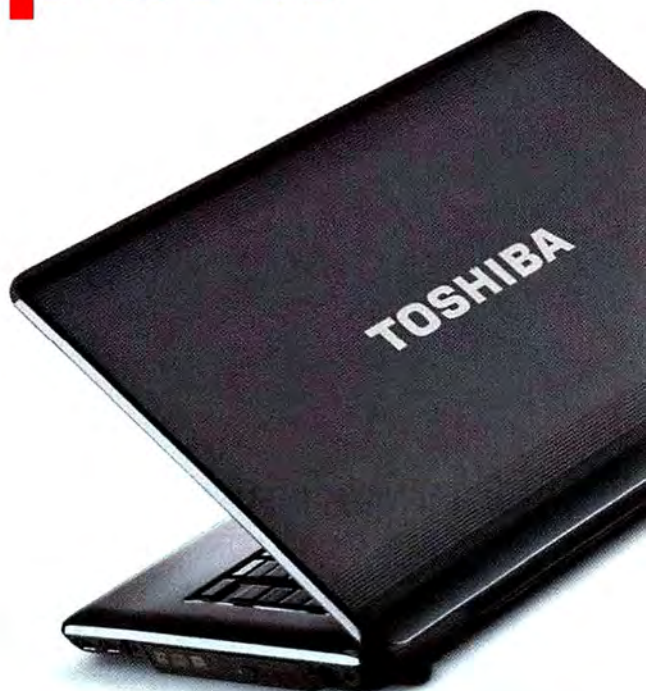


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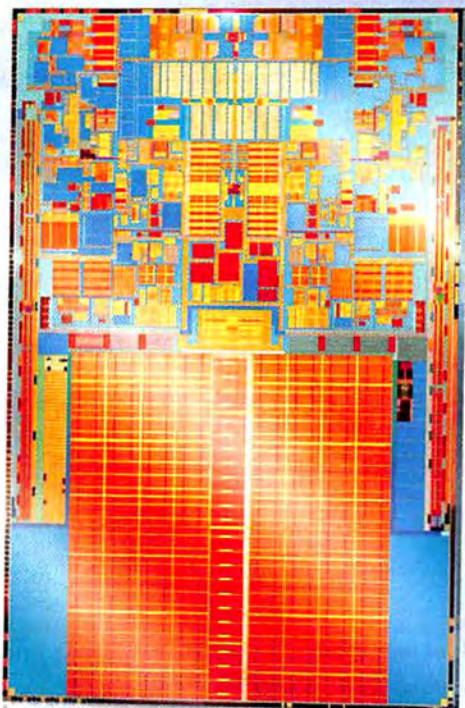
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## The Nonstandard World of Standards

HERE'S AN UNCONTROVERSIAL stance: I'm pro-standards. When companies agree on consistent ways of doing things, it makes their wares more versatile and less expensive. The examples are endless, from the original IBM PC platform—of which every Windows machine is a descendant—to modern developments such as USB.

Standards aren't always pretty, however. And for the past several years, the poster child for ugly standards has been the much-delayed high-speed wireless-networking specification 802.11n.

That fact came to mind as we tested routers for "The Most Winning Wi-Fi Yet" (page 94). All of the models in the review are "draft-2.0 n" units, based on the second pass at a preliminary version of the 802.11n standard. That's an awfully tentative, convoluted state of being for a spec that was supposed to have been complete in 2006. (The most recent timetable has the final version arriving sometime next year...in theory.)

To be fair, performance-wise the best of the draft-2.0 n routers are less sketchy than the moniker suggests. These products aren't based on a completed standard, but they offer zippy speeds, reliable interoperability with devices from other manufacturers, and a promise

*When tech companies find common ground, everybody benefits. Eventually. But getting there can be anything but simple.*

that firmware updates will bring them into compliance with the final spec.

"They're good, and there's no reason not to buy one now," says Senior Editor Yarden Arar, who has covered Wi-Fi almost from the start. That's a far cry from the state of affairs in 2006, when vendors rushed out the first draft-n routers. They were so shaky, we refused to name a Best Buy. And back then the Wi-Fi Alliance, the industry trade group, said it wouldn't certify any 802.11n gear until the standard was final—a stance that it cheerfully violated when it began certifying draft-2.0 n products.

### Standard? What Standard?

At least everyone involved with Wi-Fi has agreed all along that there must be a single next-generation standard. It's an improvement over the epic, pointless corporate squabbling that surrounded the rollout of high-definition optical discs. Rather than rallying around a standard, the industry splintered into the Blu-ray and HD DVD camps, which poured billions into developing and marketing the similar but incompatible formats. When the HD DVD forces

finally cried uncle in February, everyone who had bought an HD DVD player and movies was left with an expensive doorstop and some shiny coasters.

The bottom line: You can't depend on manufacturers to make standards easy. Herewith, a few tips for avoiding the worst standards-related headaches.

**Beware of unfinished standards...** If a product that's based on a rough version of a spec doesn't come with a guarantee that it'll be upgradable to the final version, when available—which the early draft-n routers lacked—then it's not really based on a standard.

**...and of things that sound standard but aren't...** Want to use USB peripherals wirelessly? Different products do it through Certified Wireless USB, WirelessUSB, and Cable-Free USB. But these similar, and similar-sounding, technologies aren't compatible with one another.

**...and of "standards" that won't be.** Both Fujifilm and Olympus make some nifty cameras. But when they adopted a media format called xD-Picture Card that was short on true advantages over SD, it didn't make much sense. These days, SD is everywhere and xD hardly matters.

**Let natural selection do its work.** When the tech world needs a standard, it usually gets one sooner or later. But plunk down your money too early, and you may be investing in obsolescence.

All of that advice adds up to one overarching point: *It's okay to wait.* Me, I'm still using an aging 802.11g Wi-Fi router, a low-def DVD player, and USB that's wired. I won't tell you my politics, but when it comes to standards, it's obvious that I'm a proud conservative. ●

Read Editor in Chief Harry McCracken's blog at [blogs.pcworld.com/techlog](http://blogs.pcworld.com/techlog).

### THIS WEB SITE COULD BE A LIFESAVER



I'VE WRITTEN ABOUT hundreds of sites for *PC World* over the years. This time it's personal. Emru Townsend, a veteran PCW contributor, is battling leukemia. A bone-marrow transplant could save his life. He has taken the search for a donor online at Heal Emru ([www.healemru.com](http://www.healemru.com)). The site isn't just about Emru's quest: It explains how to register as a donor and spreads the word about drives all over the United States and Canada. Emru's donor could turn out to be anyone of any

ethnic background; you might or might not be a match. But even if all you do is learn more about this major health issue and consider registering, a visit to Heal Emru is a good deed that won't take much of your time. Emru will thank you—and so will we.





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Our site's "Jerks of the Web" story really hit a nerve ([find.pcworld.com/60691](http://find.pcworld.com/60691)). Are some people just rude all the time, or does the Internet lend itself to more than its fair share of bad manners? Tell about your experiences of jerky behavior on the Net by going to the article and clicking on 'Comment'.

## Jerks of the Web

Well, the Internet is merely an extension of life: You get jerks in everyday life, and on the Web as well. In the online world, as in the "real" world, I have learned to just back away and not feed the fire. There is a lot of immaturity around—on the Web and in the real world.

*Coastie65, from the PC World forums*

I was a part of the [World of Warcraft] funeral raid [mentioned in the article]. People can call it grieving, as the article says, but people need to step away from video games and realize that they are just that—games. Games are not places where you should live out real-life events. When people attempt to turn them into serious rituals, then there *should* be pushback.

Did we raid the electronic funeral to make some nerds mad? Maybe. But in the end it was a clear statement. If you want to make an online medium your home, and your personal place where you can enact real-life tragedy, then you should reevaluate your priorities, turn off your PC, and take a step outside. No one needs to deal with your real-life drama in a game about goblins and wizards fighting each other.

*Pags, from the PC World forums*

A jerk...is a jerk...is a jerk! People who are jerks in person are jerks on the Internet, via e-mail, on paper, on the phone—you name it! Sadly, it's the [Internet's] benefit of anonymity that allows some people to exercise their "jerkiness" to the extreme.

*PC101, from the PC World forums*

The reduced chance of repercussions reduces the inhibition against "antisocial behavior." What the Web has created is the opportunity to instantly be a jerk to someone thousands of miles away and to have this behavior seen by a number of people that is several orders of magnitude greater than what "normal everyday life" would allow.

*JimH443, from the PC World forums*

It is kind of like the movie *Fight Club*, with many people scared to express their frustrations in real life, so they create alter egos that are volatile and childish. It just shows that technology and humanity are two different species.

*Cmanbrazil, from the PC World forums*

The younger/more unsophisticated the people you deal with on the Net, the more mindless abuse you will see.

*Pikachu, from the PC World forums*

## Updating Ancient Firmware

Steve Bass seems to have omitted a relevant piece of advice concerning "ancient" routers and whether or not to replace them [*Steve Bass's Hassle-Free PC*, April]. One of the things that I have done (and encourage others to do) with older routers is to check for updates to the router's firmware at the manufacturer's Web site. In some cases, a firmware update will keep you from having to replace the router.

*Richard Kindall, Hutchinson, Kansas*

## Can Microsoft Make Users Love Its Software?

[[find.pcworld.com/60692](http://find.pcworld.com/60692)] Microsoft has a huge, *huge* image problem as a bully that treats users as criminals. The company on top should be humble [knowing] that people chose it instead of arrogantly assuming that they're indispensable. Change [that attitude], and then maybe people will love Microsoft.

*Mathion, from the PC World forums*

If you're Microsoft, what is the answer to the iPod Touch? Microsoft's Zune was designed to compete with the Classic iPod. Does it just flush the Zune and come out with an MP3 player that's running Windows Mobile?

*Goshenind, from the PC World forums*

I like to bash Microsoft as much as anyone. But I love Windows Media Encoder and Windows Movie Maker for taping and editing shows and movies off the TV dish. Nothing is better, more effective, or more efficient, *and* it's free.

*Snorg, from the PC World forums*

## iPhone Software Development

[[find.pcworld.com/60693](http://find.pcworld.com/60693)] Sure, Macs are nice, but they're so damn expensive it gives people who can afford only >>



PCs no option for iPhone programming. I was expecting to see a cross-platform SDK [software development kit], but apparently Apple thinks that only consumers and enterprises with Macs are worth its time and that Windows compatibility is just to shut people up. If it really wants companies to buy the iPhone, it *needs* a Windows SDK.

*Trevor97007, from the PC World forums*

That the iPhone plays well with a Windows PC is awesome. However, for

software development the situation is different. Some features of the iPhone SDK are relatively straightforward to implement on Mac OS X, given the shared code base, but very hard on Windows. The iPhone SDK is not just a cheap collection of tools. It's the real deal. So you can bemoan the lack of a Windows-based iPhone SDK, but which would you rather have: a so-so set of tools playing to the lowest common denominator, or complete access to the innards of a full-fledged OS?

*Cweberusa, from the PC World forums*

ing your mother's maiden name, use the surname of one of your childhood neighbors, a character in a novel, or a made-up name. Thinking up these pseudo-answers is a lot of fun.

*Laurent Hodges, Ames, Iowa* ●

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 ([find.pcworld.com/55165](http://find.pcworld.com/55165)). Send e-mail to [letters@pcworld.com](mailto:letters@pcworld.com).

## TELL US WHAT YOU THINK

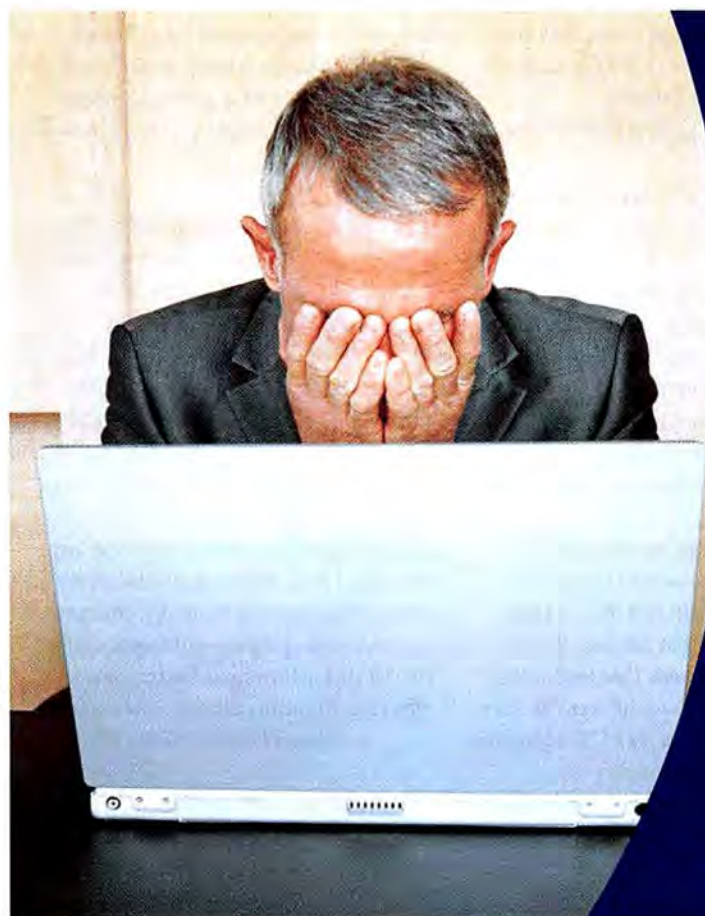
RATE THIS ISSUE by going to [www.pcworld.com/pcwinput](http://www.pcworld.com/pcwinput)—you could win a \$300 Amazon.com gift certificate. The site explains the official rules and offers an alternate method of entry into the prize drawing.

## Security on the Web

Paul F. Roberts's article "Sites' Personal Questions May Pose Security Risk" [*Security Alert*, May] surprised me. I thought it was standard to make up fake answers to such questions (writing them down in an encrypted file if necessary). For example, instead of enter-

## CORRECTION

IN MAY'S "THE Web's Best Free Stuff," we referred to Spamfighter Pro, which costs \$29 after a 30-day trial, rather than to Spamfighter Standard, which is the free version. PC World regrets the error.



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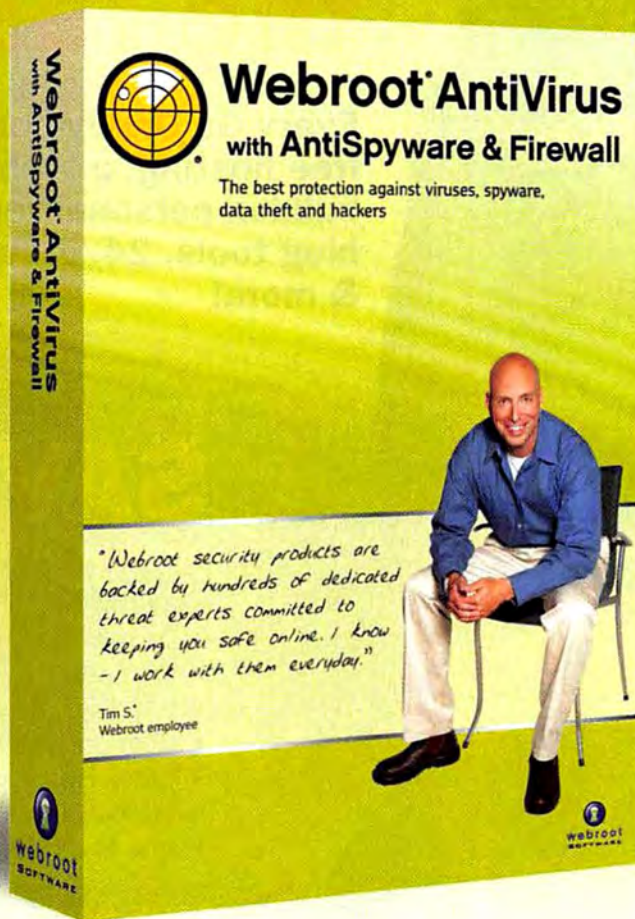


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# Forward

## Firefox Winning Latest Browser Battle

ERIK LARKIN

TODAY'S CHALLENGING, feature-rich Web sites require a gutsy browser that can save you time with better performance, enhance your experience with new tools, and help protect your PC via stepped-up security.

Recognizing the opportunity, Apple, Microsoft, and Mozilla each want their latest product to be your browser of choice. I ran Apple's Safari 3.1, Mozilla's Firefox 3 (the feature-complete beta 5 release), and Microsoft's Internet Explorer 8 (still in an early beta version) through a series of tests—and compared their features—to see which one is the best bet.

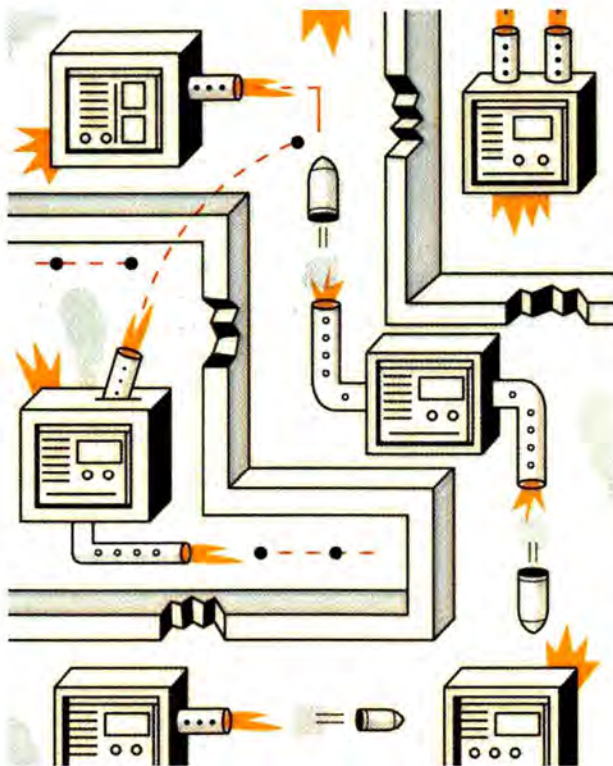
### How They Stack Up

My pick is Firefox 3, the most customizable of the three. If a polished package that doesn't need a lot of tweaking suits you, Safari might be the right choice; just be aware of its minor security issues. Microsoft's IE 8 is too embryonic to judge, but its new touches so far aren't compelling.

(Want more choices to consider? See "Two Worthy Alternatives" on page 20.)

I put the Big Three brows-

Improved performance and security put the open-source browser ahead of revamped versions of Safari and Internet Explorer.



ers through tests of performance and memory use. In the performance test, I ran clean versions of each browser (that is, copies with no add-ons or plug-ins) through the SunSpider JavaScript benchmark site, which measures how fast a browser processes JavaScript-heavy Web 2.0 pages. Webkit.org pro-

vides both the standard test and the open-source core for Safari and other browsers, but its test remains applicable to all browsers.

Safari 3.1 completed the test in just over 4 seconds—significantly faster than its current competitors, Firefox 2 and Internet Explorer 7. Meanwhile, Firefox 3 also

rocked the SunSpider benchmark, finishing in just 3.61 seconds. IE 8's 10.2-second time on the test is weak in comparison, but the browser is still in early beta form. And even so, its mark is far better than IE 7's 50 seconds.

### Memory Usage

To gauge memory use, I loaded four sites: CNN, Netvibes, PC World, and Yahoo Mail. And to check for possible memory leaks, I left each of those pages up for an hour. Firefox 3 used the least memory: 81MB to start and 85MB after an hour, versus Safari 3.1's 94MB and 95MB. It's unwise to put much stock in performance tests for an early beta, but IE 8 Beta 1 used 114MB at start and 118MB after an hour.

I also ran each browser through a set of standards-compliance tests formulated by the Web Standards Project. Safari 3.1 passed the so-called Acid2 test and earned top marks on the forward-looking Acid3 test—which gauges a browser's ability to use technology available for Web 2.0—rich sites—with a score of 75 out of 100. Firefox 3 also passed Acid2, and its beta 5 release scored 71 out of 100 on Acid3. IE 7 did



not pass Acid2, but beta 1 of IE 8 did. Microsoft reports that it is working to make the new browser more standards-compliant, but nevertheless the IE 8 beta scored only 18 out of 100 on the Acid3 test.

### The Winner: Firefox 3

Though the latest version of Firefox retains much of its predecessor's basic look, its usability has improved. For instance, as you type a Web address into the address bar, Firefox 3 searches your bookmarks and browsing history for matches based on how often and how recently you visited a given site. To see the most important Firefox 3 upgrade, open either the history or the bookmarks window. Both of them now live in an SQL database that displays them together.

You can tag bookmarks and drag a URL from your browsing history directly into a bookmarks folder. A new Smart Bookmarks folder catalogs recently bookmarked, frequently visited, and recently tagged sites.

A star icon to the right of a URL in the address bar lets you add a new bookmark with one click, but doing this unhelpfully leaves them in an unfiled category whose contents you can see only in the full bookmarks window.

On the security front, the phishing-site filter from Firefox 2, which uses a blacklist to block known phishing pages, can safeguard you from notorious malware-pushing sites. And careless typers will appreciate the revised password saver: Instead of having to decide between saving and cancel-



**SMALL TOUCHES**, such as helpful blue highlighting around an active text box (pulling you to it), give Safari its trademark Apple polish.

ing a password before you know whether it's the right one, you can defer that decision until after you log in.

Version 3 adds support for extended validation (EV) certificates, displaying a green button bearing the company's name on sites, like PayPal, that use them (they provide better site identification than do the regular certificates that many encrypted sites employ). To get more information on a certificate holder, click the button.

These changes make for a better basic application, but ultimately it's the add-ons that make the browser. Firefox 3 helps you find new extensions by including in its add-ons window a 'Get Add-ons' button for displaying and installing searched-for and recommended add-ons.

### Clean: Safari 3.1

Safari 3.1's minimalist metallic theme has clean lines and uses space well. Tabs smoothly link to the bookmarks bar above them, and pop-up notices—such as the one that appears when you add new bookmarks—use animation to flow into and out of the title bar. The load progress indicator (which fills in the address bar) is a nice design touch, as is the

blue outline around a page's currently selected text box.

The browser handles RSS feeds smoothly, and it can show all of the posts from RSS-feed bookmarks gathered in the same folder in a customizable display. On

the other hand, Safari lacks an antiphishing filter (standard in both Firefox 2 and Internet Explorer 7), and it doesn't support EV certificates. Another drawback: Safari doesn't permit third-party themes or add-ons.

### Early Days: IE 8

Unlike the new Firefox and Safari browsers, which are ready to roll, Microsoft's early beta of Internet Explorer 8 remains a work in progress. But IE 8 beta 1 does provide a glimpse of new features—such as WebSlices, which let sites create widgety snippets of information you can >>

## PLUGGED IN EDWARD N. ALBRO



**REBATES FOR HD DVD BUYERS:** Nice gesture by Amazon and Best Buy. Of course, it would be even nicer if the checks didn't read "Pay to the Order of Sucker."



**WHALE PHISHING:** Bad guys try to rip off CEOs for big bucks. In other words, they're doing to the CEOs what some of the CEOs are doing to their own firms.



**WINDOWS XP'S LIFE EXTENDED:** But only for supersmall laptops like the Asus Eee. Never has an underpowered, Chiclet-keyed notebook looked so attractive.



**GOOGLE DOCS GOES OFFLINE:** And it's free. Remind me again—why are we all paying billions of dollars every year to load up our machines with Microsoft Office?



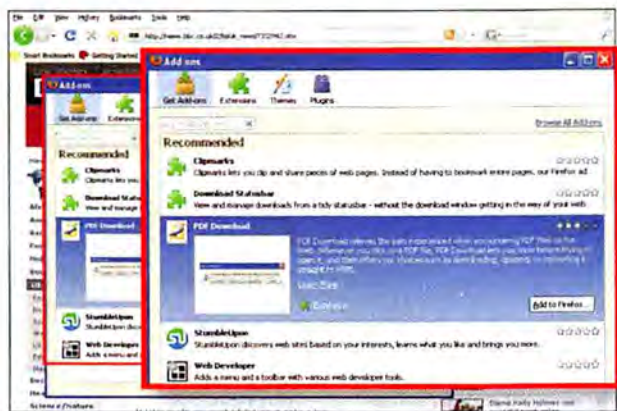
**EMERGENCY ALERTS BY TEXT:** I can just imagine the alarms those of us in the heart of earthquake country will be receiving: "Bg 1 cming ASAP. Kiss ur \*\*\* GB."



**FACEBOOK APP FATIGUE GROWS:** Enough already! We don't want to blog, IM, send a virtual tequila shot, or get a virtual hug. We have work to do!







**YOU CAN NOW find and install Firefox extensions directly from within the Add-ons management window of Firefox 3.**

view by clicking a bookmark button. You can add a WebSlice to your Favorites bar to link to an eBay auction, say, or to a friend's Facebook profile—and it will update with the latest information, just as an RSS feed would.

A second new feature is Activities: When you select text, a small green arrow

appears. Clicking it opens a drop-down menu with options for translating the text, looking it up on a map (if it's an address), or finding a definition. You can choose which Web services to use for each activity when you install IE 8, much as you are prompted to choose a default search provider for IE



**ONE OF THE new WebSlices features in Internet Explorer 8 allows you to check individual eBay auctions in an RSS-like bookmark.**

7. Right-clicking a selected text block or a page will link you to activities, too.

One of the best improvements in IE 8 is also one of the simplest: At any site you visit, IE grays out all but the domain name in the address bar. This antiphishing measure helps you spot the common scammers' technique of

disguising the real domain in a URL that may start with something like 'www.paypal.com' and list the actual domain at the end of a string of nonsensical characters made to look like site input.

Microsoft says that it is also working to improve IE 7's phishing filter; and IE 8 continues to support EV certificates, as IE 7 does.

## BROWSER OPTIONS

### Two Worthy Alternatives to the Big Three

FIREFOX, IE, AND Safari are the three most popular browsers, Internet usage statistics indicate, but they are not the only good ones available. Here's the skinny on two free alternatives, Flock and Opera.

**Flock:** To understand Flock, the self-billed social browser, picture starting with Firefox 2. Then imagine linking to sites and services like Blogger, Facebook, and YouTube. Add custom features such as a Media Bar that you can use to search for and display pictures and videos from social networking sites, and a blog editor.

Wrap everything up in a new design with buttons and sidebars that provide access to all of these features, and you have Flock. For people who don't like to customize, this browser builds in a lot of social-networking functionality.

**Opera:** If I couldn't use Firefox add-ons to mimic some of Opera's features, I would probably go with this well-made alternative.



**THE FIREFOX-BASED Flock browser uses a built-in Media Bar to make it easier for users to link to social sites such as Flickr.**

A Speed Dial start page gives you immediate access—via page thumbnails—to your favorite destinations. You can switch downloadable themes without restarting the browser, and you can add widgets such as calendars and clocks that display outside the browser.

Finally, a built-in RSS reader and site-specific settings for using cookies or JavaScript add to the usefulness of this commendable browser.

### Which One's for You?

I'm sticking with Firefox as the best browser of the three. I use my browser for everything from word processing to story research to invoice filing, and I love being able to customize it.

If you're a tinkerer, you'll appreciate Firefox 3, which may be final by the time you read this. But if you don't mind relinquishing the ability to customize in return for a nicely polished package, you might prefer Safari. Just be extra cautious at potential phishing sites.

Meanwhile, Microsoft is going to have to move fairly quickly if it wants to dissuade users' from switching to alternative browsers. It will take more than Activities and WebSlices to make IE 8 a serious contender.



Dell recommends Windows Vista® Ultimate.



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## Speech Input, GPS Make Mobile Search Smarter

WHEN YOU'RE sitting at a computer, a good search engine puts the entire Internet at your fingertips—but that probably isn't what you want when you are searching from a cell phone. Skimming pages of Google results on a tiny screen with sluggish connectivity can be frustrating, and typing keywords on a small (or soft-wire) keyboard is not fun.

New mobile search services and apps let you speak, rather than type, search terms and filter results based on proximity (on the assumption that you're likely searching for something nearby). Microsoft's TellMe, Yahoo's OneSearch, and offerings by smaller companies such as ChaCha may not be perfect, but they do try to tailor their searches to meet the needs of mobile users.

Apps that accept speech input and return Web results are the latest development. New versions of TellMe and OneSearch (at launch, available as downloads for new GPS-enabled BlackBerry devices) let you search by holding down the green Talk button and speaking keywords into the handset. The digitized audio converts into text fed to searches using the handset's location data.

### Some Dim Sum?

Results on OneSearch look and act more or less like traditional links, organized by category. When I spoke the words "dim sum," the first results OneSearch returned (under the heading Business-

es) were Chinese restaurants and a link to retrieve more of the same. The restaurant listings included links to

maps, reviews, and a call dialer; conventional search results—one an entry from Wikipedia—came next.

The new version of TellMe hadn't appeared at this writing (it should be available by the time you read this), but in a demo it, too, presented a list of businesses. Clicking any entry produced a screen bearing the company's address and phone number at the top, with icons for relevant info or tasks such as initiating a phone call, displaying a map, or making a purchase. If you don't want your GPS data to guide the search, you can tell your preferred location to TellMe. It does not provide general search results, however.

An earlier TellMe version accepts voice input for directory assistance; it's available on Sprint

and Helio GPS phones. To try out the lookup service, call 800/555-8355 or text search keywords to 83556.

Google doesn't offer users a voice search application, but you can submit a voice query to 800/466-4411 and be connected to a relevant business. Google also supports a range of SMS searches (see [find.pcworld.com/60717](http://find.pcworld.com/60717)).

At ChaCha, another search service, you can dial 800/224-2242 (for voice queries) or text questions to 242 242. In an interesting twist, ChaCha uses real people (called guides) to answer some queries. It took ChaCha only a

few seconds to tell me the dates of the Democratic National Convention (August 25–28). But a query about new episodes of HBO's *John Adams* elicited info about *House*; maybe no guide was on duty?

### Other Search Options

V-Enable has announced a voice-enabled application for its Free Mobile 411 ([freemobile411.com](http://freemobile411.com))

Web-based lookup service for Sprint users; others can type in keywords and, if they come up empty, opt to connect to a live operator—but in that case, Directory Assistance charges will apply.

Go2 ([www.go2.com](http://www.go2.com)) accepts text input only, but its menu-based structure acts as a filter that permits you to focus on restaurants, movies, news, and the like—or conduct a general search.

Mobile search services expect to make money through ads, sponsored results (Go2's restaurant search results, for example, included a link to Zagat's site) and transactional fees (for example, a cut of a movie ticket purchase). Users need only consent to the use of their location information. Since so many of these services are new, it's unclear what impact advertising will have, and I wouldn't want to use them without an all-you-can-eat data plan. But for targeted information on the go, they should prove to be very helpful; for once, Google has some catching up to do.

—Yardena Arar



YAHOO'S ONESEARCH PROGRAM for recent BlackBerry devices lets you speak a query (left) to get relevant Web results such as the status of a flight.



MICROSOFT'S TELLME responds to voice queries with attractive screens.



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## Counterfeit Office Users to Get Nags

IF MICROSOFT thinks that you're using a counterfeit version of its Office suite, a new pilot program will show nagging pop-up notices whenever you use the software.

This step extends Microsoft's Office Genuine Advantage initiative, which detects illegitimate copies of the productivity suite and blocks owners from downloading free files and non-security-related updates. Until now, OGA lacked a notification component.

The nag-notice program will have a trial run in Chile, Italy, Spain, and Turkey. Past changes in Microsoft's antipiracy technology and

practices began as similar small trials but later went global.

Microsoft is already nagging

people that it believes are using counterfeit versions of Windows, part of the company's unpopular Windows Genuine Advantage effort.

According to Microsoft, a pop-up notification indicating that the copy isn't valid will appear the first time a user opens an illegal Office app each day, followed by another pop-up 2 hours later.

The process will continue for up to 30 days. After that, a "visual reminder" will appear on all Office apps when they're used, but no one will be prevented from accessing data or editing files.

—Gregg Keizer



## GADGET FREAK DAN TYNAN



### I Want Wireless Entertainment, and I Want It Now

TWO THINGS REALLY irritate me. One is the miles of wire that you can see strung behind and between all the electronic devices in my

home. The other is plastic—specifically, the 300 shiny plastic CDs stacked under my desk, waiting to be ripped into MP3s. And don't get me started about all the DVDs under there.

I want an easy, affordable, wireless way to move audio and video around my home. For years, the consumer electronics industry has promised us exactly this technological advance—in fact, the

"wireless HD streaming demo" has become a Consumer Electronics Show cliché. But the show fades from memory, and we remain tangled in a wired/plastic world. Frankly, I'm tired of it.

#### 21st-Century Sneakernet

Right now I move my music around my house by taking my Zune Mini and plugging it into the auxiliary jack of whatever stereo system happens to be nearby. Sure, wireless alternatives for audio exist, but they're hardly ideal.

The first option is a whole-home audio system installed by a custom integrator for \$5000 or more—a tad pricey for my gadget budget.

Next are slightly less expensive stand-alone wireless audio systems. The gold standard here is the Sonos Digital Music System. Attach a Sonos ZonePlayer to a computer or hard drive containing your music, and it beams tunes via Wi-Fi to any other ZonePlayers in your house. A nifty handheld remote makes setting up different zones (jazz in the bedroom, hip-hop in the basement) easy. I really like the Sonos, but at \$1000 for two rooms plus \$350 to \$500 for each additional zone, it's out of my range, too.

Logitech's Squeezebox Duet does something similar for about half the price (see "An Ele-

gant, Affordable Music System," on page 72).

But neither the Duet nor the Sonos can play copy-protected songs from iTunes (Sonos does

support DRM music from the Zune Marketplace). Yes, screwed by DRM once again.

Finally, there are lots of cheap point-to-point wireless setups. For example, you can attach a matchbook-size i2i Stream (\$130, [www.i2igear.com](http://www.i2igear.com)) to your computer or stereo, hang another one around your neck, and beam music between them. It works okay within 20 feet or so.

But I still end up walking around wearing ear-

buds and lugging a device that's almost as big as my Zune but doesn't sound nearly as good.

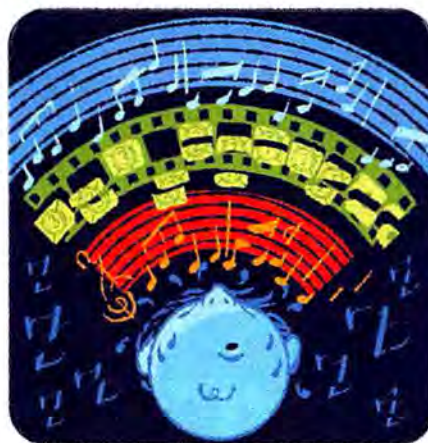
#### Dreaming of Streaming

I think wireless music will survive its awkward adolescence and become common in homes. High-def video is another story. Dozens of vendors dream up wireless HD systems, but I've yet to see one work outside a CES exhibit hall.

"Point-to-point wireless video will be big, but I don't think we'll see a single solution," says Patrick Hurley, director of research for Telechoice. Instead, proprietary products, such as Belkin's Flywire and Gefen's Wireless HDMI Extender, will wirelessly link an HD video source to a single display. Flywire is set to ship in October; Gefen won't say when its product will be ready.

And 802.11n won't solve your problems. (See "The Most Winning Wi-Fi Yet," page 94, for a review of n routers.) Most n products are faster than g versions but work in the crowded 2.4-GHz spectrum, and video is more sensitive to interference and packet loss. An n device that runs at 5 GHz has less signal noise but a shorter range, too, so it's far from a whole-home option.

Looks like I'll be snarled in wires and shuffling plastic for a while longer. Sigh.



Wireless, multiroom home audio is here, sort of. But wireless HD video is still mostly a pipe dream.



"...if sound quality is high up on your list, you'll find a way to squeeze these bad boys onto your desktop."

"8 out of 10"



CNET.com, 3/27/08



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## New Ubuntu Version Is Improved Under the Hood

UBUNTU 8.04, nicknamed Hardy Heron, may not look much different from previous versions of the leading Linux distribution, but beneath the hood the OS has improved considerably.

What with a new kernel, a new version of the Gnome desktop, improved windowing and graphics layers, and various default configuration tweaks, nearly everything about Hardy Heron feels snappier and more responsive than the previous edition, Gutsy Gibbon.

I looked at a beta release of the operating system. The final software should be available by the time you read this. In any case the beta was so stable and polished that I was hard-pressed to recognize it as a test release. Hardy Heron is scheduled to be an LTS (Long Term Support) edition, meaning that desktop versions will be supported for three years and server editions for five years. You can tell that its developers have worked diligently to make it worthy of such lengthy service.

You can download Ubuntu for free from [Ubuntu.com](http://Ubuntu.com), or you can request a free CD of the OS, though the delivery of the free disc may take as long as ten weeks. Free documentation and community support are available for Ubuntu, but you'll have to pay for live phone support.

Ubuntu has settled into a stable look and feel over its past few releases, and this time the cosmetic changes

Code-named Hardy Heron, the latest Ubuntu Linux distribution includes new ways to try it without adding a partition to your Windows PC.

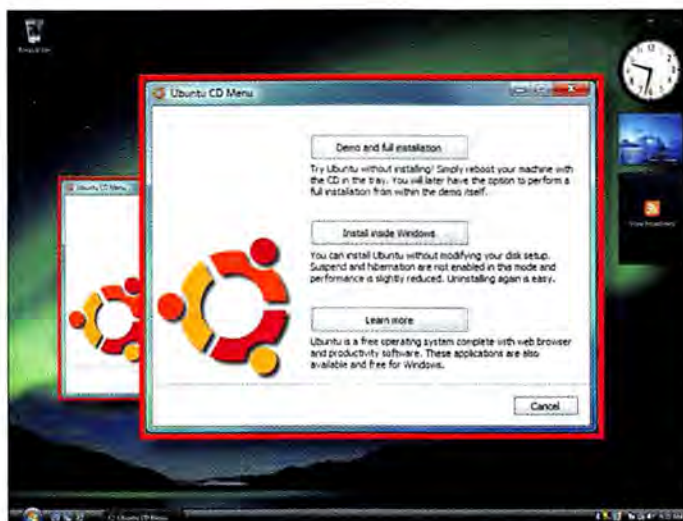
are minor. The familiar brown-and-orange color scheme remains, as does the overall appearance of the windows and controls.

But Hardy Heron's infrastructure changes have introduced real improvements

Windows PC's hard drive.

There's no need to repartition your drive and no risk of wiping out your existing data. When you boot into Ubuntu, the system reads and writes to the OS's file folder as if it were a stand-

CD/DVD burning software, feel lackluster when matched up against similar programs for Windows or Apple's Mac OS X. Overall, however, Ubuntu continues to provide a good selection of apps for most purposes, without overloading the system with excessive and redundant software options (as some Linux distributions do).



UBUNTU'S WUBI INSTALLER can install the Linux OS as a single file on your Windows hard drive. If you don't like Hardy Heron, you can easily uninstall it.

in the OS's performance. Programs launch more quickly, windows and menus feel less sluggish, and disk access is speedier. It even boots faster than its predecessor.

### Installation Options

Hardy Heron's biggest breakthrough may be in the installation process. This release offers a new, optional installation utility called Wubi, which promises to lower the barrier to getting started with Linux. Wubi runs as a Windows application and can install a complete Ubuntu system as a single file on a

alone drive. Later, if you decide that running Linux isn't going to work out, you can uninstall it just as if it were any other unwanted Windows application.

Ubuntu has updated its own application suite for version 8.04 of the OS, as well. Most notably, Firefox 3.0—which is still in beta itself—will be the default browser that ships with Ubuntu 8.04, and it appears to be a promising upgrade (see "Firefox Winning Latest Browser Battle," page 18). In contrast, other new applications, such as the Brasero

### Work in Progress

Other new features of Ubuntu 8.04 are likely to be overlooked by desktop users though appreciated by systems administrators. Among the security improvements are better memory protection and a fine-grained access control system called PolicyKit. In addition, Hardy Heron is the first Ubuntu distribution to offer easy integration with Active Directory environments, thanks to a new software package called Likewise Open.

Some longtime users will question this version's inclusion of certain advanced features, such as the new PulseAudio sound layer, which is not yet compatible with a lot of existing Linux audio software.

If my experience with the beta is any indication, however, Ubuntu 8.04 is shaping up to be a worthy upgrade for current users and a good jumping-on point for new ones. The Wubi installer, in particular, makes it ideal for anyone who in the past has hesitated to give Linux a try.

—Neil McAllister



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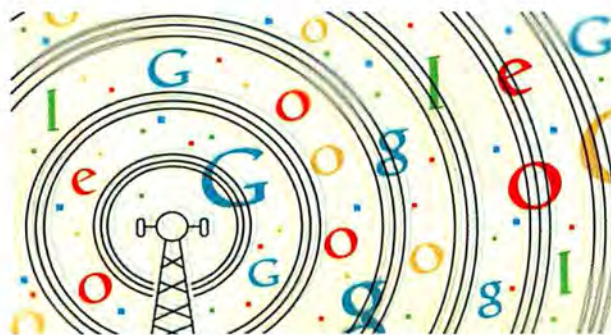


## Google Proposes Fast National Wireless Service

GOOGLE IS PUSHING hard to launch a national wireless service that promises super-fast national data access using the so-called white spaces on the analog TV spectrum.

In a letter to the Federal Communications Commission, Google suggested that the spectrum could deliver "faster, longer-range, higher data rates" than are available now from telecoms and national Wi-Fi hotspot services.

White spaces consist of the unused wireless spectrum between TV channels. Those spaces serve to prevent one analog channel from interfering with a neighboring channel. Broadcasters have long argued that the spaces can't be used because that



would create interference with TV broadcasts. After the February 2009 transition to digital TV, however, that position makes less sense.

This portion of the spectrum (the 700-MHz band) can travel long distances and penetrate obstacles such as buildings and walls, making it very desirable to various would-be developers.

By using white spaces, Google could offer wireless Internet access to many portable devices, including new mobile phones that run Google-backed Android software, now being developed by a consortium of companies.

Richard Whitt, Washington telecom and media counsel for Google, wrote the March 21, 2008, letter to the FCC.

He called the new wireless technology "Wi-Fi 2.0" and touted its ability to deliver "data rates in the gigabits-per-second range." If the FCC gives Google the green light, Whitt said, the service could be available to consumers as early as next year.

Whitt's letter also suggested that the new broadband could serve the needs of people in rural areas. And he asserted that the plan would provide "much-needed competition" to current broadband service providers.

Microsoft and the White Spaces Coalition, whose members include Dell, Intel, and Philips Electronics, are backing Google's plan.

—Tom Spring

## BETA WATCH

EDWARD N. ALBRO



### Flickr Video: Short Subjects

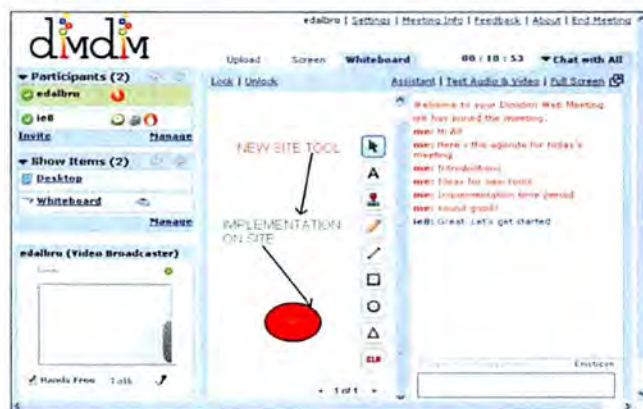
If you're a wannabe movie director who believes in brevity, Flickr's new video-sharing service (available to subscribers to Flickr's \$25-per-year premium service only) is for you. The photo-sharing giant limits videos to 90 seconds and 150MB. Uploading a video is easy, but finding it isn't, at least so far. Though YouTube will probably always be the home for pirated snippets from last night's TV shows, Flickr has a good chance to appeal to talented amateurs producing their own art. But those amateurs had better be concise. [flickr.com](http://flickr.com)

### DimDim: No-Hassle Web Meetings

DimDim lets you share your desktop, presentation, or whiteboard for free—and it does so quickly. As a presenter, you must install a browser plug-in, but on my PC that took only about a minute. People joining your meeting don't have to install anything, if they already have Flash. You can chat with participants via text or include audio and video in the meeting. DimDim worked so well in my tests that I can't imagine paying for a service like WebEx again. [dimdim.com](http://dimdim.com)

### Jiffle: Coordinate Meetings Online

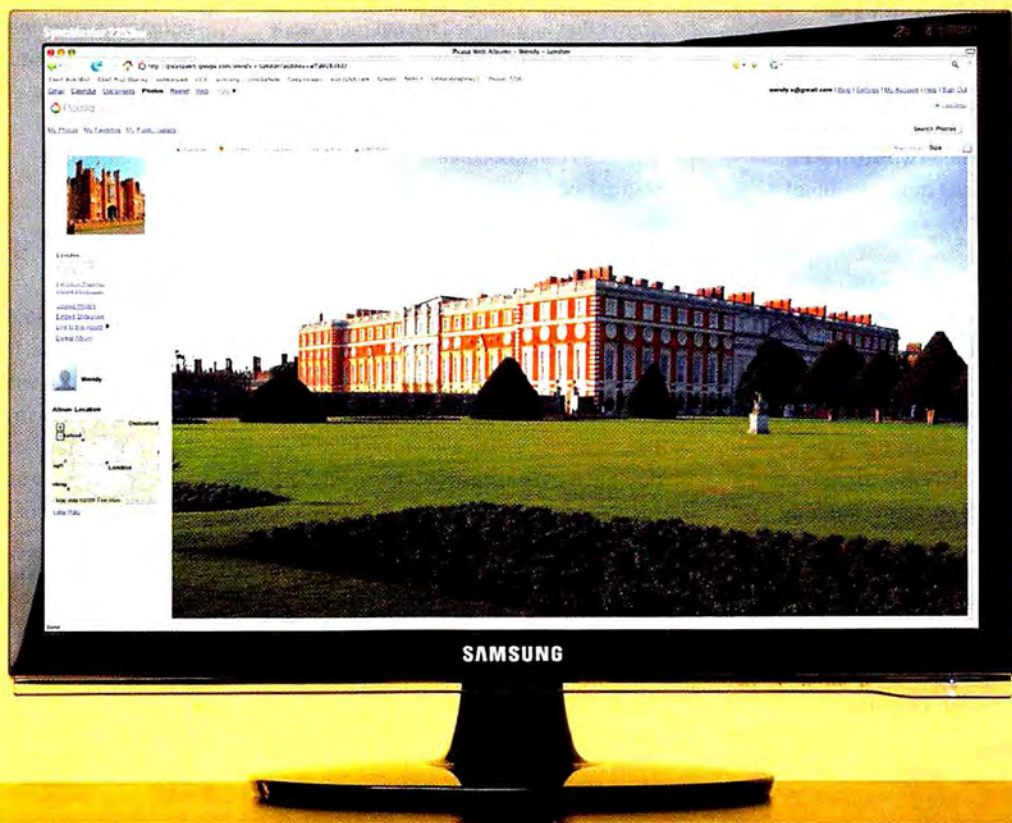
Jiffle's thesis is sound: Why waste time going back and forth with people to schedule a meeting when you can do it more quickly over



YOU CAN SHARE a whiteboard, slides, or your desktop using DimDim.

the Net? With Jiffle (which ranges from free to as much as \$100 per month for a corporate account), you enter the times you're available—through Microsoft Outlook's calendar or through the Jiffle site (support for Google Calendar is coming). Then you invite colleagues to view that information and propose a time. Unfortunately, in practice I found Jiffle's system for setting available times, whether online or in Outlook, far from intuitive. [jiffle.com](http://jiffle.com)





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## Will the Next Version of Windows Arrive Early?

MICROSOFT RECENTLY dropped two strong hints that the next version of its Windows operating system will arrive in 2009, up to a year sooner than anticipated.

The hints might signal Microsoft's intention to cut its losses with Windows Vista, which customers, especially large companies, have grudgingly accepted or shunned.

The company has long said that it wants to release Windows 7 about three years after Vista, and most outsiders had pegged 2010 as a likely arrival year for the new OS. But recently in Miami,



Microsoft chairman Bill Gates reportedly said in response to a question about Vista, "Some-

time in the next year or so we'll have a new version."

And in announcing plans to extend the availability of Windows XP Home for low-cost laptops (see [find.pcworld.com/60695](http://find.pcworld.com/60695)), Microsoft said it would retire the OS only after June 30, 2010, or one year after the release of Windows 7, whichever came later.

The announcement's wording implies that the company may be targeting the middle of next year as a release milestone for Windows 7.

Microsoft has divulged few of the changes planned for the new operating system.

—Eric Lai

## GEEKTECH TOM MAINELLI



## Five Software Tools to Speed Up Your Day

LAST MONTH I discussed some hardware upgrades that have helped me get more work done. This time, let's look at software.

**Supercharge Excel:** As I've come to appreciate just how well Microsoft Excel can work, I've also gained a better understanding of its shortcomings, which is where a little \$59-per-

year gem called DigDB for Excel comes in. This program from Data Instruments Group ([www.digdb.com](http://www.digdb.com)) adds handy features to Excel, improves existing ones, and makes the application easier to use. For everything from tracking down broken links to generating median values to trimming errant spaces, this software is certainly worth the price of admission—plus you can try it free for 15 days.

### Ditch the fax machine:

When I need to send a fax to my home office or receive one from there, I use TrustFax from Comodo ([www.trustfax.com](http://www.trustfax.com)). The service is less well known than eFax or MyFax, but what I like about it—besides its clean, easy-to-use Web interface—is its pricing options for light fax

users like me. I pay TrustFax \$30 a year for a fax number, 50 outbound and 150 inbound fax pages, and online storage. To use the service I scan my document in my multifunction printer, upload the file to the TrustFax Web site, and send it off. It doesn't get much easier than that.

**Make pretty pictures:** Sometimes I need more than a well-crafted sentence to get my point across—I need things like boxes, circles, and arrows. That's when I turn to SmartDraw, a business-graphics app from the company of the same name. After a free trial, it costs \$297 (list). It's pricey, but you can often find it deeply discounted at [www.smartdraw.com](http://www.smartdraw.com), and if you've ever struggled to make flowcharts, time lines, mind maps, or even floor plans, you'll love it.

**Try everyman's database:** Though the term *database* strikes fear into many nontechie hearts, not all database apps require a knack for constructing clever queries. The venerable

AskSam from AskSam Systems ([www.asksam.com](http://www.asksam.com)), now on version 6.1 (with 7 in beta), lets you store all sorts of data, from Word docu-

ments to e-mail to Web pages, that you can retrieve with simple, free-form word searches. I keep a close eye on several tech markets, and I use AskSam as my personal data clearinghouse. It isn't perfect—you'll spend a little time getting up to speed, and the 'Add Webpage to AskSam' feature works only with Internet

Check out a handful of the Geek's favorite productivity-boosting applications, plugins, and Web services.



SMARTDRAW lets you convey ideas via flowcharts, mind maps, and more.

Explorer (come on!)—but it's an immensely useful tool. After a free trial, the standard version is \$150; the faster Pro version is \$395.

**Share and share alike:** Besides making it dead simple to keep documents synced among my multiple PCs, Microsoft's newly revamped FolderShare service saved my butt when my beloved home-built PC failed to boot one recent morning. Since the files that I had been working on were synced to my work notebook before I shut down, I didn't have to scramble to retrieve them from my PC's hard drive (or even from my online backup service of choice, Carbonite; see [find.pcworld.com/60423](http://find.pcworld.com/60423) for my review). Best of all, the beta FolderShare service ([www.foldershare.com](http://www.foldershare.com)) remains free.



# THINK SPAM WILL NEVER DIE? THINK AGAIN.



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Existing anti-spam solutions are no match for the relentless spam infestations invading inboxes every day. That's why you need SonicWALL® Email Security, the elegantly simple, brutally effective anti-spam solution. SonicWALL provides unique protection against spam—and other e-mail threats like phishing attacks—by actively gathering vital learning from an expansive network of users and sources called the SonicWALL Global Response Intelligent Defense (GRID) Network. With more than one million users, the GRID Network provides collaborative intelligence, enabling SonicWALL to deliver a fast and accurate response to the latest spam threats. SonicWALL Email Security is also simple to manage, requiring just minutes for deployment and minutes of maintenance per week to keep users spam-free. Take a deeper look at our Email Security solution and kill the spam using our Try and Buy program free trial. Learn more at [www.sonicwall.com/anti-spam](http://www.sonicwall.com/anti-spam) or call 1.888.557.6642.



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## Sprint, Samsung Work on Instinct iPhone Clone

JUST IN TIME for the Apple iPhone's first anniversary, Sprint and Samsung plan to deliver the most serious competing product yet: the Instinct. A bit taller, narrower, and thicker than the iPhone, with a resistive touch screen (versus the iPhone's

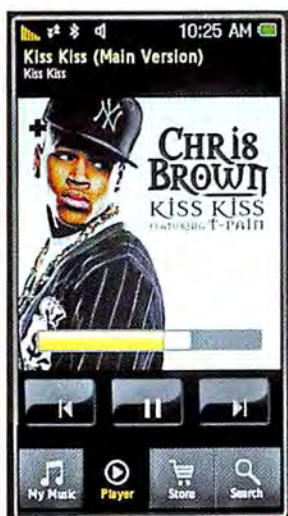
more-sensitive, capacitive display), the Instinct has some features that the iPhone doesn't—mobile broadband (EvDO Rev. A), GPS, a platform for third-party apps (BREW on Java), and (likely) a more wallet-friendly price tag. —Yardena Arar



**THREE TOUCH-ENABLED BUTTONS** with haptic (vibration) feedback anchor the navigation system: Back returns you to the previous screen; Phone opens the dial pad and other phone functions; and Home presents four main application groups. The groups are Favorites, which you define; Main (shown at left) for e-mail, GPS navigation, messaging, and other general data apps; Fun (shown below) for music, video, games, a camera, and other leisure activities; and Web, for launching the landscape-mode browser (shown above). The Instinct supports fingertip scrolling, visual voice mail, and Bluetooth for both stereo headset and phone-as-modem use.



IN ADDITION TO hosting an over-size software dialpad, the Instinct's phone screen provides fingertip links to speed-dial numbers, contacts, and call history.



THE INSTINCT'S MUSIC player displays album art, large standard player control keys, a search feature, and easy access to Sprint's music store.



THE USER-CUSTOMIZABLE Favorites screen lets you create keys to launch applications, view Web sites, and dial or message specific contacts.



DEFAULT FUN KEYS lead to music and video players, Sprint TV, games, the 2-megapixel camera (for still shots and video), and even Internet radio.



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Acer recommends Windows Vista® Ultimate.



May/June 2008

## Ferrari 1100 Unique Innovation



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(LX.FR90U.071)

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- 5-in-1 card reader
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- NVIDIA® GeForce® 7000M graphics
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- One-year limited warranty<sup>2</sup>



Acer Aspire 5520-5908

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AMD Athlon™ 64 X2 dual-core processor for notebook TK-55  
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One touch of the Empowering Key and you can easily take control of your notebook's security, performance, settings and communications.



#### Acer X263Wbi

- 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, HDMI (HDCP) signal connectors
- 350 cd/m<sup>2</sup> brightness
- 5ms gray-to-gray response time
- Internal power adapter

**\$499**

(ET.GX3WP.001)



#### Acer AL2416WBsd

- 24" wide-screen TFT LCD
- 1920 x 1200 maximum resolution
- 1000:1 contrast ratio
- 160° horizontal viewing angle
- 160° vertical viewing angle
- VGA, DVI (HDCP) signal connectors
- 400 cd/m<sup>2</sup> brightness
- 5ms response time
- Internal power adapter

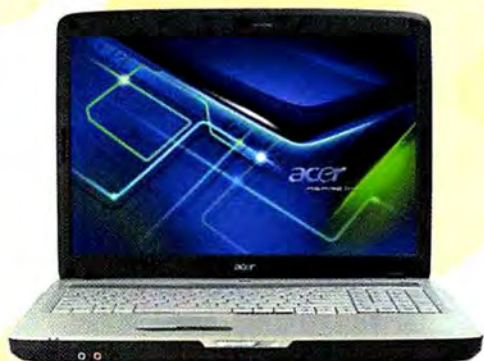
**\$379**

(ET.F16WP.B02)





## Acer® Aspire® 7520



- AMD Turion™ 64 X2 Dual-Core Mobile Technology
- Genuine Windows Vista® Home Premium
- 2GB DDR2 667 SDRAM
- 250GB<sup>1</sup> hard drive
- Integrated Super-Multi drive (DVD+R, DVD-R, DVD-RAM)
- 5-in-1 card reader
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- NVIDIA® GeForce® 8400M graphics
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### 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.



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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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### Acer AL2216Wbd

- 22" wide-screen TFT LCD
- 1680 x 1050 maximum resolution
- 700:1 contrast ratio
- 170° horizontal viewing angle
- 160° vertical viewing angle
- VGA, DVI (HDCP) signal connectors
- 300 cd/m<sup>2</sup> brightness
- 5ms response time
- Internal power adapter

**\$239**

(ET.2216B.0D0)



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## Acer® LCDs



### Acer V223 Wbd

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

**\$249**

(ET.EV3WP.001)



### Acer AL2016WBbd

- 20" wide-screen TFT LCD
- 1680 x 1050 maximum resolution
- 800:1 contrast ratio
- 160° horizontal viewing angle
- 160° vertical viewing angle
- VGA, DVI signal connectors
- 300 cd/m² brightness
- 5ms response time
- Internal power adapter

**\$219**

(ET.D16WP.B04)



### Acer AL1917 Cbmd

- 19" TFT LCD
- 1280 x 1024 maximum resolution
- 700:1 contrast ratio
- 150° horizontal viewing angle
- 135° vertical viewing angle
- Two 1.0W integrated speakers
- VGA, DVI signal connectors
- 300 cd/m² brightness
- 5ms response time
- Internal power adapter

**\$229**

(ET.1917B.0DC)



### Acer V193 b

- 19" TFT LCD
- 1280 x 1024 maximum resolution
- 2000:1 dynamic contrast ratio
- 176° horizontal viewing angle
- 176° vertical viewing angle
- VGA signal connector
- 300 cd/m² brightness
- 5ms response time
- Internal power adapter

**\$229**

(ET.CV3RP.001)



### Acer AL1916 Cb

- 19" TFT LCD
- 1280 x 1024 maximum resolution
- 700:1 contrast ratio
- 150° horizontal viewing angle
- 135° vertical viewing angle
- VGA signal connector
- 300 cd/m² brightness
- 5ms response time
- Internal power adapter

**\$219**

(ET.1916B.00C)



### Acer AL1917W Abd

- 19" wide-screen TFT LCD
- 1440 x 900 maximum resolution
- 700:1 contrast ratio
- 150° horizontal viewing angle
- 135° vertical viewing angle
- Two 1.0W integrated speakers
- VGA, DVI signal connectors
- 300 cd/m² brightness
- 5ms response time
- Internal power adapter

**\$199**

(ET.C17WPA04)



### Acer AL1916W Ab

- 19" wide-screen TFT LCD
- 1440 x 900 maximum resolution
- 700:1 contrast ratio
- 150° horizontal viewing angle
- 135° vertical viewing angle
- VGA signal connector
- 300 cd/m² brightness
- 5ms response time
- Internal power adapter

**\$195**

(ET.1916B.W08)



### Acer AL1717 Fbd

- 17" TFT LCD
- 1280 x 1024 maximum resolution
- 800:1 contrast ratio
- 160° horizontal viewing angle
- 160° vertical viewing angle
- Two 1.0W integrated speakers
- VGA, DVI signal connectors
- 300 cd/m² brightness
- 5ms response time
- Internal power adapter

**\$189**

(ET.B17RPF04)





## Acer® Aspire® 4520



- AMD Athlon™ 64 X2 dual-core processor for notebook PCs
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- 5-in-1 card reader
- 14.1" WXGA (1280 x 800) TFT display, Acer® CrystalBrite Technology
- NVIDIA® GeForce® 7000M graphics
- 802.11b/g WLAN, gigabit LAN, V.92 modem, integrated webcam
- One-year limited warranty<sup>2</sup>



Acer Aspire 4520-5141

**\$589**

AMD Athlon™ 64 X2 dual-core processor for notebook TK-57  
Genuine Windows Vista® Home Premium  
(LX.AHS0X.257)



### 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.

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

### Acer AL1716 Fb

- 17" TFT LCD
- 1280 x 1024 maximum resolution
- 800:1 contrast ratio
- 160° horizontal viewing angle
- 160° vertical viewing angle
- VGA signal connector
- 300 cd/m<sup>2</sup> brightness
- 5ms response time
- Internal power adapter

**\$185**

(ET.B16RP.F02)



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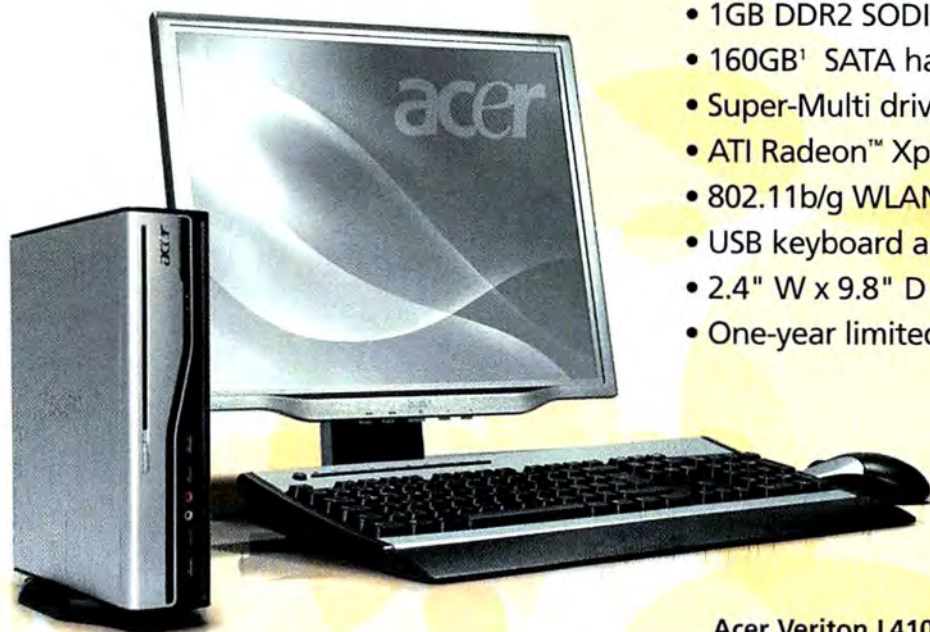


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- Super-Multi drive (DVD+R, DVD-R, DVD-RAM)
- ATI Radeon™ Xpress 1250 graphics solution
- 802.11b/g WLAN, gigabit LAN
- USB keyboard and mouse
- 2.4" W x 9.8" D x 7.9" H
- One-year limited warranty<sup>2</sup>

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Microsoft® Office Professional 2007 (60-day trial)<sup>3</sup> and  
CD with Genuine Windows® XP Professional<sup>4</sup>  
(VL410-UD4201C) or  
Genuine Windows® XP Professional  
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- 2000:1 dynamic contrast ratio
- 176° horizontal viewing angle
- 176° vertical viewing angle
- VGA signal connector
- 300 cd/m<sup>2</sup> brightness
- 5ms response time
- Internal power adapter

**\$185**

(ET.BV3RP.001)



### Acer X173Wb

- 17" wide-screen TFT LCD
- 1440 x 900 maximum resolution
- 1000:1 dynamic contrast ratio
- 140° horizontal viewing angle
- 130° vertical viewing angle
- VGA signal connector
- 250 cd/m<sup>2</sup> brightness
- 8ms response time
- Internal power adapter

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(ET.BX3WP.002)







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

<sup>2</sup> For a free copy of the standard limited warranty end-users should see a reseller where Acer products are sold or write to Acer America Corporation, Warranty Department, P.O. Box 6137, Temple, TX 76503.

<sup>3</sup> The 60-day trial of Microsoft® Office Professional 2007 is available with Genuine Windows Vista® Business only, not with Genuine Windows® XP Professional.

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# Consumer Watch

## Take the Sting Out of Subscription Services

BY RICK BROIDA

IF YOU'RE CONCERNED about spyware ravaging your PC, you've probably considered—or purchased—a utility such as PC Tools' Spyware Doctor, which costs a reasonable \$30.

But PC Tools automatically charges you another \$30 every year thereafter, which came as a shock to Lorrie Price, a casino security worker in Atlantic City. A year after she bought Spyware Doctor using a debit card, Price received e-mail stating that the annual renewal fee had been debited from her checking account.

"I was not asked if I wanted a yearly renewal," she says. "I did not authorize any renewal, and I definitely did not authorize the company to access my checking account."

Welcome to Subscription Hell. A growing number of programs, utilities, and even games charge yearly or monthly fees for software, updates, or support. Major antivirus packages have long charged annual fees for virus signature and other updates (and also nag you to buy upgrades), but other types of software are moving to subscription pricing. For example, Cerulean Studios' Trillian Pro cross-platform instant messaging client costs \$25 a year for tech support, forum access, and updates.

For many users the problem lies not in paying a few bucks every year, but in managing subscriptions or canceling them, which isn't always easy. Here's how to avoid subscription surprises and deal with common problems.

**Read the fine print:** While no one likes plowing through legalese, it's the best way to see what you will be getting into. With Spyware Doctor, for example, you must click through to its checkout page to find the terms of service; near the top of the terms of service, the agreement states clearly that the com-

pany will renew your subscription automatically "by directly charging your credit card or debiting your debit card prior to each anniversary of the date of purchase..."

PC Tools does not provide the option of limiting the subscription to a single period, either. Price admits that she never read the agreement, instead assuming that "any renewal would follow other subscriptions I've had: advance notice by e-mail and the option to renew or not."

Don't assume that one company's policies will emulate another's. Take the time to read the license agreement so you don't get an unwelcome surprise 365 days later.

### Track Your Purchases

**Keep good records:** Many people simply forget that they've signed up for a subscription

service. One way to keep track of your subscriptions is to create a basic spreadsheet with entries for each program or service, its billing cycle, the renewal policy (automatic or manual), and confirmations of payments made.

While you're at it, add billing reminders to your calendar—or have the alerts sent by a Web service such as Google Calendar or Remember The Milk—shortly before a renewal date, so you can decide whether to pay up or cancel. >>

Have you run into problems with software that charges on a subscription basis? Our tips can help keep unpleasant surprises to a minimum.



ILLUSTRATION: THOMAS FLUCH

**Major antivirus packages require paid subscriptions that aren't automatically canceled when you uninstall the software, as one reader complained to *On Your Side* ([find.pcworld.com/60671](http://find.pcworld.com/60671)).**





## SKEPTICAL SHOPPER YARDENA ARAR

**Update your accounts:** Much subscription grief arises from changes to your contact information or your credit card. For example, if you change your e-mail address and don't update subscription accounts, you won't receive notices of upcoming renewals. That could lead to unwanted automatic renewals or service cancellation (which in the case of antivirus software might leave you exposed to viruses whose signatures you haven't downloaded).

Similarly, if you cancel a credit card or it expires, notify companies that bill you automatically so that your account won't be suspended or canceled.

**Look for nonsubscription alternatives:** For some subscription programs and services, you may be able to find a free alternative that's just as good. Tired of paying the monthly fee for Rhapsody? Try a music-streaming service such as Last.fm or Slacker, both of which offer unlimited tunes free of charge. You can also find freeware alternatives to the likes of Norton AntiVirus and Spyware Doctor (see our review of ClamWin Free Antivirus at [find.pcworld.com/60687](http://find.pcworld.com/60687)).

**Learn how to cancel:** Sending a "cancel my subscription" e-mail to a company's customer-service department isn't always enough. You may need to complete an online cancellation form or even call the company directly (see [find.pcworld.com/59019](http://find.pcworld.com/59019) for our investigation of cancellation policies).

Again, a careful reading of the terms of service or the company's FAQ page should reveal the proper cancellation method. Savvy consumers check that information out before subscribing.

**Get your credit card company involved:** So you've followed the proper cancellation procedures but are still receiving bills for service. If you can't resolve the issue through regular customer-service channels, call your credit card company, which may be able to block future charges for the subscription. At the very least you can file a dispute claim, which should get the software company's attention and help you cancel the subscription for good.

## Unlimited Cell Phone Calling: Bah, Humbug

ALL YOU CAN EAT.

I remember how sweet those words sounded when

I first heard them in connection with something other than food: a flat-rate dial-up Internet account back in the 1990s. Recently four major national cell phone carriers went the same route for voice calls, announcing plans that set no limits on talk time. But at \$100 a month, the plans are pricey, and several other drawbacks make the offers less appetizing than they might sound.

For starters, the plans don't do much for families. Verizon Wireless, the first to unveil an unlimited-calling plan, gives no break whatsoever for additional lines: Each one will cost another \$100. You get the same nondeal with the AT&T Wireless and T-Mobile plans.

Sprint does offer discounts, starting at \$5 off for a second line and increasing the reduction by another \$5 for each additional line, up to five in all. But that still comes to a hefty \$450 a month for a family that needs five phones.

### Landline Substitute?

The pricing strategy makes substituting cell phones for landlines a nonstarter for households with more than one person, as you don't pay a dime more for a landline, no matter how many family members (or friends) use it to talk their hearts out.

Also, substituting a cell phone for a landline can introduce problems such as getting agencies to respond to the right location for emergency 911 calls, or making sure the handset is charged.

You can forget overseas calls, which become very expensive on cell phones. And if your broadband service is tied to a landline (DSL or ISDN, for example), you have to stick with the landline anyway.

Four major U.S. carriers offer unlimited voice-call plans—but only Sprint throws in all-you-can-eat data, as well.

Another reason I'm not impressed by unlimited talk plans: Most don't help with fees for data service, which are an increasingly big chunk of my cell phone bill.

AT&T and Verizon charge separately for messaging and data services, while T-Mobile includes unlimited instant, text, and video messaging, but not data. Only Sprint's appropriately named Simply

Everything plan bundles unlimited voice, data, messaging, and even GPS navigation service, which makes it the best deal.

Sprint's offer comes with a lot of fine print, however: The company can terminate your service if most of your voice minutes or data use involves roaming, and you can't use your phone as a modem.

Once you add in regulatory fees and taxes, all of the plans top the \$100 mark. For really big talkers—mobile professionals, for example—they'll probably still be worthwhile: No more worries about whether you're using night, weekend, rollover, or regular daytime minutes.

But cell phone talk minutes have become so cheap that most other people probably wouldn't benefit. My husband and I usually use only a fraction of the 450 shared anytime talk minutes in our AT&T plan (at this writing we have nearly 4000 rollover minutes). And even with data fees, our bill is always well below the \$200 we'd pay for unlimited calls.

The bottom line: I'm not thrilled about these new plans. People who live on their cell phones will want to investigate them—especially the Sprint offering—but unlimited nationwide voice calling is probably overkill for most folks.





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## Consumer Watch

### ON YOUR SIDE

AMBER BOUMAN



AFTER BUYING MY daughter an Archos 605 Wi-Fi portable video player online, I tried to purchase the \$29.99 Web browser required to access Internet content. In two attempts to enter my debit card's three-digit security code, I got an error message, so I finally purchased the browser using a different debit card from the same bank. A few days later, I saw what looked like two \$29.99 charges on the first card and \$43.10 on the second card, all from Archos. When I called the company to complain, a customer service rep promised refunds for the extra charges (and explained that the higher price on the second card was because I had wandered to Archos's British site and had been billed in euros). When the refunds didn't materialize after four days, I called my bank to dispute the extra charges. The next day I saw that both \$29.99 charges and the \$43.10 charge had been refunded—but another \$43.10 Archos charge appeared on the second card. When I contacted Archos again, the rep said Archos did not give refunds for add-ons. Can you help straighten this out?

*Chris Robertson, Grandfield, Oklahoma*

**OYS Responds:** We contacted Archos, and the company's new Web store manager sent Robertson a check for the difference between the correct price and the remaining \$43.10 debit. Apparently, part of the confusion stemmed from the fact that two of the apparent charges weren't charges at all. Robertson inadvertently entered an incorrect security code for the first card, and the bank put holds on both transactions. The holds took a few days to clear, but were not actual charges.

Archos says it is working on a redesign of its site that will redirect purchases made using U.S. debit or credit cards to the U.S. store, which should prevent U.S. customers from inadvertently buying from the company's British Web site.

For online purchases I recommend using credit cards rather than debit cards, since the latter have fewer safeguards against disputed transactions.

Also, if you encounter error messages when purchasing anything online, don't assume that the transaction hasn't gone through. Call the card's customer service number if you're in doubt.

#### Upgrade Loses Features

When Christopher Hill of Miami downloaded an update to the Western Digital Backup software that came with his Western Digital external hard drive, he was unpleasantly surprised to discover



that the new version of the program no longer supported the option to password-protect backups. Western Digital support suggested that he use Windows' options for encrypting files and folders.

After we contacted Western Digital, the company sent Hill a copy of Retrospect Backup (which ships with some of its higher-end MyBook drives) and helped him configure the program's password-protected backup feature. Western Digital says it didn't realize that Archos (the same company mentioned in the previous item), which makes Western Digital Backup, had removed features in the update; Western Digital has made the old version available on its Web site.

If you're happy with the free software supplied with hardware, make sure you have a good reason to upgrade it—and complain loudly if you lose features.



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## Consumer Watch

### Court Puts Stricter E911 Rules on Hold

A FEDERAL APPEALS court has halted the implementation of stricter Federal Communications Commission E911 call accuracy requirements, saying that the wireless carriers opposing it have a good chance of winning their lawsuit challenging the FCC rules.



By law, when a cell phone user dials 911, carriers must be able to establish the user's location to within a certain distance. Currently the FCC assesses compliance based on statewide or nationwide averages, which allows carriers to meet the requirements by providing highly accurate call location in some areas to compensate for poor accuracy in others.

The FCC, responding to requests from public-safety groups, last year set deadlines for carriers to start meeting the accuracy requirements for each emergency call center, eliminating the use of averages. The Rural Cellular Association, which represents carriers serving rural areas, and T-Mobile USA challenged the order, in part on the grounds that the deadlines were unreasonable. The carriers also argued that the rules might worsen E911 service in some thinly populated communities because companies might end service to areas where they could not afford the upgrades needed to meet the new requirements.

While the case has yet to be heard, a three-judge panel of the U.S. District Court of Appeal in the District of Columbia in late March blocked implementation of the new rules pending a final decision, saying that the plaintiffs had "demonstrated a likelihood of success" for their challenge, particularly on the claim that the FCC had not given them sufficient notice.

—Yardena Arar ●



# Business Center

## Macs Can Fit Well in Your PC-centric Office

BY RIK MYSLEWSKI

A GOOD ARGUMENT can be made that a Mac is simpler to use than a Windows machine, owing to its intuitive, productivity-focused interface. Thanks to advances in cross-platform integration (such as an improved user interface for share-point access from Apple, and enhanced Exchange services from Microsoft), adding a Mac to the office mix is now relatively easy. And Intel lets you proceed without having to leave your familiar (and paid-for) Windows apps behind.

### Buying the Right Mac

The first step in Mac/PC integration is to pick the Mac that's most suitable for you and your staff.

For most business uses, the iMac has more than enough CPU power and peripheral-connection choices. The iMac comes with a 20- or 24-inch flat-panel display, so if you've already invested in monitors, select a compact, low-cost Mac Mini instead. The Mini's pedestrian graphics subsystem won't win any benchmarking competitions, but its small and quiet profile makes it unobtrusive on a desk.

Apple's top-of-the-line Mac Pro (now with eight processor cores) delivers impressive power, and has PCI Express and

Friendlier software and new integration enhancements make it much easier than in the past for Macs to play nicely with PCs.

four-bay SATA-drive expandability. It's overkill for most business needs, but morale in your content-creation departments will soar if you bring a couple of

All Macs ship with lots of Apple software, including Mac OS X 10.5 (aka Leopard), the consumer-level iLife creativity suite, and a demo of the \$79

iWork productivity suite.

One component of iLife is Keynote, a presentation application that embarrasses PowerPoint with its superior animation capabilities and more-elegant prepackaged "themes" (Mac-speak for templates).

The included Numbers spreadsheet can't match the enhanced formula and macro capabilities of Excel, however, and iWork's Pages falls short of Microsoft Word as a word wrangler.

### Document Sharing

Macs and PCs can share Microsoft Office documents, but a couple of warnings apply. Though you should have no problem with Office 2007 and

2008 files, Macs running Office 2004 or Office v. X for Mac must use Microsoft's beta stand-alone converter to open Office 2007 (PC) and 2008 (Mac) Word (.docx) and PowerPoint (.pptx) files; a converter for newer Excel (.xlsx) files will probably have appeared by the time you read this. (Oddly, Apple's Numbers already opens .xlsx files just fine.) »



these beefy systems into the building.

The 13-inch, plastic-bodied MacBook is fine for junior-level business travelers, but members of the executive team may prefer to tote the 15-inch aluminum-encased MacBook Pro, with its higher-resolution display, better graphics subsystem, ExpressCard/34 slot, FireWire 800, and illuminated keyboard.

PC World's online Business Center features Webinars on topics that are important to your business, such as keeping mobile devices secure and dealing with data disasters. ([find.pcworld.com/60711](http://find.pcworld.com/60711)).



As for other software, most market-leading apps come in Windows and Mac OS X versions that are nearly identical, so you can switch between them with minimal or no retraining.

## Trying to Fit In

Since its initial release in 2000, Mac OS X has steadily improved its support for multiplatform environments. Mac OS X 10.4 (aka Tiger) permits seamless share-point access, printing, Web-resource sharing, and other networking functions in a Windows environment.

Unfortunately, Tiger's successor (Leopard) endured some rocky months following its late-October introduction. Subsequent Leopard releases (10.5.1 and 10.5.2) have greatly improved the interface for multiplatform sharing, but harried network administrators worldwide are still awaiting fixes for certain tenacious network-access bugs, such as slow Active Directory log-in. Some of those belated fixes may be available by the time you read this; you can keep up with the ongoing saga at MacWindows.com.

Printing is rarely an issue with Macs, since Mac OS X ships with more than 3GB of printer drivers gathered from many major vendors. If your printer isn't covered, you should be able to remedy the situation by using the free CUPS (Common Unix Printing Solution).

## Unique Strengths, Costs

Many businesspeople have worked in multiplatform environments for decades, and have learned to appreciate and to take advantage of the unique strengths of both the Mac and the PC. One caveat: Apple claims that Macs are as cost-effective as PCs. If you're looking for full-featured, high-end business systems, the two platforms are certainly comparable in price. On the other hand, if you simply want to provide your employees with systems for them to work on, basic PCs are less expensive—especially if you've acquired your enterprise applications on a site-license basis. Sorry, Mr. Jobs, but it's true.

## NET WORK

RICHARD MOROCHOVE



### Monitor the Buzz About Your Business

BLOG BUZZ—online word-of-mouth—can make or break a new product. How can you

track what folks are saying about yours?

Zeta Interactive's RelevantNoise, a subscription-based service, mines social media to gauge the buzz regarding a business's (or its competitors') products, services, and reputation. Saved searches reflect how opinions change over time.

Priced at \$5000 per month for five users, RelevantNoise isn't cheap, but its tracking and reporting capabilities are far more sophisticated than those of the free search engines.

According to Zeta Interactive, RelevantNoise tracks about 75 million of the Web's estimated 100 million active blogs and discussion forums. The service updates every 60 seconds and saves the relevant posts it finds so you can search and analyze them in several different ways.

#### Tracking Quantity and Tone

Each search request you submit prompts the service to create great-looking charts displaying the number of posts found each day over a period of up to 90 days.

More important, the service graphs the tone of the various posts it finds, reflecting the proportions of positive and negative opinions. In making those assessments it uses a proprietary algorithm that generally works well. You can drill down through the aggregate results to examine the text of specific posts in detail.

In some cases, you can even examine blogger demographics. Zeta Interactive says that RelevantNoise has identified the gender of about half of the bloggers it tracks and can determine their age range in about 25 to 35 percent of all cases.

RelevantNoise also assesses the relative influence of the blogger in question,

If your business depends on your reputation in the blogosphere, RelevantNoise may be worth its admittedly high price.

using factors such as tenure, posting frequency, and number of incoming links.

A "ping me" feature sends you e-mail alerts when it finds new relevant posts.

RelevantNoise and other services that monitor social media can provide early warning of image problems so marketers

can respond before the situation turns disastrous. Conversely, positive buzz may suggest unexpected marketing opportunities.

If bloggers rarely mention your product or company, a quick search using a general search engine such as Google or a blog

specialty service such as Technorati may yield all the information you require. But those free services won't assess the overall tone of the posts, nor will they track changing opinion trends over time.

Regardless, determining the tone of a blog post isn't a perfect science. RelevantNoise might interpret the tone of a post about a product whose name contains an unfavorable term, such as the movie *The Evil Dead*, as negative even though the blogger may be praising it. (Zeta says that it's working to address such issues.)

#### No Instant Gratification

Searches that cover more than a couple of weeks' worth of data or that request analysis of the posts' tone may show up in several sections, each covering a few weeks, and the complete report may take a minute or two to produce.

RelevantNoise's \$5000 monthly subscription fee covers five users and an unlimited number of searches. The company will also consider more-expensive licenses for a larger number of users, or less-expensive licenses with usage restrictions. Consulting help is available, too.





ALTERNATIVE THINKING ABOUT ASSURANCE:

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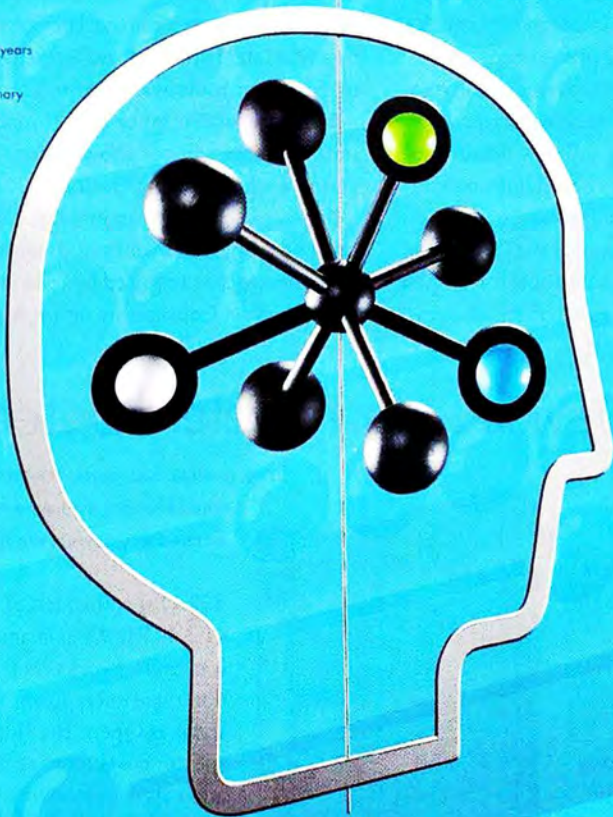


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\*Based on IDC, Worldwide Quarterly Server Tracker, February 2008. In calendar 4Q07, IDC reported worldwide HP ProLiant server shipments at 681,445 units, well ahead of Dell PowerEdge's 499,715 units at #2. IDC also reported ProLiant factory revenue 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 price of configure-to-order equivalent (\$3945 - \$1420 instant savings = SmartBuy price of \$2,525). 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 July 31, 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.



## The Dos and Don'ts of Smart E-Mail Marketing

E-MAIL MARKETING can help your business grow, but a misstep can cause you to lose customers for life. Avoid the pitfalls with these dos and don'ts.

**Do:** Create a snappy subject line that doesn't sound like an ad. People are more likely to open e-mail that has a simple, newsy, and direct header.

**Do:** Use HTML rather than plain text. A well-designed newsletter or pitch containing product photos will help you get your message across.

**Do:** Design with e-mail reader preview panes in mind. Make sure key elements fit into an area no larger than about 600 pixels wide by 400 pixels deep.

**Do:** Rely on list-management software or services to deal with subscription changes, bounces, and new opt-in subscribers who have clicked links on your site or in your e-mail messages.

**Do:** Track your messages' effectiveness. Most list-management tools track open rates, numbers of subscribers who un-

subscribe, and click-through response (see [find.pcworld.com/60408](http://find.pcworld.com/60408) for representative rates from one service). Test different messages and subject lines to see which ones produce the best results.

**Don't:** Get blacklisted. Use a spam checker to see whether your e-mail will pass through common filters or put you on a spam blacklist. Many mailing services have checkers of this type, and Lyris.com and Sitesell.com make similar tools available for free.

**Don't:** Use JavaScript or background images. These will not show up for recipients who are using Outlook 2007.

**Don't:** Fail to include an unsubscribe link and a physical mailing address with your message, as required by federal antispam law. Consider including a link

to your company's privacy policy, too.

**Don't:** Assume that message recipients will see included images—some e-mail programs won't display them. Provide text descriptions for all graphics, and make sure your message is clear without the images. Never send attachments.

**Don't:** Send at the wrong time. The best days for business-to-business mailings are Tuesday through Thursday before 3 p.m. For residential customers, evenings and weekends work best.

—Becky Waring



**MOST ONLINE E-MAIL marketing companies offer professionally designed e-mail templates (like this one from MailChimp.com) that are easy to customize with your own artwork and colors.**

## Handy Device Lets Travelers Detect Wi-Fi Hotspots

CANARY Wireless's pocket-size Digital Hotspotter HS-20 (\$60) quickly detects and analyzes available Wi-Fi networks for you whenever you're out and about.

Press the power button on this sturdy little device, and the Hotspotter's monochrome display swiftly presents you with a list of up to 20 detected Wi-Fi signals identified by SSID (network name), with signal strength and type of encryption (if any). The text at the base of the postage-stamp-size screen scrolls to show you the network type (802.11b/g/n, but not



**THE DIGITAL Hotspotter HS-20 is small enough to operate one-handed as you walk around.**

802.11a) and which of the 11 2.4-GHz Wi-Fi channels it uses. Networks that don't use encryption show as Open. The Hotspotter costs more than other signal detectors, but most cheaper devices can't identify a network's SSID and encryption status. Canary Wireless says that it "uses a true 802.11 engine, resulting in no false readings from Bluetooth signals, cordless phones, or microwave ovens." My tests supported this claim. And it's good to know whether a net-

work is open before you pull out your laptop and start booting it up.

My only criticism of the Hotspotter involves its 30-second automatic shut-off. The quick cutoff may save battery life (the device comes with two AAA cells), but 30 seconds is too brief. If you get distracted in midscan, the Hotspotter will switch off before you're done.

If you travel frequently with a laptop or you want to check the security status of your company's Wi-Fi networks quickly, the Hotspotter may be spot on.

—Erik Larkin

**83** Digital Hotspotter HS-20  
Canary Wireless  
Small and accurate Wi-Fi detector is diminished only by a too-hasty automatic shutoff. Street: \$60  
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# Security Alert

## Safest Way to Bank Online? Your Cell Phone

ERIK LARKIN

SO YOU WANT to bank safely online? Then ditch your computer and make the transaction via your cell phone instead.

Using a mobile handset for this most sensitive online act might sound counterintuitive, given that phones are prone to being lost or stolen, but your cell phone might actually be safer than your computer for paying bills or checking your statement online.

Some phone malware does exist, and examples tend to make headlines due to their novelty. But the main threats to online security, such as key-loggers, Trojan horses, and other data-stealing software, don't exist for phones—yet.

"The risk of being infected on a mobile phone is tiny in comparison [with a PC]," notes the security firm Sophos in its annual threat report.

### Remote Control

Security firms have long marketed antimalware products for mobile phones. One such company, Kaspersky, acknowledges the lack of threat from mobile malware (at least in the United States). Recently, as a way to appeal to the market here, it added the ability to remotely wipe out sensitive data on a lost or stolen handset to its mobile security product.

"There's a whole lot of upside and security advantages to mobile devices," says James Van Dyke, president of Javelin Strategy and Research, a financial services research firm.

Financial services for cell phones are plentiful. PayPal lets you send money to another person via your phone. Companies including Obopay, mCheck, and KushCash are joining in.

Bank of America, Wells Fargo, and others also offer services.

Cell phones dodge malware because they run many different operating systems. Security experts agree that crooks stand to steal much more by investing their time in writing a new Windows virus that is capable of infecting millions of

PCs than in constructing a Trojan horse that can target only a certain type of phone.

Phones are off the radar for most hackers today. But Google's Android OS and the iPhone could make them more of a target.



### Android Danger

But that may change. Google is hard at work on its Android phone OS, and iPhones make their way into more and more pockets and purses daily. So while phone OS consolidation holds great promise for better apps and services, it could also make phones more of a target.

Look no further than the Mac for an example of what may come. Apple's OS is still largely ignored by the bad guys, but its growing popularity means that it's no longer a haven of guaranteed security. Last November, Sophos notes in its report, a Mac user who happened across the wrong

Web site risked getting infected by the OSX/RSPlug malware, which sought to subvert Mac network settings and to force any browser used on that Mac toward phishing and ad sites.

### Not Out of the Woods Just Yet

The fact that little mobile malware exists does not mean that cell phones are completely safe, of course. Banking and payment systems require passwords and/or PINs, so someone can't just pick up your phone and start transferring money out of your account. But there's still plenty of personal information that someone could obtain through your phone. ➤

Phones may be relatively secure from malware, but cellular networks are sitting ducks, say security researchers who in March showed off techniques to crack GSM encryption. See [find.pcworld.com/60639](http://find.pcworld.com/60639).





## BUGS & FIXES

STUART J. JOHNSTON

Phishing—the other big threat to on-line financial security—may be even more dangerous for phones than for PCs. If you read e-mail on a smart phone, you'll see phishing messages. And whereas on the desktop both Internet Explorer and Firefox employ built-in antiphishing protections, mobile browsers do not.

"You don't have all the antiphishing toolbars" for a mobile browser, says Dave Jevans, chairman of the Anti-Phishing Working Group. Also, some rare attacks twist the traditional phishing message to target mobile phones. Dubbed 'smishing' or 'vishing' for their use of SMS messages or VoIP systems,



**MOBILE BANKING SERVICES offer convenience and better security, for now.**

such scams may send a phone a text message containing a warning about a credit card account. If you call the number included in the message, an automated VoIP system prompts you to enter your credit card number, for example.

If mobile banking and personal payments catch on, phone-specific risks with malware and phishing may go up as well. "The expectation is that we will see more malicious applications on devices," says Samir Kumar, group product planner for mobile communications business with Microsoft. But for now, he says, the greatest danger arises when phones are lost or stolen.

Phone safety measures, such as locking the device, remain paramount today, especially if you engage in mobile banking, says Kumar. Another tip: Secure your phone's Bluetooth connection by limiting it to known devices.

## Hackers Focus Efforts on Firefox, Safari

MANY PEOPLE are switching from Internet Explorer to alternative browsers such as

Firefox and Safari. Though that might make them feel more secure, the shift has also opened new doors for bad guys.

Case in point: We have no IE bugs to report this month, but both Firefox and Safari have been hit hard.

So forget the idea that just because you've switched to a new browser, you're magically safer. You may be for a time, but to stay safe with any software, you need to keep current with fixes.

**Internet Explorer goes unscathed, but Office is hit with new, dangerous bugs.**

The Safari holes could allow an attacker to trick you into thinking that a fake site is really your bank site, or to take over your PC via a poisoned page. Get the browser update at [find.pcworld.com/60629](http://find.pcworld.com/60629).

### Office Bugged Again

Microsoft recently released four patches that fix a dozen dangerous holes in Office. I warned you about one of those holes—a zero-day attack on Excel—in April. Be

sure to apply the patches, if your system doesn't install them

automatically. Browse to [find.pcworld.com/60633](http://find.pcworld.com/60633)

for the four new Office patches and more info. (You are not affected if Microsoft Office 2007 is the version you use.)

No sooner had Microsoft shipped those patches than the

company acknowledged the existence of yet another bad Office bug that needs patching. And this one is urgent because some users have already been attacked.

Luckily, Windows Vista, Windows Vista SP1, and the beta version of Windows XP SP3 are not at risk because they ship with a newer version of the affected "Jet" database. But earlier versions of Windows are vulnerable, as are all supported versions of Office, including Office 2007.

Becoming a victim of the bug involves saving two files to your PC's hard drive—one a mail-merge file that uses the database engine. There was no patch at press time. For more information, read Microsoft's advisory at [find.pcworld.com/60636](http://find.pcworld.com/60636).

### Firefox Holes

In a somewhat dubious recognition of Firefox's growing popularity, hackers have focused their attention on it, leading to a rash of newly discovered holes.

The folks at Mozilla recently released two Firefox updates in less than six weeks, fixing a total of five critical security vulnerabilities. All five can be exploited by planting a poisoned JavaScript file in a Web site and waiting for you to stumble across it.

In an actual attack—neither the Safari nor the Firefox bugs have elicited one so far—a bad guy could take over your PC or steal your navigation history.

The latest version of Firefox, 2.0.0.13, will stop all five bugs. You can get it at [find.pcworld.com/60631](http://find.pcworld.com/60631). Mozilla's Thunderbird and SeaMonkey are also at risk (if you have JavaScript enabled). Grab updated versions at [find.pcworld.com/60632](http://find.pcworld.com/60632).

### Safari in the Wild

Safari 3.1 patches 13 holes affecting Mac OS X, Windows XP, and Windows Vista.

Think you're safe because you don't have Safari? You may have it without realizing it. Apple now distributes its browser with iTunes updates. Forget to uncheck a box in one of these updates, and it's there.

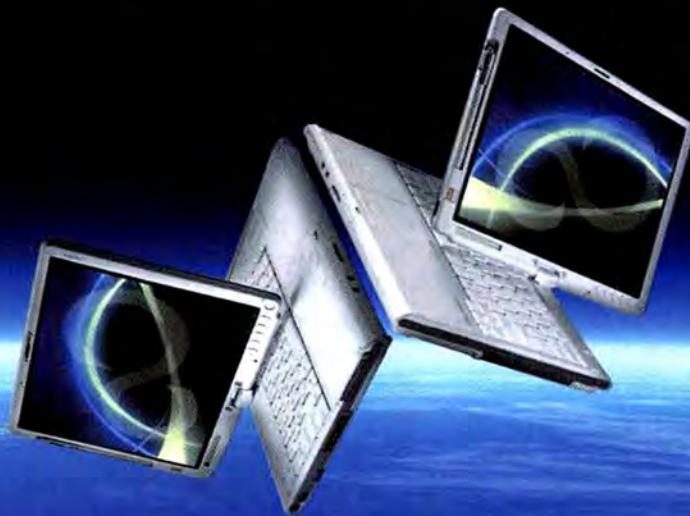


### BUGGED?

**FOUND A HARDWARE or software bug? Send us an e-mail on it to [bugs@pcworld.com](mailto:bugs@pcworld.com).**



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



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## Study: Apple Lags Behind Microsoft in Patching Bugs

APPLE'S ADS IMPLYING that its software is safer than Microsoft's don't stand up when it comes to patching "zero-day" flaws, say researchers at the Swiss Federal Institute of Technology.

Analyzing 658 high- and medium-risk software vulnerabilities Microsoft eventually patched and 738 Apple eventually fixed, the researchers looked at how often over the past six years the two lacked patches for known vulnerabilities, starting on zero day—the day each flaw became publicly known.

They discovered that Apple trails Microsoft in patching such weaknesses.

"Apple was below 20 [unpatched vulnerabilities at any given time] consistent-

ly before 2005," said Stefan Frei, one of the researchers. "Since then, they are very often above." In contrast, Microsoft's unpatched vulnerabilities tended to be below 20 at any given time.

Having fixes available when a flaw is disclosed is important because every day without a patch gives hackers an opportunity to infect machines. But for a software maker to have a patch ready when the bug is revealed, it needs prior information from researchers.

Apple started patching zero-day flaws only in late 2003, Frei said. "We think that Apple had fewer vulnerabilities early on, and they were just surprised or not as ready or not as attentive."



APPLE MARKETS THE security advantage of its operating system with mocking TV ads.

Meanwhile, hacker Charlie Miller took a mere 2 minutes to break into a Mac in March (see [find.pcworld.com/60643](http://find.pcworld.com/60643)).

—Jeremy Kirk and Robert McMillan

## PRIVACY WATCH

ERIK LARKIN



### Should You Trust Your Health Records to Google and Microsoft?



IMAGINE BEING ABLE to check your medical history as easily as you can your e-mail. Or being able to provide records to a new doctor at a moment's notice. Google, Microsoft, and others are developing promising systems for storing digital health care records—for free.

But there's a catch (of course).

Both the upcoming Google Health, currently in private testing, and Microsoft's public beta of HealthVault deal with our most personal information. The two projects will eventually enable doctors and hospitals to add records for hospitalization, doctor visits, and prescriptions (after you give your okay), and will permit you to upload data from devices that you might use at home, such as blood glucose monitors. They could be especially useful for allowing a new doctor to quickly confirm that, for instance, a prescription won't cause problems with other medications you're taking.

The drawback? The Health Insurance Portability and Accountability Act (HIPAA), a federal law that governs the confidentiality of health records, doesn't extend to non-health-care companies.

Microsoft and Google appear fully aware of the need to keep this data private. I have talked with both companies about their privacy policies, and it looks as though they will give users explicit control over access to and use of their data. In general, they are moving in the right direction, says Deven McGraw, director of the Center for

Until we have laws guaranteeing the privacy of my digitized health information, I'll pass.

Democracy and Technology's Health Privacy Project. And both companies support federal legislation to establish a privacy baseline.

But absent any HIPAA or other overarching regulation, McGraw notes, you simply have to trust that the companies will do the right thing. Google and Microsoft are, for the most part, being careful with regard to privacy here, but where my health care records are concerned, I want laws that specifically define what can and can't be done with the information. And I want the company responsible to be punished if someone screws up and releases my data.

Maybe the best approach isn't to extend the reach of HIPAA, but something enforceable should be on the books. Some federal legislation is in the works, according to McGraw, but there's a good chance that nothing will happen until next year at the earliest.

Another issue: Google and Microsoft use a simple Gmail or Windows Live user name and password to access the records. That's great for convenience, but terrible for security and privacy. Internet criminals commonly try to guess or steal Web mail accounts. It's bad enough when a snoop rifles through your Web mail. Imagine one getting access to all your health records at the same time.

Faced with these potential gotchas, I'd wait for the systems and the laws to mature before jumping in. Also, if and when you do try such a health records system, create a user name and password separate from your mail account, just for the health sites. ●





S20 POWER CONDITIONER with BATTERY BACKUP

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S Type

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# Reviews & Rankings

## Network Storage for Home and Office

**PCW Test Center**

NETWORK-ATTACHED storage (NAS) used to be an arcane and pricey option for sharing files via a home or office network. But now, the latest drives are packed with tools that make adding a NAS device easy for anyone without a degree in information technology. That's good news for consumers: Networked homes are more and more common, and more and more devices can connect with computers and with network-attached storage (TiVos stream music, game consoles can read video files—the list goes on).

After a protracted period of little evolution, the NAS drive market is now undergoing two big shifts. First, the price of entry continues to drop, as hard-drive prices fall. The price-per-gigabyte for a 1TB NAS drive has decreased by more than half from two years ago. Second, and more notably, companies are courting home users with sleeker case designs; streamlined, user-friendly interfaces; and eye-popping, living-room-conscious features.

We tested five new NAS drives in the PC World Test

You don't have to be an IT guru to add storage to your network. These network-attached drives make setting up shared data access easy and straightforward.



**FROM LEFT TO RIGHT: Netgear's ReadyNAS Duo, HP's Media Vault mv2120, and Synology's Disk Station DS207+.**

Center. These models—two of which made our chart—represent a diverse cross-section of the NAS options available today. All of the drives have the same basic purpose, but they take different paths to providing similar functionality.

One unit, the \$547 Synology Disk Station DS207+, came configured with 1 terabyte of storage across two drives. Two others, the \$299 HP Media Vault mv2120 and

the \$400 Netgear ReadyNAS Duo, came with a 500GB drive and an open drive bay for additional storage (or a second drive for disk mirroring). A fourth model, the \$299 LaCie Ethernet Big Disk, had a single 1TB drive inside. And a fifth, the \$1075 Synology Cube Station CS407, spread 2TB of storage across four drives.

The results of our tests? The ReadyNAS Duo earned first place on our Top 5 Network-Attached Storage Drives chart; the Synology Disk Station DS207+ also

leaped onto the chart. Those two models stood out from the pack thanks to their ease of use and their home-friendly features.

### Ready, Set, Store

Netgear's ReadyNAS Duo lacks some of the advanced redundancy features of its larger sibling, the ReadyNAS NV+, simply because it is a two-bay NAS device (with the second bay kept empty for future upgrades). Still, the Duo sailed through our performance trials, finishing all but one test at record speeds, beating even the NV+, our previous NAS-





62 DASH EXPRESS



62 HTC SHIFT



70 CANON POWERSHOT A470



76 SANDISK SANSA Fuze

device performance champ.

This handsome unit has sturdy construction, with easy-to-access drive bays. Pop in a second drive, and by default the Duo will mirror the primary drive's contents to the second drive. Some people will like this protection—especially when using the device for backup—but I wish the Duo made it easier to toggle between RAID 0 (striping) and RAID 1 (mirroring). An extra boon: The device stores its operating system in flash memory, so you could replace the primary drive with a larger one.

The Duo comes with a handy utility, RAIDar, for setting up the unit on a Windows or Mac system and configuring the Duo's high-octane features, including photo-sharing server software (so you can e-mail an embedded link for a secure connection to your drive); media streaming to UPnP- and DLNA-compliant devices (the latter is the Digital Liv-

## PC WORLD TOP 5 NETWORK ATTACHED STORAGE DRIVES

MODEL	PCW Rating	Performance	Features
<b>BEST BUY</b> <b>1</b> Netgear ReadyNAS Duo <b>\$400 NEW</b> <a href="http://find.pcworld.com/60441">find.pcworld.com/60441</a>	<b>87</b> <b>VERY GOOD</b>	<ul style="list-style-type: none"> <li>• Overall performance: Superior</li> <li>• Copy files: 284 seconds</li> <li>• File search: 312 seconds</li> </ul>	<ul style="list-style-type: none"> <li>• 500GB</li> <li>• 7200 rpm</li> <li>• SATA-150, USB 2.0, gigabit ethernet</li> <li>• Cost per gigabyte: \$0.80</li> </ul>
BOTTOM LINE: Compact, two-bay, hot-swappable NAS device packs a strong punch, both in features and performance.			
<b>2</b> Netgear ReadyNAS NV+ <b>\$1099</b> <a href="http://find.pcworld.com/57859">find.pcworld.com/57859</a>	<b>83</b> <b>VERY GOOD</b>	<ul style="list-style-type: none"> <li>• Overall performance: Superior</li> <li>• Copy files: 373 seconds</li> <li>• File search: 563 seconds</li> </ul>	<ul style="list-style-type: none"> <li>• 1000GB</li> <li>• 7200 rpm</li> <li>• USB 2.0, gigabit ethernet</li> <li>• Cost per gigabyte: \$1.10</li> </ul>
BOTTOM LINE: Fast (on most tests) but expensive device comes with deep settings well suited for business use.			
<b>3</b> Iomega StorCenter Network Hard Drive <b>\$359</b> <a href="http://find.pcworld.com/60433">find.pcworld.com/60433</a>	<b>81</b> <b>VERY GOOD</b>	<ul style="list-style-type: none"> <li>• Overall performance: Good</li> <li>• Copy files: 355 seconds</li> <li>• File search: 296 seconds</li> </ul>	<ul style="list-style-type: none"> <li>• 1000GB</li> <li>• 7200 rpm</li> <li>• SATA-300, USB 2.0, gigabit ethernet</li> <li>• Cost per gigabyte: \$0.36</li> </ul>
BOTTOM LINE: Easy to configure, this fast network drive offers a substantial feature set suitable for both home and office.			
<b>4</b> Synology Disk Station DS207+ <b>\$547 NEW</b> <a href="http://find.pcworld.com/60436">find.pcworld.com/60436</a>	<b>80</b> <b>VERY GOOD</b>	<ul style="list-style-type: none"> <li>• Overall performance: Very Good</li> <li>• Copy files: 277 seconds</li> <li>• File search: 482 seconds</li> </ul>	<ul style="list-style-type: none"> <li>• 1000GB</li> <li>• 7200 rpm</li> <li>• External SATA-300, USB 2.0, gigabit ethernet</li> <li>• Cost per gigabyte: \$0.55</li> </ul>
BOTTOM LINE: Two-bay network storage device includes easy-to-use software and a robust set of features.			
<b>5</b> Maxtor Shared Storage II <b>\$500</b> <a href="http://find.pcworld.com/55239">find.pcworld.com/55239</a>	<b>80</b> <b>VERY GOOD</b>	<ul style="list-style-type: none"> <li>• Overall performance: Very Good</li> <li>• Copy files: 333 seconds</li> <li>• File search: 245 seconds</li> </ul>	<ul style="list-style-type: none"> <li>• 1000GB</li> <li>• 7200 rpm</li> <li>• Gigabit ethernet</li> <li>• Cost per gigabyte: \$0.50</li> </ul>
BOTTOM LINE: Solid performer has a backup button, a print server, and a media server, and helps organize media files.			

CHART NOTES: Prices and rankings are as of 3/28/08. For full performance data, see [find.pcworld.com/58247](http://find.pcworld.com/58247).

ing Network Alliance standard); and support for Apple's iTunes, Logitech's Squeezebox SqueezeCenter, Microsoft's Windows Media Center and Xbox 360, Sonos's Digital Music System, and Sony's PlayStation 3. Uniquely, the Duo even has an embedded BitTorrent client so you can download directly to the device.

### Synology: Colorful, Clear Navigation

Synology earns high marks for the stellar software bundled with its four-drive CS407 and two-drive DS207+. A Linux-based operating system, Disk Station Manager 2.0, marries the depth of what the ReadyNAS is capable of doing with a terrific user interface that makes

any task a simple button push away. Want to stream files to game consoles? No problem. Need to create a photo-sharing site? Simple—just enable the feature and drop files in a folder. (That makes the task even easier than it is on the ReadyNAS Duo or the HP Media Vault.) Both Synology models even have SSL/TLS protocols >>

### MORE ONLINE

Visit [find.pcworld.com/58247](http://find.pcworld.com/58247) to see the full reviews, specs, and latest prices for all the NAS devices we've tested.



on HTTPS, which makes for more-secure remote access to the drives via the Web. (The ReadyNAS Duo also offers this feature.)

The two units proved their performance mettle in our tests, producing similarly speedy numbers near the top of the pack. Their only performance hiccup was in our test for writing a large (3.06GB) file, where they were notably slower than the competition's average.

Both Synology devices lack removable drive bays; however, you can replace drives that are screwed inside the chassis, and mounting and securing drives inside the enclosure is easy.

The obvious difference between the two systems is that the DS207+ is a little smaller, since it supports just two drives, while the CS407 houses four. For data redundancy across drives,

both models can be rigged for RAID 0 or RAID 1, and the CS407 adds RAID 5.

### Tiny, Flexible, Friendly

HP's Media Vault mv2120 screams *friendly*: Its calling card is a soft and chewy interface that even NAS rookies can digest in seconds. The menu system's approachable push-button design walks

you through the setup of everything from media folder shortcuts to premade video, photo, and music directories to automated file backups.

The mv2120's software even helps you set up a simple (though HP-branded) photo-sharing Web site so that you can grant external access to the NAS without broadcasting your IP address

to the world (I created, for example, PCWtest.hpmediasmart.com). The mv2120 also takes the network interface to new heights—one slider, for instance, adjusts how often the device pings iTunes to back up music.

Unfortunately, the HP model's performance was lackluster. In our tests, the mv2120 was consistently average compared with all the other NAS models that we evaluated here.

The mv2120's hardware also cuts a couple of corners. The largely plastic housing makes the unit feel a bit lightweight. Another issue is that the primary drive that comes with the unit cannot be replaced by the user, because it contains the NAS's operating system.

In contrast to the HP Media Vault mv2120's abundance, LaCie's Ethernet Big Disk is short on features: It is simply a single, 1TB drive for storing and sharing files.

The Big Disk didn't score big points with us in performance, either. Coming in toward the back of the pack, it poked along. The best it could manage was in our copying-files tests, completing the run in 384 seconds. By comparison, Synology's DS207+ finished the same task in 277 seconds.

In the end, while Synology's units score massive points for their software, the ReadyNAS Duo comes out as the big winner, winding up on top for its rock-solid construction, highly configurable software, and impressively fast performance.

—Darren Gladstone



**SIMPLE BUT SLOW:** The aptly named LaCie Ethernet Big Disk isn't fast or feature-filled.

## DIRECT-ATTACHED STORAGE

### Drobo: An Alternative Approach to NAS

TECHNICALLY, DATA ROBOTICS' Drobo falls outside the scope of what we consider a NAS device—namely, an integrated box with at least one hard disk and an ethernet connection so you can share the device on a network.

Nevertheless, the Drobo ([find.pcworld.com/60683](http://find.pcworld.com/60683)) deserves mention. Priced at \$500, this USB direct-attached storage appliance provides a four-bay enclosure for adding your own drives to the unit. The Drobo uses data virtualization in lieu of RAID to provide data redundancy over multiple drives, as well as to monitor drives for disk failure.

Rather than release a dedicated NAS, Data Robotics came up with the DroboShare. This \$200 add-on lets you link up to two Drobo units



**NETWORK SLED:** The DroboShare turns Data Robotics' Drobo direct-attached drive into a network-shared drive.

to your network (Linux support is still in beta). The Drobo's simple dashboard software automates the network configuration process. Since it's not a native NAS device, you don't get features like FTP, Web server, print server, or even Web-based drive management. But you can unplug the Drobo from your network.



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## Dash Express GPS Harnesses the Web

DASH NAVIGATION'S \$400 Dash Express does things differently from most GPS units, thanks to its smart Web-connected service.

Other GPS devices retrieve traffic and gas-price data via Bluetooth or radio services, but the Dash offers robust two-way communications via GSM cellular and Wi-Fi.

I activated the Dash Service (\$10 to \$13 a month) on my PC at MyDash.com in minutes by submitting my name, my e-mail address, and my device's serial number. Once it was activated, the

service offered to begin sending destinations to my GPS device, starting with my home address.

At 13.3 ounces and 4.8 by 4.1 by 2.8 inches, the Dash Express is bulky, but that doesn't hamper its usability. To access volume controls and the main menu, you tap touch-sensitive areas on the top of the unit. When the device shows maps, its 4.3-inch, 480-by-272-pixel



touch screen provides two buttons—one for zooming and the other for toggling between 2D and 3D views.

When connected to the Internet, the Dash can perform Yahoo Local searches.

**THE DASH EXPRESS** is a little bit bulky, but its design doesn't hamper its usability.

A search for "gas," for example, brings up not only nearby stations, but their gas prices, updated four times daily. Searches took about half a minute in my tests.

The device identifies up to three routes per destination, including a "best route" based on real-time traffic data from a company that monitors highway sensors and from fleet operators. Over time, the routing will include info collected from other Dash users. The routing uses four color codes to gauge traffic—from green for no congestion to red for stop-and-go.

Monthly costs for Dash's service range from \$10 to \$13, depending on whether you pay as you go or prepay for a year or two. I'd be willing to invest for a longer stretch if the unit could also receive and send e-mail.

Without the service, there is no particular reason to buy this device; but with it, the Dash Express will appeal to commuters and frequent drivers who aren't averse to spending a bit more to take advantage of its features.

—Yardena Arar

## HTC's Small, Smart Ultraportable

THE \$1500 HTC Shift Ultra-

**PCW Test Center** Mobile PC feels like

an oversize smart phone, albeit without the embedded phone dialer. This mini-notebook runs Vista and is the first UMPC with Microsoft's Origami Experience 2.0 software suite. It supports Sprint's high-speed EvDO network and Wi-Fi.

Its modest components—Intel's A110 800-MHz Pentium M processor and 1GB of



RAM—enabled the Shift to perform serviceably in my informal tests. Basic tasks and programs jammed onto the device's 40GB hard drive were fairly snappy. But the unit's boot time was annoyingly pokey at 90 seconds.

The device uses HTC's at-a-glance OS overlay: One button activates the unit's

**THE SHIFT'S** screen slides up and tilts back, for easy viewing.

SnapVue mode, which acts like Windows Mobile 6. You get quick access to push e-mail, SMS messaging, and contacts without the Vista overhead. SnapVue is a battery saver, too. According to HTC, if you work in SnapVue only, the battery should last for about three days.

With Vista running, though, I barely hit the 2-hour mark.

The Shift isn't a true cell-phone/notebook hybrid like the HTC Advantage, but it's a great (albeit expensive) mini-notebook. Though the high price won't faze some business users, it may make consumers think twice.

—Darren Gladstone

**83**  
VERY GOOD

**Shift** | HTC

Pricy UMPC runs Vista but has poor battery life. List: \$1500  
[find.pcworld.com/60661](http://find.pcworld.com/60661)

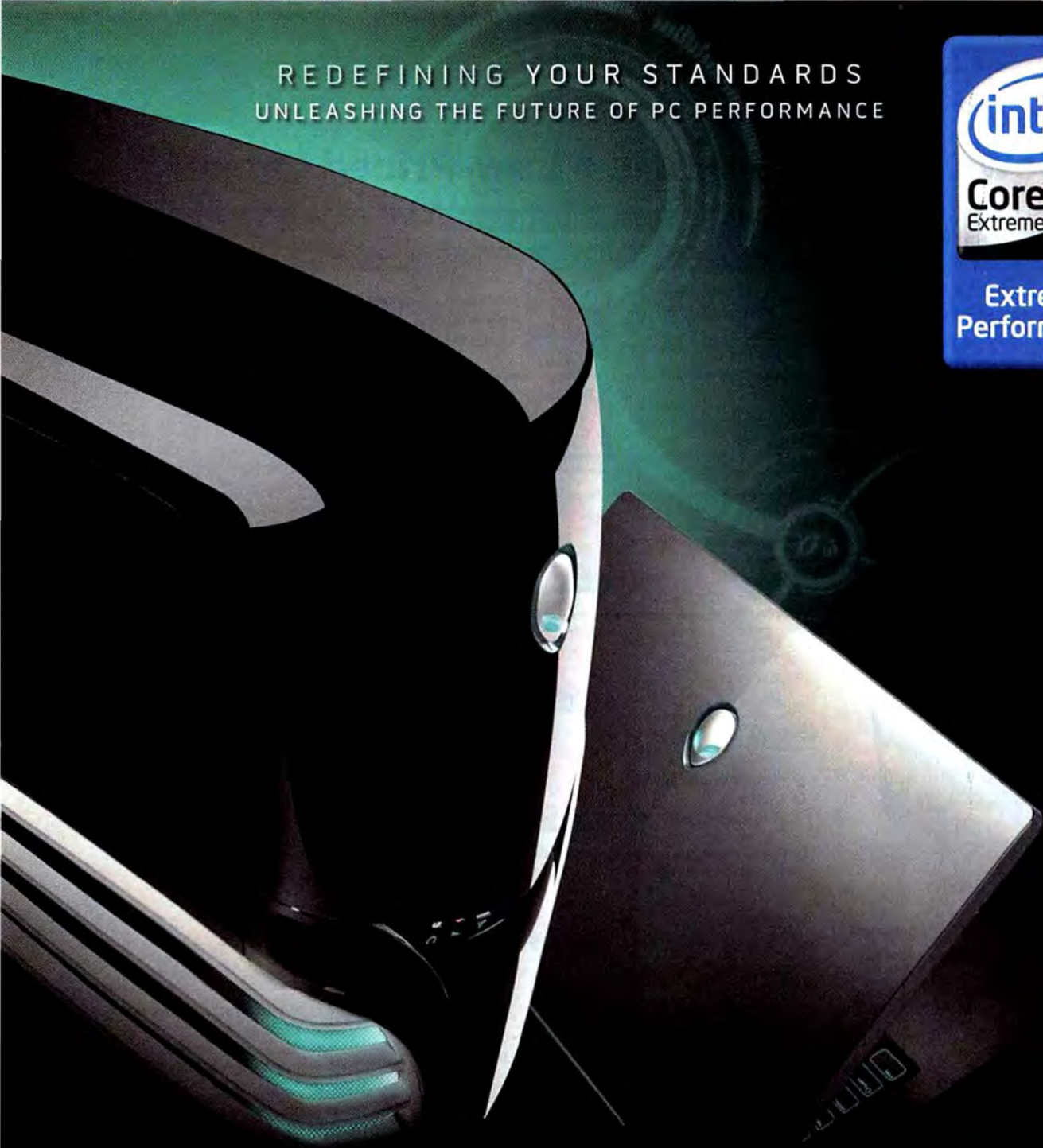
**90**  
SUPERIOR

**Dash Express** | Dash Navigation

Internet connectivity makes this GPS an appealing option for frequent drivers. Street: \$400; service costs \$10 to \$13 per month  
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## New Lenovo Laptop Is a Low-Priced Looker

THREE NEW NOTEBOOKS

**PCW Test Center** break into our *Top Ten All-Purpose Laptops* lineup this month, with Lenovo's IdeaPad Y510 leaping to second place on the strength of its design smarts.

The Y510's rock-solid construction is hardly a surprise in view of Lenovo's history of creating durable laptops. More surprising are the perks piled into this \$900 notebook: a capable Webcam atop the display, excellent speakers, and a host of hypnotic touch-sensitive buttons lining the wide key-



LENOVO'S Y510 looks great and can handle the rigors of the road.

board. It's roomy, too, with a 250GB hard drive inside. Still, the Y510 has middling performance and average battery life—like Acer's top-ranked Aspire 5920-6954.

The new Sony VAIO VGN-SZ791N stands out by delivering knockout performance while straddling the line between all-purpose and ultra-portable notebooks.

—Darren Gladstone

### MORE ONLINE

Visit [find.pcworld.com/60709](http://find.pcworld.com/60709) to find full reviews, specs, and the latest prices for all of the notebook PCs we've tested.

### PC WORLD TOP 10 ALL-PURPOSE LAPTOPS

MODEL	PCW Rating	Performance	Features and specifications
<b>1</b> <b>BEST BUY</b> Acer Aspire 5920-6954 <b>\$999</b> <a href="http://find.pcworld.com/59990">find.pcworld.com/59990</a>	<b>83</b> <b>VERY GOOD</b>	<ul style="list-style-type: none"> <li>WorldBench 6 score: 70 Good</li> <li>Overall design: Very Good</li> <li>Tested battery life: 3:52</li> </ul>	<ul style="list-style-type: none"> <li>1.66-GHz Core 2 Duo T5450</li> <li>15.4-inch wide screen</li> <li>7.2 pounds</li> <li>HD DVD-ROM</li> </ul>
BOTTOM LINE: Moderately powerful laptop has dedicated nVidia graphics, HDMI output, and an HD DVD reader.			
<b>2</b> Lenovo IdeaPad Y510 <b>\$900 NEW</b> <a href="http://find.pcworld.com/60635">find.pcworld.com/60635</a>	<b>83</b> <b>VERY GOOD</b>	<ul style="list-style-type: none"> <li>WorldBench 6 score: 70 Good</li> <li>Overall design: Very Good</li> <li>Tested battery life: 3:42</li> </ul>	<ul style="list-style-type: none"> <li>1.66-GHz Core 2 Duo T5450</li> <li>15.4-inch wide screen</li> <li>6.3 pounds</li> <li>DVD±R DL/DVD±RW/-RAM</li> </ul>
BOTTOM LINE: Well-built laptop provides middle-of-the-road performance and a sizable hard disk for a good price.			
<b>3</b> HP Pavilion dv2660se <b>\$949</b> <a href="http://find.pcworld.com/59989">find.pcworld.com/59989</a>	<b>83</b> <b>VERY GOOD</b>	<ul style="list-style-type: none"> <li>WorldBench 6 score: 67 Good</li> <li>Overall design: Very Good</li> <li>Tested battery life: 6:19</li> </ul>	<ul style="list-style-type: none"> <li>1.5-GHz Core 2 Duo T5250</li> <li>14.1-inch wide screen</li> <li>6.0 pounds</li> <li>DVD±R DL/DVD±RW</li> </ul>
BOTTOM LINE: Designer notebook with excellent battery life will appeal to multimedia fans and to frequent travelers.			
<b>4</b> Dell Inspiron 1525 <b>\$963</b> <a href="http://find.pcworld.com/59991">find.pcworld.com/59991</a>	<b>81</b> <b>VERY GOOD</b>	<ul style="list-style-type: none"> <li>WorldBench 6 score: 78 Very Good</li> <li>Overall design: Good</li> <li>Tested battery life: 4:04</li> </ul>	<ul style="list-style-type: none"> <li>2-GHz Core 2 Duo T7250</li> <li>15.4-inch wide screen</li> <li>6.0 pounds</li> <li>DVD±R DL/DVD±RW</li> </ul>
BOTTOM LINE: The customization options for this zippy \$999 portable let picky shoppers nail down every detail.			
<b>5</b> Lenovo ThinkPad R61 <b>\$1395</b> <a href="http://find.pcworld.com/57905">find.pcworld.com/57905</a>	<b>80</b> <b>VERY GOOD</b>	<ul style="list-style-type: none"> <li>WorldBench 6 score: 80 Very Good</li> <li>Overall design: Very Good</li> <li>Tested battery life: 3:19</li> </ul>	<ul style="list-style-type: none"> <li>2.2-GHz Core 2 Duo T7500</li> <li>14.1-inch wide screen</li> <li>5.8 pounds</li> <li>DVD±R DL/DVD±RW/-RAM</li> </ul>
BOTTOM LINE: The R61's slim size, light weight, and keyboard illumination make it ideal for taking with you on the road.			
<b>6</b> Fujitsu Lifebook A6120 <b>\$1299 NEW</b> <a href="http://find.pcworld.com/60625">find.pcworld.com/60625</a>	<b>78</b> <b>GOOD</b>	<ul style="list-style-type: none"> <li>WorldBench 6 score: 84 Very Good</li> <li>Overall design: Good</li> <li>Tested battery life: 2:36</li> </ul>	<ul style="list-style-type: none"> <li>2.10-GHz Core 2 Duo T8100</li> <li>15.3-inch wide screen</li> <li>6.3 pounds</li> <li>DVD±R DL/DVD±RW/-RAM</li> </ul>
BOTTOM LINE: Feature-packed notebook includes plenty of inputs, but its battery life was far from great.			
<b>7</b> Toshiba Satellite Pro A210-EZ2201 <b>\$699</b> <a href="http://find.pcworld.com/59993">find.pcworld.com/59993</a>	<b>75</b> <b>GOOD</b>	<ul style="list-style-type: none"> <li>WorldBench 6 score: 54 Poor</li> <li>Overall design: Good</li> <li>Tested battery life: 2:14</li> </ul>	<ul style="list-style-type: none"> <li>1.8-GHz Athlon 64 X2 Dual-Core TK-55</li> <li>15.4-inch wide screen</li> <li>6.0 pounds</li> <li>DVD±R DL/DVD±RW/-RAM</li> </ul>
BOTTOM LINE: Low-cost laptop has sweet built-in speakers, but it's slow, as its weak WorldBench 6 score shows.			
<b>8</b> Sony VAIO VGN-SZ791N <b>\$2500 NEW</b> <a href="http://find.pcworld.com/60627">find.pcworld.com/60627</a>	<b>71</b> <b>GOOD</b>	<ul style="list-style-type: none"> <li>WorldBench 6 score: 94 Superior</li> <li>Overall design: Good</li> <li>Tested battery life: 3:50</li> </ul>	<ul style="list-style-type: none"> <li>2.5-GHz Core 2 Duo T9300</li> <li>13.3-inch wide screen</li> <li>4.0 pounds</li> <li>DVD±R DL/DVD±RW/-RAM</li> </ul>
BOTTOM LINE: This small and stylish but expensive VAIO delivers the best performance of any laptop currently on the chart.			
<b>9</b> Sony VAIO VGN-FZ180E/B <b>\$1850</b> <a href="http://find.pcworld.com/57907">find.pcworld.com/57907</a>	<b>71</b> <b>GOOD</b>	<ul style="list-style-type: none"> <li>WorldBench 6 score: 75 Very Good</li> <li>Overall design: Good</li> <li>Tested battery life: 4:28</li> </ul>	<ul style="list-style-type: none"> <li>2-GHz Core 2 Duo T7300</li> <li>15.4-inch wide screen</li> <li>5.7 pounds</li> <li>Blu-ray Drive-RE/BD-R</li> </ul>
BOTTOM LINE: Midsize notebook with a nice screen and Blu-ray Disc drive turned in great performance and long battery life.			
<b>10</b> Toshiba Tecra M9-S5514 <b>\$1800</b> <a href="http://find.pcworld.com/58349">find.pcworld.com/58349</a>	<b>69</b> <b>FAIR</b>	<ul style="list-style-type: none"> <li>WorldBench 6 score: 73 Good</li> <li>Overall design: Good</li> <li>Tested battery life: 2:48</li> </ul>	<ul style="list-style-type: none"> <li>2.2-GHz Core 2 Duo T7500</li> <li>14.1-inch wide screen</li> <li>5.4 pounds</li> <li>DVD±R DL/DVD±RW</li> </ul>
BOTTOM LINE: Conscientious laptop meets EPEAT Gold environmental standard but is average in speed and battery life.			

CHART NOTES: Prices and ratings are as of 4/11/08. Weight does not include AC adapter, power cord, docking station, or extra batteries.



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## Norton 360 Takes a Small Step Forward

NORTON 360, Symantec's all-around security, backup, and PC-tuning suite, takes a small step forward with this year's version 2. The easy-to-use collection of applications costs \$79 for three PCs and covers all the bases; but in our tests, its core security protection wasn't especially good. The upgraded backup feature permits more control than previous versions of the tool offered, and it lets you send files to your iPod, online storage, and traditional backup destinations, but it ran into problems restoring files from online storage in our testing.

The security suite's well-designed control menu displays four big-button health

indicators for PC Security, Identity Protection, Backup, and PC Tuneup. Task menus drop down from each button when you mouse over it.

PC Security covers virus scans and firewall protection; Symantec says the core of its malware detection hasn't changed, but version 2 adds useful Internet Explorer vulnerability blocking. In detection tests from Germany's AV-Test, Norton 360 blocked 96.36 percent of AV-Test's huge zoo of Trojan horses, bots, and other malware—adequate but not stellar performance.



### ASK OUR EXPERTS

## The Best Battery Options

SHOULD I GO with an extended-life battery or choose an external laptop battery for my notebook PC?

*David Dively, Shelbyville, Kentucky*

**Senior Writer Darren Gladstone responds:** As a frequent flier, I would snag an internal extended-life battery. They're easier to stow and harder to lose. Plus, new Department of Transportation rules ([find.pcworld.com/60409](http://find.pcworld.com/60409)) let you carry aboard with you multiple internal notebook batteries (which are typically rated at less than 100 watt-hours and fewer than 8 grams of equivalent lithium content); you're allowed only two "larger" lithium batteries—DOT's term for external laptop batteries. You can no longer check in lithium-ion batteries with your luggage at all. Regrettably, there's no "magic bullet" equation for determining a laptop battery's life, whether internal or external, according to IDC analyst Richard Shim. If battery life is a concern for you, buy a notebook known to have lengthy staying power. Some ultraportables support a battery life of up to 8 hours.

E-mail your questions to [askourexperts@pcworld.com](mailto:askourexperts@pcworld.com), or post them online at [forums.pcworld.com](http://forums.pcworld.com).



**NORTON 360'S IDENTITY** protection feature adds a toolbar to both Internet Explorer and Firefox to block phishing sites and other attacks.

Tests gauging the app's ability to detect unknown threats came back mixed: The suite detected just 27.81 percent of the thousands of new, nonrunning malware samples thrown at it in scans using one-month-old signatures. But it stopped 80 percent of malware threats in AV-Test's extensive behavior trials, which measure an anti-virus program's ability to recognize malware based on how the suspect code acts.

Identity Protection adds a toolbar to IE and Firefox to block phishing sites and browser-based identity-theft attacks. The app also manages Web log-ins and can automatically fill Web forms.

Under PC Tuneup, you get options for tasks such as defragmenting your hard drive, removing temp files from Windows and IE, and (new to version 2) cleaning up the Registry.

Norton 360's improved Backup function permits you to use Symantec's online storage (2GB for free, and more for a price). But in our tests using a Vista laptop, the program failed three times in a row when we tried to restore files from online; Symantec says that

this problem affected only a few users and has since been resolved.

In our extensive performance tests using World-Bench 6 with Firefox, Microsoft Office, WinZip, and other apps, Norton 360 slowed the pace by an average of 8.3 percent on a fairly beefy desktop PC, and by an average of 7 percent on a less-powerful laptop. Results varied greatly from task to task: Disk-intensive tests slowed performance by up to 30 percent; other tasks weren't hindered at all.

Norton 360 is an easy-to-use program that protects against most Web threats and helps maintain your computer, but you can obtain better protection with security products that may offer fewer features.

—Erik Larkin



### Norton 360 Version 2.0

**Symantec**

Security suite covers all the bases in an easy-to-use package, but doesn't ace PC protection. List: \$79 (three-PC license)

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## Photoshop Express Offers Easy Image Editing

YOU CAN GET image editing and free, Web-based photo storage under Adobe's Photoshop moniker. Photoshop Express—now in public beta—offers more than the imprimatur of its heritage, though: It makes image editing available wherever you have a Web connection. But this early version has some annoyances and omissions.

Adobe assumes that you'll use the free Photoshop Express service to upload, edit, organize, store, share, and showcase your images. At launch, the company offers 2GB of free storage per user. Adobe says the service will

### Photoshop Express (Beta)

Adobe

Early beta version, not rated  
Offers an easy way for inexperienced users to edit and share their photos. Free  
[find.pcworld.com/60663](http://find.pcworld.com/60663)

always have a free component, but the plan is to offer more storage, offline editing, and additional editing options. Adobe hasn't yet said when these extra-cost features will be available.

Upload times vary, but it was a bit slow at uploading 8-megapixel pictures. Adobe notes that high demand on the system and on the two data centers dedicated to Photoshop Express may affect upload times. The service, designed using Flash, currently limits the maximum image size to 4000 by 4000 pixels, or 10MB.

Still, Flash adds some of the best features to Photoshop Express: Select an action (crop and rotate, auto correct, exposure, red-eye removal, touch-up, saturation, white balance, highlight, fill light, sharpen, soft focus, or an image effect),



**SELECT AN EDITING tool to use on a photo, and Photoshop Express will show you a preview of the results as a thumbnail image.**

and see a preview of the results in a thumbnail image. This approach simplifies editing, without resort to histograms and imaging complexities. The program uses your PC's processing power to render thumbnails in real time, and it works quickly.

The app currently lacks a feature for saving your edited image as a local file that you can use outside Photoshop Express, but Adobe says a fix is in the works. It

also lacks a layered undo feature, but you can undo edits if you remember what you did; edits that you make in Photoshop Express don't alter the original image.

The application has drag-and-drop image organizing among folders, image captions, and image ratings. Albums and slide shows can be shared via the Web. A community component lets you browse other people's galleries and integrates with Facebook, Photobucket, and Picasa (you can log in to any of those accounts from within Photoshop Express).

The free Photoshop Express provides great value and easy usability, despite its current limitations. Adobe says that it expects to fix most of the flaws I found; and when it does, I will rate the service. It will undoubtedly be a formidable competitor to sites like Picnik. Nevertheless, advanced users who don't need the visual hand-holding that Photoshop Express provides may prefer free imaging applications like Paint.net.

—Edward N. Albro

—Melissa J. Perenson

## Google Docs Goes Offline

GOOGLE DOCS IS adding a key feature that makes it a true competitor to Microsoft Office: offline access.

It's promising, but the early beta I tested had limitations.

The offline version relies on Google Gears, an offline sync-



ing technology; once you've installed Gears on your PC, Docs syncs your documents between its servers and your browser. Thereafter, you can access docs.google.com offline, and all changes that you make to documents are saved when you reconnect.

That's the theory, at least. My changes never made it to Google's servers; I could see my edits when I viewed the

document in IE on my own PC, but on other browsers and other PCs, the changes vanished. When I tried again on yet another PC, though, everything worked fine.

The offline tools are rather limited: You can't create a new document, view a document's revision history, alter the style, insert photos, or check your spelling.

Google needs to do some polishing to make this work seamlessly; but once it does, it could be a great tool.



### Google Docs Offline

It's buggy and limited, but has potential. Free  
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## Affordable Canon Camera Is Kid-Friendly

**PCW Test Center** MY THREE-YEAR-OLD son thinks he's Ansel Adams, so we need a camera that works for him as well as for me. The Canon PowerShot A470 fits the bill.

The 7.1-megapixel A470 is very inexpensive (\$130), so I don't have to worry about the damage a toddler might do to it. And I don't have to trade image quality for price; in our lab tests, it performed

as well as several far more expensive cameras.

Still, there are some trade-offs to this bargain model. Its battery life was only fair in our lab tests, and it lacks image stabilization, which means you'll need a steady hand or a tripod to prevent photos from looking blurry.

The A470's optical zoom tops out at 3.4X, but even working with that limited range I managed to capture some great playground shots during my testing. The camera also lacks any manual focus settings, though you do get 14 shooting modes—plenty to keep a casual photographer entertained.

The 2.5-inch LCD screen on the PowerShot A470 sat-

isfied me and my son; both of us could clearly see the images we captured. Unfortunately, there's no viewfinder, so you have to rely on the LCD screen, which tends to get washed out in outdoor light. And unlike other cameras in the same price range, this Canon is too big to fit into an adult's jeans pocket (to say nothing of a preschooler's).

On a more positive note, the A470's shutter speed is

**THE A470 COMES** with a blue, gray, red, or orange accent.

excellent—we never missed a shot while waiting for the camera to respond after clicking the button.

All in all, the A470 is a good no-frills camera at a rock-bottom price, with an easy learning curve. If a three-year-old can take good pictures with the Canon PowerShot A470, you can, too.

—Donald Malouf



**77**  
GOOD

### PowerShot A470 | Canon

This bargain-priced, no-frills camera offers very good image quality.

List: \$130

[find.pcworld.com/60679](http://find.pcworld.com/60679)

## An Adaptable Printer for Road Warriors

**PCW Test Center** HP'S OFFICEJET H470 Mobile Printer is for frequent travelers who need to print reports, photos, or brochures from a notebook, camera, or phone.

We tested the H470wbt model (\$350), which adds a Bluetooth wireless adapter and a rechargeable battery

to the entry-level \$224 unit. I was astonished at how easily it printed photos from my Palm Treo via the Bluetooth adapter, which plugs into a recessed USB port. The optional 802.11g print adapter (\$80) fits into the same port, though it is

slightly trickier to configure.

In our print-quality tests, the H470wbt produced text documents with well-formed characters. We noticed banding and diagonal interference patterns in our challenging line art test. On plain paper, photos looked grainy and washed out. But when we replaced the black cartridge with a photo-color cartridge (giving H470wbt a total of six inks), it printed superb images on photo paper.

The H470wbt is an adequate on-the-go printer. It's a bit slower than HP's desktop printers, and it fell far short of the fastest models in our *Top 10 Inkjets* chart. Text pages printed at a tol-

erable 7.1 pages per minute, but color graphics on plain paper came out at a mediocre 2.2 ppm. Our test photo took 2 minutes to print on letter-size glossy paper.

Despite its slow performance, mobile users will find it a worthy alternative to Canon's portable Pixma iP90v.

—Paul Jasper



**HP'S PRINTER**  
weighs just 5 pounds  
with its battery attached.

**67**  
FAIR

### Officejet H470wbt Mobile Printer | HP

Good for on-the-go printing, but may be too slow for in-office use.

Street: \$350

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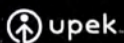
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## An Elegant, Affordable Music System

WIRELESS music-streaming devices haven't quite caught on yet. So far, they've either been cheap and clunky or graceful but very pricey. The new Squeezebox Duet, from Logitech division Slim Devices, splits the difference between those two extremes. At \$400 for a one-room set-up (or \$550 for a two-room system), it's a reasonably priced alternative to high-end competing products such as the \$1000 Sonos Digital Music System.

The Duet was easier to set up than most other streaming devices I've tried. It detected networks in my area and allowed me to choose one to join.

The Duet's receiver is a black box with one button in the front (you push it to

connect to your network). It has RCA, optical, and digital coaxial outputs for connecting to a stereo, a boom box, or powered speakers.

Once the Duet is connected to your network, you have plenty of playback choices. The Duet handles many formats, including MP3, AAC, Ogg Vorbis, FLAC, Apple Lossless, .wav, and AIFF. The Duet has one gaping hole, however: It won't play files with digital rights management protection built in.

The Duet can connect with online music sources, too, including Rhapsody, Pandora, and Slacker, as well as Internet radio. You can use an



existing account or sign up via SqueezeNetwork.com, a Web site that's associated with your Duet.

The site has kinks to work out, though. When I tried to sign up for Pandora, I received an error message that said, literally, 'BLAH BLAH.' Not very helpful. I successfully signed up for Last.fm, but once I had done so, I couldn't find a way to play Last.fm through the Duet.

Using the Duet's controller is mostly a pleasure. The navigation makes sense, and the 2.4-inch color screen has lots of room to show your choices. Though the display features clear text and album art, it's not as large, bright, or luxurious as the screen of the Sonos controller.

I have a few gripes about the Duet. While playback was often faultless, at times the Duet failed to play a song or cut out in the middle of one. The system would report that it was still connected to my network, but it would be unable to play a

**THE 2.4-INCH SCREEN on the controller is easy on the eyes.**

song on my PC, even though it may have played the same song a few minutes before. Also, the controller's scroll wheel is not always responsive: Getting to certain menu items was frequently frustrating. And I experienced long lag times between pressing a button and seeing a result.

Overall, this is an elegant system that's simple to set up and use, and its price is reasonable. But its habit of cutting out or failing to play can be extremely annoying.

—Edward N. Albro

### TECH TREND

## HDTVs: Don't Overlook Overscan



WHEN WATCHING high-definition cable programming on an HDTV, you may notice that the set crops out text and station logos. This effect is the result of overscan, which HDTV makers often enable by default to

eliminate the visually displeasing, flickering white bar of digital information that appears above HD programming. TV manufacturers choose the setting because most set-top boxes—cable and satellite alike—don't hide the digital information well. However, it's important to turn this feature off at times, especially when you're using a Blu-ray Disc player to watch 1080p content on a 1080p HDTV. If you don't see every pixel you should see, you're not viewing a true 1920 by 1080 progressive-scan picture. The name of the viewing mode differs from brand to brand, but it's commonly called Dot-by-Dot, Point-to-Point, Just, or simply Overscan Off. If you're shopping for a new HDTV, make sure that the set you want has the option to disable overscan mode; not all sets do.

—Greg Adler

**79**  
GOOD

**Squeezebox Duet**  
Slim Devices (Logitech)

An elegant music system that's actually affordable.

List: \$400

[www.slimdevices.com](http://www.slimdevices.com)



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*"The pricetag on the new UPS is \$99.99. While I'm not in the habit of endorsing products in this blog, if you're in the market for a workstation-class UPS, why not opt for the greener option?"*

- Heather Clancy  
ZDNet.com

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\*Average savings are based on comparable competitive models, and are comprised of two energy saving features: An ultra efficient electrical design, and the master/controlled outlets feature.



## BlackBerry Models Dominate PDA Phone Field

**PCW Test Center** TWO BLACKBERRY devices, the sleek new Pearl 8120 and the Curve 8320, land atop our list of PDA phones this month. The e-mail-friendly Pearl offers excellent multimedia features, while the Curve can transmit voice calls over Wi-Fi.

Falling outside of our PDA phones Top 5 was the Palm Centro for AT&T's GSM network; it outscored the



**THE BLACKBERRY PEARL 8120** boasts strong multimedia tools.

Centro for the Sprint network that we tested previously, thanks to better talk-time battery life.

The LG enV and the Samsung Alias top our list of standard cell phones. The Helio Mysto, which suffered from poor talk-time battery life, and the expensive Asus P527 both missed our chart.

—Liane Cassavoy

### MORE ONLINE

For more information about the cell phones reviewed here, including testing details, go to [find.pcworld.com/53058](http://find.pcworld.com/53058).

### PC WORLD TOP 10 CELL PHONES

PDA PHONE	PCW Rating	Performance	Features and specifications
<b>1</b> <b>BEST BUY</b> RIM BlackBerry Pearl 8120 \$250 NEW <a href="http://find.pcworld.com/60602">find.pcworld.com/60602</a>	<b>89</b> VERY GOOD	<ul style="list-style-type: none"> <li>Battery life (hours:minutes): 9:43</li> <li>Battery life score: Superior</li> <li>Overall design: Superior</li> </ul>	<ul style="list-style-type: none"> <li>Carrier: AT&amp;T</li> <li>Form factor: Candy bar</li> <li>Weight: 3.2 ounces</li> <li>Camera resolution: 2.0 megapixels</li> </ul>
BOTTOM LINE: E-mail-friendly handset boasts strong multimedia features, including a camera and media player.			
<b>2</b> RIM BlackBerry Curve 8320 \$300 <a href="http://find.pcworld.com/58957">find.pcworld.com/58957</a>	<b>88</b> VERY GOOD	<ul style="list-style-type: none"> <li>Battery life (hours:minutes): 10:00</li> <li>Battery life score: Superior</li> <li>Overall design: Very Good</li> </ul>	<ul style="list-style-type: none"> <li>Carrier: T-Mobile</li> <li>Form factor: Candy bar</li> <li>Weight: 3.9 ounces</li> <li>Camera resolution: 2.0 megapixels</li> </ul>
BOTTOM LINE: Ability to handle voice calls over Wi-Fi networks makes an excellent phone even better.			
<b>3</b> T-Mobile Dash (Windows Mobile 6) \$150 <a href="http://find.pcworld.com/57387">find.pcworld.com/57387</a>	<b>85</b> VERY GOOD	<ul style="list-style-type: none"> <li>Battery life (hours:minutes): 8:40</li> <li>Battery life score: Very Good</li> <li>Overall design: Very Good</li> </ul>	<ul style="list-style-type: none"> <li>Carrier: T-Mobile</li> <li>Form factor: Candy bar</li> <li>Weight: 4.2 ounces</li> <li>Camera resolution: 1.3 megapixels</li> </ul>
BOTTOM LINE: The upgrade to Windows Mobile 6 adds support for Microsoft's productivity applications.			
<b>4</b> T-Mobile Shadow \$200 <a href="http://find.pcworld.com/59741">find.pcworld.com/59741</a>	<b>84</b> VERY GOOD	<ul style="list-style-type: none"> <li>Battery life (hours:minutes): 10:00</li> <li>Battery life score: Superior</li> <li>Overall design: Very Good</li> </ul>	<ul style="list-style-type: none"> <li>Carrier: T-Mobile</li> <li>Form factor: Slide</li> <li>Weight: 5.29 ounces</li> <li>Camera resolution: 2.0 megapixels</li> </ul>
BOTTOM LINE: This smart phone is smarter than most, but its tinny call quality may be a concern.			
<b>5</b> Apple iPhone \$399 <a href="http://find.pcworld.com/57879">find.pcworld.com/57879</a>	<b>83</b> VERY GOOD	<ul style="list-style-type: none"> <li>Battery life (hours:minutes): 10:00</li> <li>Battery life score: Superior</li> <li>Overall design: Superior</li> </ul>	<ul style="list-style-type: none"> <li>Carrier: AT&amp;T</li> <li>Form factor: Candy bar</li> <li>Weight: 4.8 ounces</li> <li>Camera resolution: 2.0 megapixels</li> </ul>
BOTTOM LINE: Touch-screen phone is innovative, but it's expensive, and it lacks 3G network access.			
STANDARD PHONE	PCW Rating	Performance	Features and specifications
<b>1</b> <b>BEST BUY</b> LG enV \$130 <a href="http://find.pcworld.com/56847">find.pcworld.com/56847</a>	<b>81</b> VERY GOOD	<ul style="list-style-type: none"> <li>Battery life (hours:minutes): 5:05</li> <li>Battery life score: Fair</li> <li>Overall design: Very Good</li> </ul>	<ul style="list-style-type: none"> <li>Carrier: Verizon</li> <li>Form factor: Clamshell</li> <li>Weight: 4.6 ounces</li> <li>Camera resolution: 2.0 megapixels</li> </ul>
BOTTOM LINE: This isn't the slimmest phone, but it offers excellent messaging features and great multimedia options.			
<b>2</b> Samsung Alias (SCH-u740) \$130 <a href="http://find.pcworld.com/56841">find.pcworld.com/56841</a>	<b>80</b> VERY GOOD	<ul style="list-style-type: none"> <li>Battery life (hours:minutes): 4:46</li> <li>Battery life score: Poor</li> <li>Overall design: Very Good</li> </ul>	<ul style="list-style-type: none"> <li>Carrier: Verizon</li> <li>Form factor: Clamshell</li> <li>Weight: 3.6 ounces</li> <li>Camera resolution: 1.3 megapixels</li> </ul>
BOTTOM LINE: This phone's innovative dual-hinge clamshell design with a QWERTY keyboard makes for easy typing.			
<b>3</b> Motorola Rizr Z3 \$130 <a href="http://find.pcworld.com/56844">find.pcworld.com/56844</a>	<b>80</b> VERY GOOD	<ul style="list-style-type: none"> <li>Battery life (hours:minutes): 10:00</li> <li>Battery life score: Superior</li> <li>Overall design: Very Good</li> </ul>	<ul style="list-style-type: none"> <li>Carrier: T-Mobile</li> <li>Form factor: Slide</li> <li>Weight: 3.8 ounces</li> <li>Camera resolution: 2.0 megapixels</li> </ul>
BOTTOM LINE: Well-designed multimedia phone focuses on user satisfaction, though its keys are a bit sticky.			
<b>4</b> Nokia 5300 Xpress Music \$100 <a href="http://find.pcworld.com/56558">find.pcworld.com/56558</a>	<b>79</b> GOOD	<ul style="list-style-type: none"> <li>Battery life (hours:minutes): 5:06</li> <li>Battery life score: Fair</li> <li>Overall design: Very Good</li> </ul>	<ul style="list-style-type: none"> <li>Carrier: T-Mobile</li> <li>Form factor: Slide</li> <li>Weight: 3.8 ounces</li> <li>Camera resolution: 1.3 megapixels</li> </ul>
BOTTOM LINE: This handset offers excellent music playback features and works well as a phone, too.			
<b>5</b> Helio Ocean \$199 <a href="http://find.pcworld.com/58953">find.pcworld.com/58953</a>	<b>78</b> GOOD	<ul style="list-style-type: none"> <li>Battery life (hours:minutes): 5:05</li> <li>Battery life score: Fair</li> <li>Overall design: Very Good</li> </ul>	<ul style="list-style-type: none"> <li>Carrier: Sprint</li> <li>Form factor: Slide</li> <li>Weight: 5.61 ounces</li> <li>Camera resolution: 2.0 megapixels</li> </ul>
BOTTOM LINE: With an innovative design and great features, the Ocean would be a favorite if it had better call quality.			

CHART NOTES: All prices are as of 4/11/08. Prices are quoted with a two-year service contract, excluding any rebates.





By **Wi-Ex**

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**\$299 MSRP**



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- z Supports a single user
- z Dual Band - works with all US phones\* and data cards
- z No set-up - Great for travel

**\$169 MSRP**



\* zBoost products are compatible with all phones except those on the iDEN, Nextel network.  
 Promotional offer applies to zBoost YX510, YX500-CEL and YX500-PCS. Offer available at [www.Wi-Ex.com](http://www.Wi-Ex.com). Ends 07/02/2008.  
 Wi-Ex® offers a 30-day money back guarantee on all zBoost® products, as well as a full 1-Year manufacturer warranty



## Snap Offers a Unique Way to Chat

THE \$99 SNAP Communicator is part telephone, part intercom. It connects to your PC via USB, and lets you talk to one of eight contacts at the push of a button. Though it's an innovative device, a few limitations hamper its appeal. The biggest of these drawbacks is the fact that all of your contacts must also use the Snap.

Once you have registered your unit online, you can add contacts to your Snap phone. It has eight buttons

to which you assign specific contacts. You can print out a label to insert in the unit so you can remember whom you've assigned each button to; beside each name is a green light that glows when your Snapmate is available.

Push the button, and the contact hears a ring and sees a flashing light. They push a button to answer your call. Conferencing is a cinch: Press three buttons in succession, your pals answer, and you have four voices on the line; each contact can patch in three more people.

The speakerphone sounded crisp in our tests, with only a few instances where words came out stuttered. During a couple of calls, we heard a faint echo.

If you're not quick off the blocks, you might miss a call. The Snap scarcely rings twice before voice mail picks

up, and the ring length isn't customizable. (At this writing, the company says that it will lengthen the ring time, up to four rings.) The .wav-format voice messages are supposed to arrive through e-mail, but my first batch of messages didn't arrive at all. When my messages did arrive, some of them ended up in my spam folder. The Snap doesn't report missed calls, and it's also limited by its USB cord; you're tied to your computer when using it. The manufacturer expects to have a cordless version in 2009.

Because the Snap is a speakerphone, you'll need a headset for privacy. A standard headset with a 2.5mm plug works fine, but that's another cord to futz with.

If you're glued to a desk



**THE SNAP**  
lets you assign each button; just push a button to start a call.

talking to a core group of people many times a day, the Snap could fit the bill. Consider, though, that millions of people are happy using Skype (with videoconferencing to boot, which the Snap lacks), all for free.

—Aoife M. McEvoy

**78**  
GOOD

**Snap Personal Internet Communicator**  
Toucan Global

Innovative intercom is limited by its cord; your contacts need Snaps, too.  
List: \$99  
[www.toucanglobal.com](http://www.toucanglobal.com)



**THE ILLUMINATED JOG** wheel on SanDisk's Sansa Fuze is a nice design touch.

## Sansa Fuze Audio Player Shines

SANDISK'S SANSa Fuze resembles the iPod Nano, but this flash-based MP3 player packs in more functionality.

The Fuze makes a great first impression. At 2.0 inches wide by 3.1 inches tall by 0.3 inches deep, it fits nicely in your hand. I tested a sleek black 4GB model priced at \$100—about \$40 cheaper than the same-capacity Nano. (The Fuze is also available in 2GB and 8GB versions, for \$80 and \$130, respectively.)

The robust feature list includes support for subscription services such as eMusic,

Napster, and Rhapsody To Go. The player also comes with an FM tuner (with 40 presets), a voice recorder, and microSD expandability.

The Fuze performed very well in our audio-quality lab tests, delivering sound comparable to that of the Nano and the iPod Touch, two of the best-performing flash players we've tested.

Video playback is less impressive, though: The screen has a 220 by 176 resolution, and it isn't as crisp as the Nano's 2-inch, 320 by 240 display. In addition you must convert all video files to a

proprietary format using SanDisk's bundled software.

The Fuze is a worthy competitor to the Nano—and an even better choice if you're looking for a player with expandable memory, an FM tuner, and a lower price tag.

—Travis Hudson

**79**  
GOOD

**Sansa Fuze** SanDisk

Offers a low price, a deep feature list, and an ultracompact design.  
List: \$100  
[find.pcworld.com/60673](http://find.pcworld.com/60673)



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BEST  
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## Venturi Mini Sets Your Music Free

THE VENTURI MINI streams calls and music from your cell phone to your car audio system, as long as your mobile phone supports stereo Bluetooth and is compatible with the \$129 device.

In my tests the Mini performed well with Nokia's



THE VENTURI MINI broadcasts over an available FM frequency.

5300 XPressMusic phone—controls were responsive, and music stopped for incoming calls, resuming afterward.

Overall, the Mini is a solid device for streaming tunes and chatting hands-free, but you should check the phone-compatibility list first.

—Cathy Lu

**84**  
VERY GOOD

Mini | Venturi

It's a great device—if you have a compatible phone. Street: \$129  
[find.pcworld.com/60697](http://find.pcworld.com/60697)

## DOWNLOAD THIS LAURA BLACKWELL



## Three Freebies That Solve Mysteries

EVERYONE LOVES A good mystery—but neither your PC's inner workings nor your daily schedule should keep you guessing. This month, I checked out a Task Manager supplement, a click-saving Firefox extension, and a versatile calendar. All of them can be had for free.

### Safer System Spelunking

Windows' Task Manager is like a boring professor: very little information and too much jargon. In contrast, the free SystemExplorer is like Indiana Jones taking you on a field trip, guiding you through your PC's activities in dizzying breadth and exquisite detail.

SystemExplorer trounces Task Manager's paltry five info tabs with eight tabs under the heading of Monitoring and six more under System. Click any item on those lists, and SystemExplorer tells you the file path, the software responsible for the application or process, its publisher, and a description. SystemExplorer is free—but if you like it, PayPal a few bucks to the volunteer developers at Mister Group. Free/donationware, [find.pcworld.com/60611](http://find.pcworld.com/60611).

### What Lurks Behind That Link?

Whether they lead to files or to Web pages, links look the same. Click unwarily, and you could download a slew of unwanted PDFs—or worse. Link Alert, a free Firefox extension, lets you know what kind of file lies behind that link.

Link Alert, from an author known only as Conlan, installs directly into your Firefox browser. You may forget that it's there, at first; when you mouse over a typical Web page link, nothing happens. But when you mouse over a link that goes to any of the 12 supported file categories (which include Adobe PDF, JavaScript, Microsoft Word, and .zip), an icon appears: a musical note for audio files, a filmstrip for video, a gear for applications, and so forth.

Armed with Link Alert's information, you'll save yourself unnecessary clicks and keep your PC clean. Free, [find.pcworld.com/60612](http://find.pcworld.com/60612).

### Bring On the Rainlendar

Most full-featured desktop calendars are clunky space hogs, and many smaller ones lack useful capabilities. Rainlendar Lite strikes a balance,

offering plenty of ways to manage your schedule in a small, easy-to-use, and free package.

Rainlendar Lite has the essentials: alarms, prioritizing, easy scheduling of recurring events, and a search tool. But its main claim to fame is its customization features. You can choose components such as Events, To-Do, and a monthly calendar; arrange them to your liking; and then dress them up with selections from the hundreds of free skins from Rainlendar.net. (For example, I changed the skin for the mouse-over Tooltips to make them less obvious.)

Rainlendar Lite's basics are intuitive, but if you delve into the options menu, you can create



RAINLENDAR LITE LETS you choose and arrange calendar modules, and apply skins to them.

a calendar to fit the way you work—you'll never be surprised by a meeting or deadline again.

Developer Kimmo "Rainy" Pekkola offers Rainlendar Lite for free. The Pro version (15 euros, or about \$24) adds Google and Outlook calendar support and networked calendar sharing. Free (Lite), [find.pcworld.com/60613](http://find.pcworld.com/60613). ●





HP recommends Windows Vista® Business.

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POWER  
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IS PERSONAL  
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#### HP xw4550 Workstation

AMD Opteron™ processor Model 1212<sup>2,3</sup>  
Genuine Windows Vista® 32-bit;  
downgrade to Genuine Windows®  
XP Professional 32-bit installed\*<sup>1</sup>  
80 PLUS® Power Supply  
ENERGY STAR® qualified

**\$599** Was \$930  
Price reflects \$331  
instant savings<sup>1</sup>.

SmartBuy PN: RB422UT#ABA



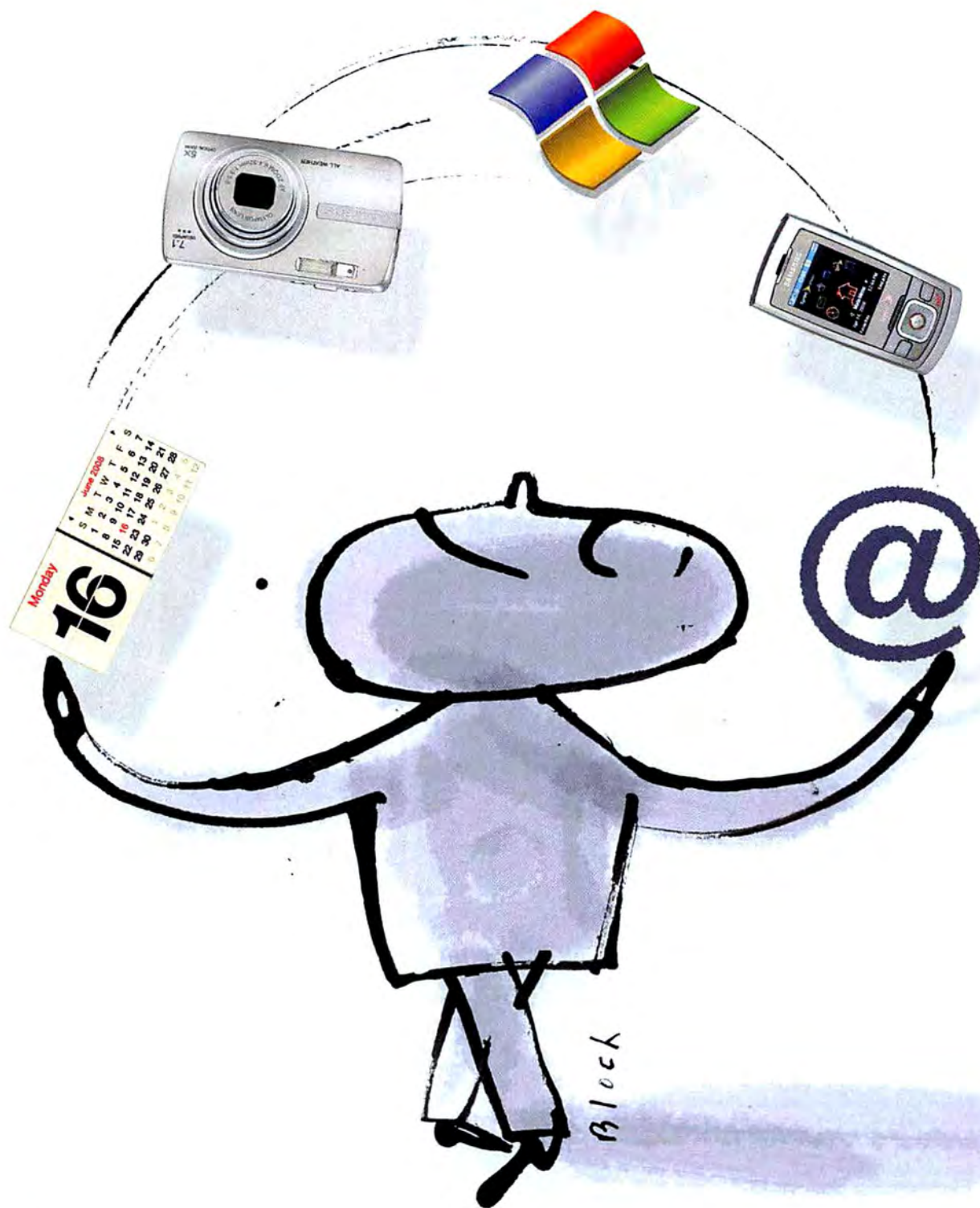
HP Total Care is service redefined to help you choose, use, protect, and recycle your technology.

Prices and promotions are subject to change without notice. Supply is limited. Visit our site or call for the latest deals. All offers available from HP Direct and participating resellers. Prices shown are HP Direct prices, are subject to change, and do not include applicable state and local sales tax or shipping to recipient's destination. Simulated screen. Photography may not accurately represent exact configurations priced. Associated values represent HP published list price. \*Windows Vista Business disk also included for future upgrade if desired. To qualify for this downgrade an end user must be a business (including governmental or educational institutions) and is expected to order annually at least 25 customer systems with the same custom image.†Certain Windows Vista product features require advanced or additional hardware. See [www.microsoft.com/windowsvista/getready/hardwarereq.mspx](http://www.microsoft.com/windowsvista/getready/hardwarereq.mspx) and [www.microsoft.com/windowsvista/getready/capable.mspx](http://www.microsoft.com/windowsvista/getready/capable.mspx) for details. Windows Vista Upgrade Advisor can help you determine which features of Windows Vista will run on your computer. To download the tool, visit [www.windowsvista.com/upgradadvisor](http://www.windowsvista.com/upgradadvisor). 1. Instant savings available through HP Direct and participating resellers. Offer valid through June 30, 2008. For details, visit [www.hp.com/go/specials](http://www.hp.com/go/specials). 2. This system requires a separately purchased 64-bit operating system and 64-bit software products to take advantage of the 64-bit processing capabilities of the AMD 64 processor. Given the wide range of software applications available, performance of a system including a 64-bit operating system will vary. 3. AMD's numbering is not a measurement of clock speed. © Copyright 2008 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein shall be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein. Microsoft and Windows are U.S. registered trademarks of Microsoft Corporation. Windows Vista is either a registered trademark or trademark of Microsoft Corporation in the United States and/or other countries. AMD, the AMD Arrow logo, AMD Opteron and combinations thereof are trademarks of Advanced Micro Devices, Inc. ENERGY STAR® is a registered mark owned by the U.S. government.





# How to Do





# Everything Faster »

22 smarter, more efficient ways to make short work of common tech tasks—from reinstalling Windows to crushing spyware to setting up a Web site.

BY LINCOLN SPECTOR • ILLUSTRATION BY SERGE BLOCH

TIME ISN'T MONEY; it's much more precious than that. Whether you're doing something creative like making a podcast or building a blog, or slogging through chores such as backing up data, removing viruses, or calibrating your high-def TV screen, you want to get things done and move on to the fun.

I have a ton of time-saving tips, including tricks to help you clear space on your hard drive, e-mail massive files, make money from your Web site, and even calculate the mileage on your jogging route.

The quickest way to tackle many tasks is to use applications that probably already exist on your PC. However, for occasions when Windows' built-in tools aren't enough, I've listed some great, free programs that are just a download away.

But enough of this dilly-dallying, already. Let's get on with the tips!



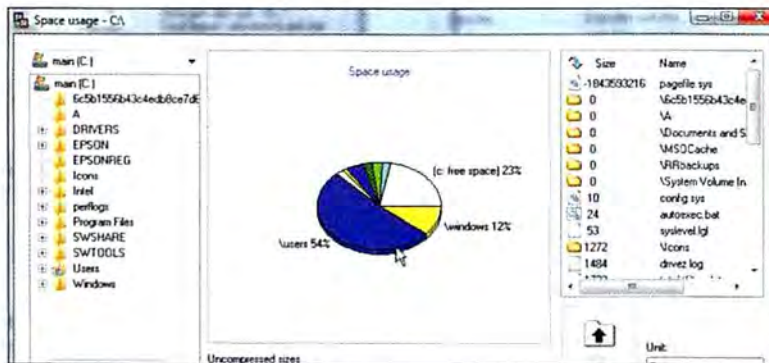
## Move Your Media Files to an External Drive

Hard drive filling up? Nothing frees space faster than moving your music library to an external or second internal drive. First, close any music-playing software. In XP, open My Documents and drag the My Music folder to the external drive. Windows will figure out that you're moving a special folder and will change its own settings accordingly. (If you don't use the My Music folder, just drag the folder you use to the drive. Windows doesn't have to treat it as a special folder because, well, it isn't.)

In Vista, click *Start*, right-click *Music*, and then select *Properties*. Click the *Location* tab. Change the path to a folder on your new hard drive and click *OK*. If Windows asks whether you want to create a new folder, click *Yes*. When Windows inquires whether you want to move all of the files, click *Yes* again.

If you use Windows Media Player, open it after the move and press <F3>. Select the new Music folder and let the application search for files.

**SHIFTING YOUR music to a secondary drive will open up lots of space on your main hard drive.**



## Back Up Your Data

Back in the March issue, I recommended using MozyHome as the easiest way to back up your PC's data ([find.pcworld.com/60647](http://find.pcworld.com/60647)). Easy, yes. But also horribly slow.

For fast backups, invest in an external hard drive whose capacity is slightly larger than your internal hard drive's. If your PC has an eSATA port, buy an eSATA drive to take advantage of its fast data-transfer speeds. Otherwise, USB or FireWire will do.

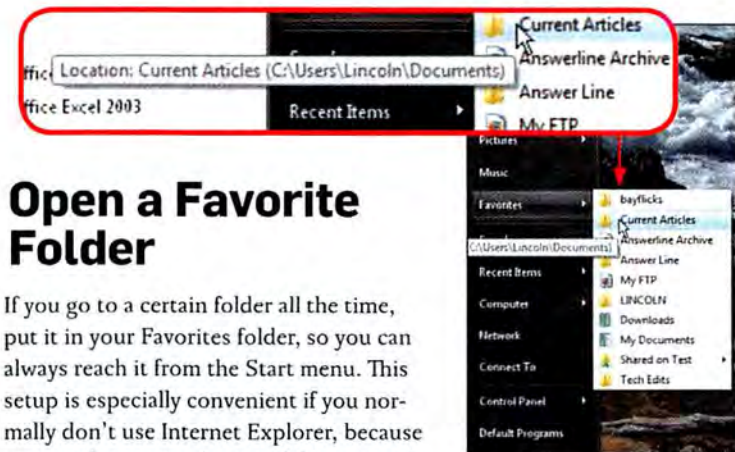
For a quick, one-time data backup, plug in the external drive. When it's up and Windows recognizes it, press <Windows>-R, type %userprofile%, and press <Enter>. Drag the Documents (or My Documents) folder to the external drive. If you have Vista, you should also drag the Music, Pictures, Saved Games, and Videos folders (XP users don't have to worry about those because they're inside Documents). If you don't store your data within the Microsoft-sanctioned folders, you'll need to drag any other folders you use to the external drive as well.

Want automation? Select an external drive that comes with a backup program (most do), and use that.

## Reinstall Windows

So your PC is acting wonky and you need to re-install Windows. Starting from scratch can take hours. The faster solution is to back up your data (as described in the item above) and then use the recovery tool that accompanied your PC. The tool usually comes either as a bundled CD or DVD or as a hidden partition that you can access at boot time. Consult your computer's documentation to see which setup applies.

Recovery tools usually work by overwriting the data on your hard drive with a fresh image of the factory-default software. Windows will be back up and running quickly, but it won't have the programs you installed on it, or your settings. Restore your personal files from the backup you made before starting this process, and then reinstall any applications you need.



## Open a Favorite Folder

If you go to a certain folder all the time, put it in your Favorites folder, so you can always reach it from the Start menu. This setup is especially convenient if you normally don't use Internet Explorer, because you won't see your favorite folders mixed up with your favorite Web sites.

To place it in Favorites, drag the beloved folder from Windows Explorer to the Start button, and from there to the Favorites menu. In Windows XP, you also have the option of opening the folder and then clicking *Favorites*•*Add to Favorites* from inside the Explorer window.

**QUICKLY GET TO folders that you use all the time by putting them in your Favorites folder.**



## E-Mail Huge Files

E-mailing a hilarious video to friends may not endear you to them if it arrives as a 6MB file. After all, if they use a POP-based e-mail program such as Outlook, they'll have to download the entire message before they can even see that it's from you—or before they can download the next message in the queue. If any of the recipients are on a slow connection, they may never speak to you again.

My rule of thumb: Never e-mail more than 1MB of content without the express permission of the recipient. As an alternative, try YouSendIt ([www.yousendit.com](http://www.yousendit.com)), a brain-dead-simple take on the FTP transfer. The service is free for any file under 100MB, and individual files can be downloaded up to 100 times. You don't even have to sign up and enter a password (though the service offers additional features if you do, and even more if you pay). Just enter both e-mail addresses, point to the file, and click the *Send It* button.

**YOU CAN MOVE big files to a colleague without the hassle of an FTP transfer, by using YouSendIt.**

The screenshot shows the YouSendIt website. At the top is the logo and navigation links: Sign Up, Start Your Free Trial, Testimonials, and Partners. The main heading is "Send a file now". Below it is a form with fields for "To:" (with a note "Separate multiple emails by comma"), "From:", "Subject (optional)", and "Enter message (optional)". There is a checkbox for "Remember my email". Below the message field is a "Select a file (Max Size 100 MB) Larger file?" section with a "Browse..." button and a link to "Add another file". At the bottom are four checkboxes: "Premium Delivery [+]", "Password-Protected Secure Delivery [+]", "Certified Delivery with Tracking [+]", and "Return Receipt [+]".

## Create a Bootable Rescue Disc

How can you reach your precious data files when Windows refuses to boot? Use a friend's PC to download Puppy Linux from [find.pcworld.com/60656](http://find.pcworld.com/60656). It comes as an .iso CD-image file that you can use to burn a bootable CD. (And if your PC hasn't yet bitten the dust, it's good to make a rescue disc before it does.)

Chances are you or your friend will already have software on the working PC that can burn Puppy Linux to a CD. Double-click the file, and the software (possibly Nero, or Roxio's Easy Media Creator) should launch. If Windows informs you that it doesn't know what to do with an .iso file, you should download and install a free burner such as ISO Recorder ([find.pcworld.com/60657](http://find.pcworld.com/60657)).

This Puppy isn't the most powerful version of Linux by a long shot, but it handles NTFS drives well and is easy for Windows users to figure out. Once you have used the bootable CD to access your problematic machine, you can copy files from the hard drive to an external drive, or even edit .doc and .xls files.

## Build a Web Site

No matter how much time you spend online, you can't consider yourself a true Netizen until you have your own Web site. And these days, it's hard to beat a blog for quick and easy updating of your content and for versatile design.

If you prefer simplicity but don't want to compromise on class, go with a free blogging service such as Blogger.com or WordPress.com. With either service, you fill out a form and select a template that controls the look of your blog—and off you go.

**ONE OF THE quickest ways to put together a Web site is to use the free tools at WordPress.com.**

One more nicety: You can post entries that you've composed in Word 2007 directly to your Blogger or WordPress blog. Just click the *Office* button and select *Publish+Blog*. >>>

The screenshot shows the WordPress.com website. At the top is the WordPress logo and the text "WORDPRESS.COM". Navigation links include "Sign Up", "Features", "Support", "Story", and "Advanced". A "Preferred Language" dropdown is set to "English". The main heading is "Theme Examples". Below it is a link "« Back to features list". The text says: "There are far too many themes available on WordPress.com to show, but here is a sampling of a few of the more popular ones." Below this text are three examples of different WordPress themes: "Contempt", "3LIX", and "Binary Media Blog".



## Keep Tabs on the News

It's an election year; do you know where your favorite candidate is? Following are just a few simple ways to take control of the information onslaught.

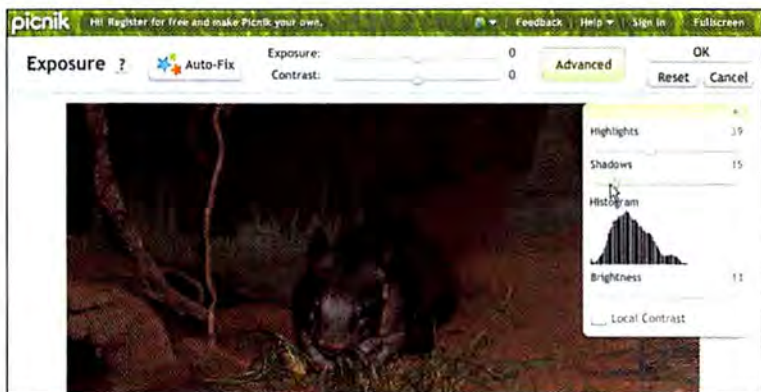


**GOOGLE READER PRESENTS** a never-ending river of RSS news items.

You probably already know that RSS news feeds offer a convenient way to get all the news you want delivered straight to your PC. You can make RSS feeds even more efficient. If you prefer reading in a browser, I recommend Google Reader ([www.google.com/reader](http://www.google.com/reader)), which lets you surf through the headlines.

A number of free services can send you RSS feeds over e-mail. My favorite is SendMeRSS.com, which is so easy that you don't even have to register with the site, although doing so will make adding feeds simpler. Just enter the URL for the RSS feed you want, type in your e-mail address, and click *Feed*. From then on, new items will automatically appear in your inbox.

RSS feeds are great for tracking what the *New York Times* is writing about, but Google Alerts keeps tabs on a particular subject across a huge range of publications. Go to [www.google.com/news](http://www.google.com/news), enter a search item, and bring up the current stories. Then scroll to the bottom of the page and click the link within the sentence 'Get the latest news on your search criteria with Google Alerts.' Just one piece of advice: Use Google Alerts for specific subjects, not broad (or extremely popular) ones. Set up a search for "Paris Hilton," and the resulting deluge will overwhelm you.



## Correct a Photo's Exposure

**THE PHOTO EDITING** site  
Picnik.com has sophisticated but easy-to-use tools.

Let's say that you have a photo with severe brightness and contrast problems. If you're in a hurry and you haven't been trained in the art of photo manipulation, you need a program with separate sliders for adjusting the highlights and shadows. The concept is easy to grasp, and it gets the job done.

Where can you find such tools? If you use Photoshop Elements, you already have them, on the Quick tab (Quick Fix in version 5), under Lighting.

Alternatively, you have two free options. Microsoft's Windows Live Photo Gallery app ([find.pcworld.com/60653](http://find.pcworld.com/60653)) improves on Vista's Photo Gallery program. Select *Fix > Adjust Exposure* in Windows Live Photo Gallery (which runs in both Vista and XP), and you'll get both Highlights and Shadows sliders and a histogram, as well as the familiar old Brightness and Contrast options.

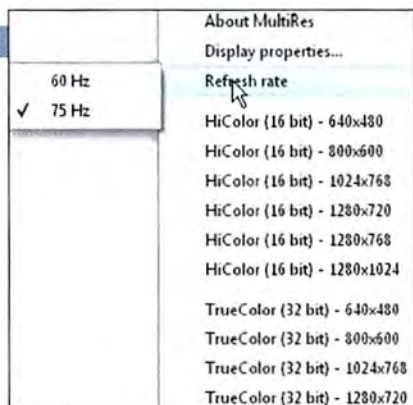
If you'd rather not install any software, try the free photo-editing site Picnik ([www.picnik.com](http://www.picnik.com)). Click the *Upload Photo* button. Then click *Exposure > Advanced* to access the Highlights and Shadows sliders, plus a histogram. When you're done making adjustments, you can save the image back to your PC.

## Change Your Monitor's Resolution

As a general rule, you should keep your monitor adjusted to its highest resolution. There are exceptions, however. Some programs, especially games, run better with fewer pixels displayed. And if your laptop becomes confused (as mine

does) when you plug it into an external monitor, you may find yourself having to revisit the Settings tab of Windows' Display Properties box annoyingly often.

That's why I recommend MultiRes ([find.pcworld.com/60650](http://find.pcworld.com/60650)). This simple, free utility creates a system tray icon from which you can select any available resolution, screen depth, and refresh rate for your display.



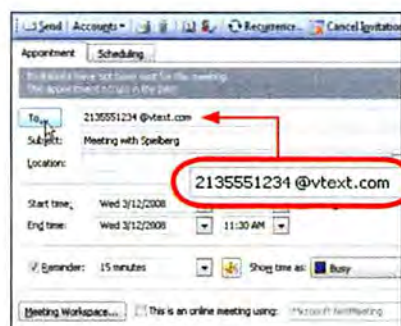
**AFTER INSTALLING** the MultiRes utility, you can quickly change your monitor's resolution.



## Copy Your Events Calendar to Your Not-So-Smart Phone

Even if your cell phone doesn't qualify as "smart" by today's standards, you can use it to track your busy schedule. From Outlook or Google Calendar, you can send appointment reminders to your cell phone as text messages.

When creating an appointment in Outlook, click the *Invite Attendees* button (*Forward* in Office 2007). In the To field, enter your phone's e-mail address, such as 2135551234@vtext.com (the @ portion of the address, of course, will vary from carrier to carrier).



**HAVE A DUMB phone? Clue it in by "inviting" it to meetings in Outlook. Afterward your calendar will send your phone SMS reminders of your upcoming events.**

Alternatively, Outlook 2007 users can work with SMS Link for Microsoft Office Outlook 2007 ([find.pcworld.com/60651](http://find.pcworld.com/60651)), which permits them to send appointments, contacts, and tasks to their cell phone as text messages.

Google Calendar directly supports SMS, so you don't have to pretend that your phone is an e-mail account. To set the feature up, just click *Settings*•*Mobile Setup* and follow the instructions.

When you're in the process of setting up an appointment, select SMS as your reminder. You can arrange to have more than one reminder scheduled, and you can set them to alert you up to a week ahead of the actual appointment time.

## Reveal the unexpected.

Scan your computer now online and clean it for free!

Your computer can be free of malware in just a few clicks.



With the help of our online scanner you can scan and clean your computer from malware without having to install additional software on your computer.

When a dialog box appears asking you if you would like to download and install the ewido anti-spyware online scanner please click "Yes" to allow the download.

Scanning Registry: ...x86\_microsoft-windows-timeout\_31bf3856ad364e35\_none\_7c

Name	Path	Risk

## Scan for Malware With Online Tools

The best way to keep your PC free from viruses and spyware is to run a good antivirus application and keep it updated. But if you've been bad and left your computer exposed to the depredations of the malevolent, you can quickly find and eliminate skulking intruders either by running a portable security program—one that doesn't have to be installed onto your system—or by using a Web-based scanner.

Conveniently, Ewido Networks (now part of Grisoft, which produces the AVG antivirus utility) provides excellent tools in each category—and both of them are free. You'll find the online scanner (which works only with Internet Explorer) at [www.ewido.net/en/onlinecan](http://www.ewido.net/en/onlinecan). The free stand-alone program is available for downloading at [find.pcworld.com/60645](http://find.pcworld.com/60645). Both versions update their definitions when you use them. Other good options are ClamWin Portable ([find.pcworld.com/60646](http://find.pcworld.com/60646)) and Kaspersky Lab's Web scanner ([www.kaspersky.com/virusscanner](http://www.kaspersky.com/virusscanner)).

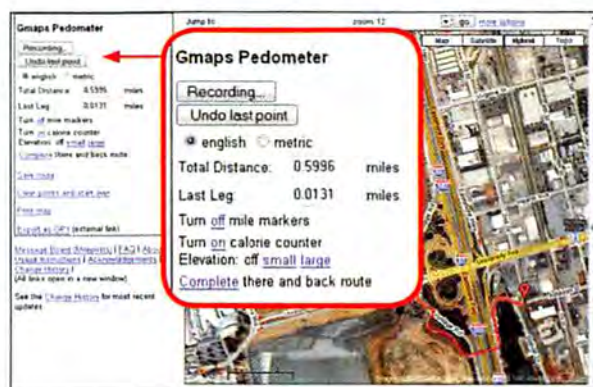
**PROTECT AGAINST malware without installing new software, with Ewido's online scanner.**

## Find the Mileage of Your Hiking/Jogging/Biking Route

It's easy to figure out the mileage for a car trip: Just go to Google Maps or MapQuest and ask for directions. But those services ignore footpaths and bike paths, and they won't direct you to go against traffic on a one-way street, though such routes are perfectly fine for pedestrians. And let's face it, getting the exact mileage is important when you're moving under your own muscle power.

That's where the Gmaps Pedometer comes in. This Google Maps mashup allows you to trace your route and get mileage figures. To use it, go to [gmap-pedometer.com](http://gmap-pedometer.com) and zoom in on your location. Since Google's map view doesn't show paths, click the *Hybrid* button to combine the map with a satellite photo. Click *Start Recording*, and double-click on the starting point of your journey. Then double-click

on points along the route as you watch the distance, which is displayed on the left, grow. »



**MEASURE YOUR peregrinations with Gmaps Pedometer, which calculates the length of trails.**



## Create a Podcast

Movie critics sometimes pan a performance by saying that the actor just "phoned it in." But if you are audio-podcasting with Garageband's Gcast ([www.gcast.com](http://www.gcast.com)), phoning it in is actually all you have to do.

To get started, sign up for a Gcast account with a password and a four-digit PIN. Once the site assigns you a URL, recording a podcast is no more difficult than leaving a message on a friend's voice mail. You simply dial the toll-free number, enter



**GCAST.COM ALLOWS YOU to record a podcast through your cell phone.**

your PIN (Gcast recognizes your account via caller ID), wait for the beep, and then start speaking.

Afterward, you can go to your Gcast site and edit the podcast's properties to make it easy for people to find.



## Burn a Playlist CD

**IF YOU WANT to take your favorite music with you on the road, put together a playlist in iTunes and then burn it to a CD.**

Having your entire music collection loaded on your iPod won't do you much good on a long trip if your car lacks an iPod adapter. To take your favorite playlists with you on the road, burn them to multiple audio CDs automatically.

In iTunes, select a playlist and then click the Shuffle icon in the lower-left corner (when you shuffle the list, the icon turns blue). Select **File • Burn Playlist to Disc**. When the CD drive slides out, put in a blank disc and close the tray.

A dialog box will pop up to warn you that the job requires more than one CD. Click **Audio CDs** and don't worry about the warning. When the first disc's burn is finished and the CD drive opens, remove the disc, put in a new one, and just go about your business. iTunes will figure everything out.

In Windows Media Player, you can click the **Library** tab and select your playlist, or you can click **Songs** for a truly random set of music files taken from the entire collection. Start playing the top song on the list. Click the **Burn** tab and then select the first option on the Burn menu, which will be either *Now Playing* or the playlist's name. When the dialog box asks for a blank disc, click **Cancel**.

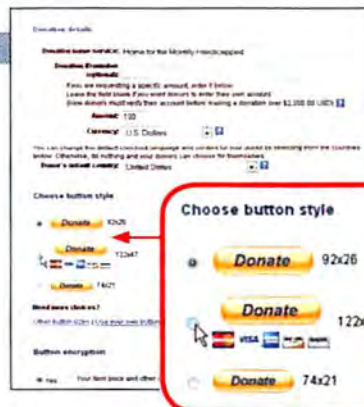
All of the songs included in the playlist will now appear in the right pane, below a Burn List drop-down menu, from which you should select **Shuffle List Now**. The action will not only shuffle the songs but also divide them across multiple discs. Click the **Start Burn** button as soon as it ceases to be grayed out. The burn will start automatically in a few seconds. If you're spanning multiple discs, just stop by and swap in a new blank CD whenever the previous one is full.

## Add Online Payments to Your Web Site

When it comes to attracting people to your site and persuading them to give you their hard-earned cash, you're on your own. But once you've taken care of those preliminary details, here's how you can ensure that the money has a safe journey into your pocket.

If you have a service people might pay for or a charity they might donate money to, go with PayPal. You'll need a Premier or Business account; to upgrade an existing Personal account, go to [find.pcworld.com/60652](http://find.pcworld.com/60652). After logging in, click the **Merchant Services** tab for options.

Of course, you don't have to sell anything to make money online. Google AdSense ([www.google.com/adsense](http://www.google.com/adsense)) will put advertising on your site in minutes. To participate in the AdSense program, you'll need a Google account, but it's easy to set up. When you're done, the site gives you a snippet of code to insert into your pages. Just don't expect much: Depending on your traffic, it may take months or even years for your earnings to reach \$100.



**TO ACCEPT PAYMENTS for products or for a charity featured on your Web site, your best bet is to use PayPal.**





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## Share Photos With Family and Friends

When you get back from your summer vacation, you may be tempted to send a huge batch of your favorite photographs as e-mail attachments, but dispatching a 20MB e-mail message to all of your contacts is both clumsy and annoying. Instead, upload the pictures to an album on a photo-sharing site and invite your relatives and friends to view your shots at their leisure.

The trick is to upload your pictures

directly from the local application that you'll be using to organize your photos, whether the particular program is Windows Live Photo Gallery, Picasa, or something else.

In Photo Gallery, select the photos you plan to share, either with tags or by clicking them while holding down the <Ctrl> key. Once they're selected, click **Publish•More services•Publish on Flickr...**

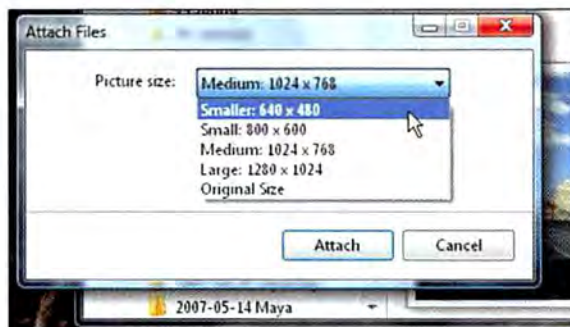
You will need a Flickr or Yahoo log-in name. The uploading process is exceedingly simple. Afterward, you can log on to Flickr and tell your contacts that the photos are ready for viewing.

In Picasa2, select the photos in question and click the **Web Album** button. If the various files are not already collect-

ed in the same album or folder, you'll find that it's easier to create an album in Picasa2, put the images there, and then create the Web Album.

After signing in (you'll need a Google account for this), complete the resulting form and start the upload. When that's finished, click **View Online**. If you are happy with the result, click the **Share Album** button to e-mail anyone the link.

Most good photo applications include a similar feature, so take advantage of yours to simplify the process of sharing memories with your loved ones.



**IN WINDOWS EXPLORER** you can quickly change your photos' dimensions to a size that makes them easy to e-mail.

## Identify a Hoax E-Mail Message

We've all received forwarded e-mail messages from relatives and friends. Some of these missives warn of devastating viruses that require immediate attention; others alert us to predators lurking in shopping-mall parking lots. Many are obvious hoaxes. But if you're not sure, here are some telltale signs that a newly received message is bogus.

**The hoax:** *If you have a file with a particular name, you're infected.*

**The truth:** Real malware changes its name from infection to infection, or replaces an existing file. The file named in the e-mail alert is more likely a standard part of Windows, and removing it will probably mess up your PC.

**The hoax:** *The virus will wipe your hard drive—or do some other horrible thing—if you don't remove it.*

**The truth:** Malware no longer behaves that way. Bad guys find it much more profitable to steal a victim's passwords and credit card numbers, quietly.

**The hoax:** *This virus is so cleverly crafted that McAfee and Norton software can't identify or remove it.*

**The truth:** If that were really the case, you wouldn't be able to identify and remove it simply by deleting one file, as these messages often advise.

## Add Titles to Your Home Movie

If you've just shot some video with your camcorder, you can add titles to it in a few minutes with Windows Movie Maker, which comes with every version of Windows.

To get started, import your video and enter Timeline mode. In the timeline at the bottom of the window, select the clip that you want to superimpose the title over (in most instances this will be the first clip). In the left pane, under Edit Movie (just Edit in Vista), click **Make titles or credits** (just **Titles and credits** in Vista).

Click **Add title on the selected clip in the timeline** (just **Title on the selected clip** in Vista). Type in your title text, and watch it appear in the view screen (which may be displaying a black screen instead of your video at this point).

If you don't like the way the title looks, use the links located below the text field to change the animation or font. I recommend the Fade, Slow Zoom animation.

Last, click **Done•Add Title to movie** in XP (or just **Add Title** in Vista). Then play the video and see if you like it.

If you're unhappy with the result, double-click the title in the timeline's Title Overlay band to change it. ➤➤

**MOVIE MAKER COMES** on any Windows machine and makes fast work of adding titles to your videos.

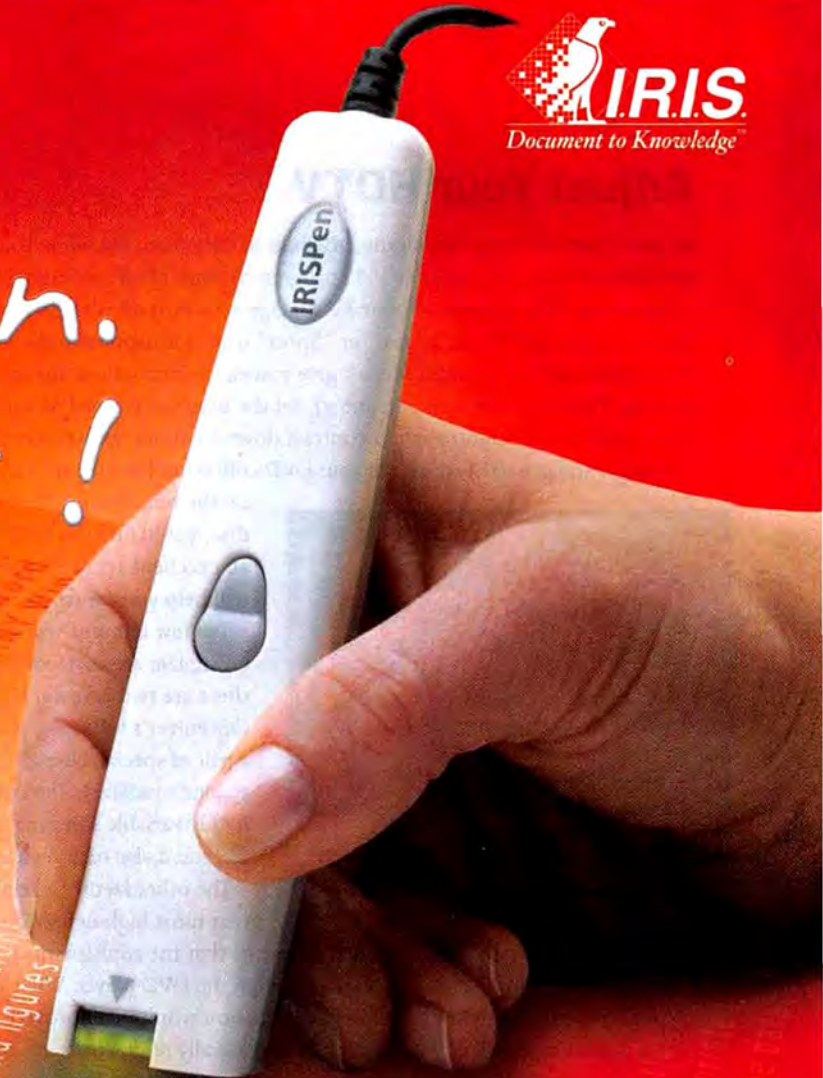




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## Adjust Your HDTV

So you spent a fortune for your high-definition television, but when you sit down to watch something, all you get is 1080 progressive lines of off-color junk? Let's fix that.

The fastest way to improve your TV's image is to turn off whatever fancy dynamic mode (sometimes called "Movie" or "Sport" mode) it happens to be in. Using your TV's image-adjusting menus (I can't give you exact instructions for navigating them because TV menus differ considerably), set the mode to Normal or something similar. Then turn the brightness and contrast down to about the halfway point.

If you're still not satisfied, search your DVD collection for a movie with a THX logo

on the box. Among the extras on the disc, you'll find the THX Optimizer, an excellent set of test patterns that will help you adjust your TV.

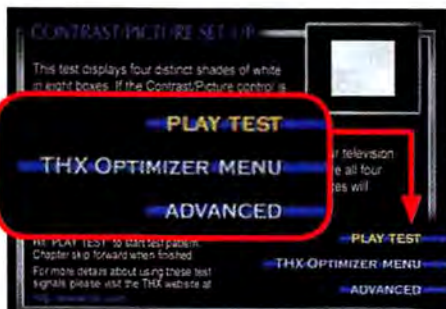
The few minutes you spend with the Optimizer are well worth the time, but there are two caveats. First, to get the Optimizer's full value, you must order a pair of special, blue glasses from [find.pcworld.com/60654](http://find.pcworld.com/60654). The cost is \$2 plus a highly variable shipping and handling fee, and it also requires a few days' wait.

The other factor to keep in mind is that most high-definition TV video

settings are specific to the inputs, which means that the adjustments you make with a DVD will affect only what you watch through the DVD player. What you watch through your DVR or over your direct connection won't be improved.

You can jot down all of your settings and manually re-create them, but that's a hassle, and the right settings for composite video may not be appropriate for HDMI.

If you receive HDNet through your cable or satellite company, you have another option: The station broadcasts 10 minutes of test patterns every Saturday at 6:30 a.m. Eastern Time (3:30 Pacific). That's a harsh time to wake up, but if you have an HD DVR, it isn't a problem. For more fine-tuning tips, see [find.pcworld.com/60655](http://find.pcworld.com/60655).



ANY DVD IN your library with the THX logo will include tools to help you optimize your HDTV.

## Take Linux for a Test Drive

Trying out a new operating system can be intimidating. But you can give Linux a whirl quickly and painlessly.

The latest version of Ubuntu, Hardy Heron 8.04 ([www.ubuntu.com](http://www.ubuntu.com)), comes with easy installation options. The fastest method is to burn the OS to a CD and then reboot the PC from that disc. Ubuntu will start up in Live CD mode, which lets you work with most of its features without installing it.

A better choice is to insert the CD while Windows is running and use the Wubi installer (it should run automatically). Wubi lets you install Ubuntu just as you would any other Windows program. When you reboot the PC, the Windows Boot Manager will give you the choice of running Windows or Ubuntu. You can use all of Ubuntu's features—including the 3D desktop effects that Linux users are bragging about. If you decide you like it, don't change a thing. If not, reboot in Windows and run the Wubi uninstaller from the Add/Remove Programs control panel. (For more on Hardy Heron 8.04, see "New Ubuntu Version Is Better Under the Hood," page 26.)

## Publish Home Movies

Windows Movie Maker comes equipped with a "Send in e-mail" option. But you shouldn't even think about clicking it unless you don't mind angering your friends. Why not make everyone happy instead by using YouTube to share your home videos? The site accepts a wide range of video file formats, including .wmv, .avi, .mov, and .mpg, and handles the format and resolution changes itself.

From Windows Movie Maker, you have to output the video in a YouTube-friendly format before you can upload it. Click *Save to my computer* under "Finish Movie" in XP, or click *This computer* under "Publish to" in

Vista. Follow the resulting wizard, saving the file to a convenient location, and selecting *Best quality for playback on my computer*. In response, Movie Maker will output a .wmv file that YouTube can accept.

You must be a YouTube member to upload files, but signing up for a membership is free. Once you're in, click the yellow *Upload* button and follow the prompts.

Wait a few minutes after the movie has finished uploading; then click *My Videos*, se-

**THE QUICKEST way to share your home movies with friends is to post them on YouTube.**



lect the video, and watch it. (If the video is not there yet, wait a bit longer.)

You can click the *Share* icon to tell your friends about it, or you can copy the URL and paste it into an e-mail. And if you'd rather not share your movie with the world, set Broadcast Options to *Private* and name the contacts you want to share it with. ●



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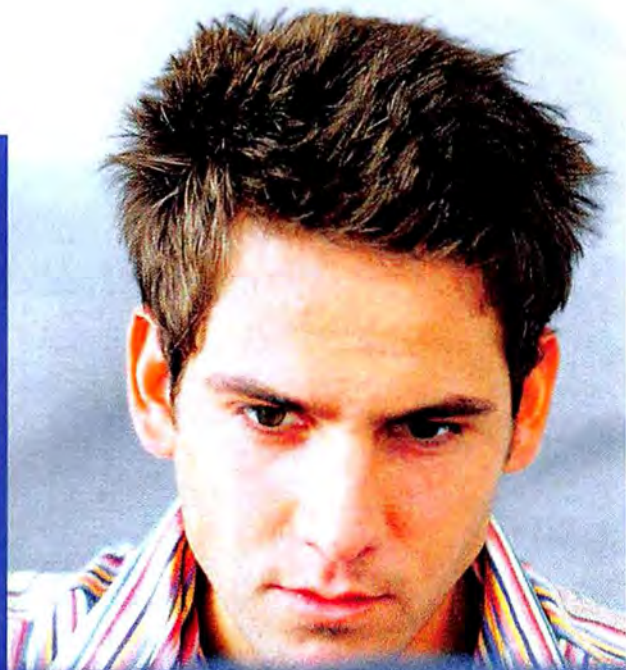
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Monthly Transfer Volume	1,200 GB	1,500 GB	250 GB
E-mail Accounts	1,200 IMAP or POP3	500 POP3	250 POP3
Mailbox Size	2000 MB	500 MB	75 MB
Website Builder	12 Pages	Additional \$8.09/month	✓
Access to Open Source Application Library	✓	✓	—
Starter Software Suite	✓	—	—
Search Engine Submission	✓	—	—
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# Winning Wi-Fi Yet

The best new 802.11n wireless routers deliver strong performance, coverage, and compatibility. Our lab tests reveal the top choices, whether you're looking for a basic bargain or have an insatiable need for speed and range.

BY BECKY WARING • TESTING BY ELLIOTT KIRSCHLING  
ILLUSTRATION BY MICK WIGGINS

## PCW Test Center

**WHAT A DIFFERENCE** a few years makes. In our first roundup of draft-802.11n Wi-Fi routers (see [find.pcworld.com/60641](http://find.pcworld.com/60641)), we found buggy firmware, hit-and-miss interoperability, and performance falling short of what some enhanced, earlier-generation 802.11g routers offered.

As of this year, we're happy to report, those issues have largely gone away. Although the final ratification of 802.11n by the IEEE isn't expected until next year, the Wi-Fi Alliance has been certifying draft-2.0 n routers for interoperability and compatibility since last year, and the final version should

largely be a formality that at most may require a firmware upgrade.

The Wi-Fi-certified products are worthy updates, too. With link rates—the nominal connection speeds, as opposed to real-world throughput—of up to 300 megabits per second (compared with 54 mbps for standard 802.11g) and extended range, 802.11n is the first Wi-Fi that can rival wired 100-mbps ethernet in performance.

But choosing a particular 802.11n router has become more complicated than ever, both because the standard covers so much ground and because features vary widely. Vendors have

issued literally dozens of models ranging in price from \$50 to \$250. D-Link alone has six 802.11n routers.

To give an idea of the options, we chose two widely available models in each of three categories: under-\$90 routers for people who don't need maximum performance; midrange (about \$150) models that offer top wireless speeds and gigabit ethernet; and dual-band routers (\$180 to \$200) that support both the crowded 2.4-GHz frequency range (used by all of the less-expensive models and their 802.11b/g predecessors) and the relatively open 5-GHz band, with support for legacy 802.11a gear. These top-of-the-line units target users preparing for an expected influx of networked multimedia devices that need uncluttered bandwidth to stream media. (The 802.11n spec supports both frequencies.)

## Deconstructing the Technology

The 802.11n variant of Wi-Fi achieves its high throughput (typically four times that of 802.11g) in two ways. First, it uses MIMO (multiple input, multiple output) antenna technology to transmit more data at a time. Intelligent antennas combine streams of data arriving at different times from multipath signals bouncing off walls, floors, and ceilings. Entry-level routers typically >>



have two receiving and transmitting antennas; midrange and high-end models have three of each.

Second, draft-n uses channel bonding: Instead of the 20-MHz-wide channels found in previous Wi-Fi standards, 802.11n can use 40-MHz-wide channels, which in theory should double their data-carrying capacity.

Unfortunately, the limited bandwidth of the 2.4-GHz range means that just one 802.11n router using channel bonding will take up virtually the entire 2.4-GHz spectrum, leaving no room for neighboring routers, and causing severe interference. For this reason, draft-2.0's so-called good-neighbor policies require that routers ship in 20-MHz mode, and that, when in 40-MHz mode, they drop to 20-MHz operation if they sense

nearby Wi-Fi networks or other 2.4-GHz devices. The top link rate in 20-MHz mode is only 150 mbps. Since many users are likely to be within range of other 2.4-GHz traffic, we ran our 2.4-GHz tests with 20-MHz channels.

### More Bandwidth, Less Range

The 5-GHz frequency range, however, has much more bandwidth to play with and can support multiple 40-MHz channels. It's also relatively unused (802.11a products appeared primarily in business environments), so interference is generally minimal to none. We therefore used 40-MHz channels in our 5-GHz testing of the two routers that support 5-GHz operations.

Interestingly, speeds in our 5-GHz testing at close range did not double;

on average, they rose about 20 percent. But they were generally more consistent than the 2.4-GHz results, and throughput at close range never dropped below 40 mbps—well above the 25 mbps needed for top-quality HDTV streaming.

The downside to 5-GHz is that its higher frequency doesn't let it cover as large an area as 2.4-GHz draft-n. But generally its range is still far better than that of standard unenhanced 802.11g.

Another 5-GHz plus: While draft-n is backward-compatible with 802.11b and g devices in "mixed" 2.4-GHz mode, performance for n clients drops significantly on networks when b or g clients are present. But with a dual-band router, you can put newer draft-n gear that supports 5 GHz on the fast track while

## WI-FI DRAFT-2.0 802.11N ROUTERS: Good, Better, and

Linksys routers scored well in our high-end and midrange matchups, but competitors performed respectably. At the low end, Belkin

	WIRELESS ROUTER AND ADAPTER USED FOR TESTS	PCW Rating	Features score and radio bands	Radio modes	Encryption modes	Number of antennas (transmit x receive)
Dual-band routers	Linksys Dual-Band Wireless-N Gigabit Router with Storage Link WRT600N <b>\$200</b> <a href="http://find.pcworld.com/60703">find.pcworld.com/60703</a> Linksys WUSB600N USB Adapter <b>\$90</b>	<b>91</b> SUPERIOR	Superior Dual-band simultaneous 2.4 GHz and 5 GHz	2.4 GHz: b, g, n, b/g/n 5 GHz: a, n, a/n	WEP, WPA, WPA2, WPA+WPA2, WPA & WPA2 Enterprise	Router: 3x3 Adapter: 2x2
	Apple AirPort Extreme Base Station with Gigabit Ethernet <b>\$179</b> <a href="http://find.pcworld.com/60704">find.pcworld.com/60704</a> Linksys WUSB600N USB Adapter <b>\$90</b>	<b>84</b> VERY GOOD	Very Good Dual-band, either 2.4 GHz or 5 GHz	2.4 GHz: n, b/g/n 5 GHz: n, a/n	WEP, WPA, WPA2, WPA+WPA2, WPA & WPA2 Enterprise	Router: 3x3 Adapter: 2x2
Midrange routers	Linksys Wireless-N Gigabit Router WRT310N <b>\$140</b> <a href="http://find.pcworld.com/60705">find.pcworld.com/60705</a> Linksys WUSB600N USB Adapter <b>\$90</b>	<b>83</b> VERY GOOD	Good Single-band 2.4 GHz	2.4 GHz: b, g, n, b/g, b/g/n 5 GHz: none	WEP, WPA, WPA2, WPA+WPA2, WPA & WPA2 Enterprise	Router: 3x3 Adapter: 2x2
	Netgear RangeMax Next Wireless-N Gigabit Router WNR3500 <b>\$160</b> <a href="http://find.pcworld.com/60706">find.pcworld.com/60706</a> Netgear WN111 USB Adapter <b>\$100</b>	<b>70</b> GOOD	Fair Single-band 2.4 GHz	2.4 GHz: n, b/g, b/g/n 5 GHz: none	WEP, WPA, WPA2, WPA+WPA2	Router: 2x3 Adapter: 2x2
Low-end routers	Belkin N Wireless Router F5D8233-4 v3 <b>\$90</b> <a href="http://find.pcworld.com/60707">find.pcworld.com/60707</a> Belkin F5D8053 USB Adapter <b>\$80</b>	<b>73</b> GOOD	Fair Single-band 2.4 GHz	2.4 GHz: g, n, b/g/n 5 GHz: none	WEP, WPA, WPA2, WPA+WPA2	Router: 2x2 Adapter: 1x2
	D-Link Wireless N Router DIR-615 vB2 <b>\$80</b> <a href="http://find.pcworld.com/60708">find.pcworld.com/60708</a> D-Link DWA-130 USB Adapter <b>\$100</b>	<b>61</b> FAIR	Good Single-band 2.4 GHz	2.4 GHz: b, g, n, b/g, g/n, b/g/n 5 GHz: none	WEP, WPA, WPA2, WPA+WPA2, WPA & WPA2 Enterprise	Router: 2x2 Adapter: 2x2

CHART NOTES: Prices and rankings are as of 4/21/08. For details on how we tested, see [find.pcworld.com/60712](http://find.pcworld.com/60712). mbps = megabits per second. FOOTNOTE: ' Apple does not make a USB adapter.





**BARE-BONES N ROUTING:** D-Link's \$80 Wireless N Router DIR-615 (left) and Belkin's \$90 N Wireless Router both have only two transmitting and receiving antennas, making them slower than pricier models.

maintaining a slower 2.4-GHz network for older equipment. We recommend a dual-band router if you need maximum performance for streaming media or networked storage—or if you can't get a good Wi-Fi signal at all due to interference from neighbors' networks.

## Draft-N on a Budget

Want to have some of draft-n's superior speed and coverage without paying top dollar? We tried two entry-level draft-2.0-certified routers priced at \$90 or less: the Belkin N Wireless Router (\$90) and the D-Link Wireless N Router DIR-615 (\$80). Both have 100-mbps (not gigabit) ethernet ports and two-antenna configurations with less speed and

range than their three-eared cousins. While not optimal for streaming media, they should be fine for normal Internet use, VoIP calls, and the odd file transfer in a small or medium-size house.

Of the two, the Belkin was generally superior. The D-Link has a few features the Belkin lacks, but it stumbled badly in our performance tests.

### Belkin N Wireless Router

When we first reviewed the Belkin N router in 2006, we loved everything about it—aside from its performance. But many manufacturing revisions and firmware updates have fixed the problem. In fact, even with one fewer antenna, the Belkin did almost as well as the midrange Netgear router in our tests.

The unit's design, usability, features, and customer service remain stellar. The out-of-the-box experience is second to none, from numbered cables and a step-by-step install wizard (which connected perfectly) to a great user manual. The Belkin has a lifetime warranty; the others we tested have one-year warranties.

The Belkin supports many key router features, including UPnP, WMM, WPS, and DDNS (see "Wi-Fi Buzzwords" on page 98 for more on these and other useful router technologies).

Missing are automatic channel selection (in which you let the router choose the least crowded of the 11 available 2.4-MHz channels to improve performance in busy areas) and DHCP reservation (the ability to set fixed IP addresses for specific computers or peripherals), useful for networked printers, NAS drives, media servers, and the like.

Like most low-end routers, the Belkin doesn't support WPA/WPA2-Enterprise encryption. But if you don't need gigabit ethernet or high-def streaming performance, the Belkin N Wireless Router is a great value and our budget pick.

### D-Link Wireless N Router DIR-615

The D-Link DIR-615 is just about the lowest-cost draft-n router on the market and it has a great feature set, but >>

## Best

is a clear winner.

Ethernet speeds	Overall performance rating and average throughput (mbps) results	Bottom line
10/100/1000 mbps	Rating: Superior Short-range (2.4 GHz): 62 Long-range (2.4 GHz): 24 Short-range (5 GHz): 69 Medium-range (5 GHz): 49	Support for simultaneous top-performing 2.4-GHz and 5-GHz Wi-Fi nets, superior router features, and USB hard-disk sharing send this Linksys right to the head of the class.
10/100/1000 mbps	Rating: Superior Short-range (2.4 GHz): 55 Long-range (2.4 GHz): 19 Short-range (5 GHz): 69 Medium-range (5 GHz): 53	This speedy and versatile router runs in either 2.4-GHz or 5-GHz modes, sports both printer and hard-disk sharing, and provides excellent software and a good setup wizard.
10/100/1000 mbps	Rating: Superior Short-range (2.4 GHz): 61 Long-range (2.4 GHz): 16	Sleek and speedy, this Linksys is a good choice for a small business that wants 2.4-GHz and gigabit support and doesn't need the more multimedia-friendly 5-GHz option. Has deep routing features.
10/100/1000 mbps	Rating: Good Short-range (2.4 GHz): 48 Long-range (2.4 GHz): 20	Workhorse draft-n router has very good performance and features. Ability to expand range wirelessly with additional access points is a plus for large offices and homes.
10/100 mbps	Rating: Good Short-range (2.4 GHz): 48 Long-range (2.4 GHz): 13	Low-cost router doesn't skimp on performance or design, although it lacks gigabit ethernet. Comes with great setup software and a lifetime warranty.
10/100 mbps	Rating: Poor Short-range (2.4 GHz): 36 Long-range (2.4 GHz): 3	This router is priced right and hits all the routing high notes (gigabit ethernet aside), but it stumbles on performance and ease of use.



unfortunately it performed poorly on our speed and range tests.

At close range, it could pump out only 36 mbps on average, compared with 48 mbps for the competing Belkin N. And in our long-range tests (about 60 feet, with multiple walls and appliances in between), the D-Link's throughput dropped to a mere 3 mbps, versus 13 mbps for the Belkin. Even worse, 15 percent of its long-range tests failed completely due to disconnections, versus none for the Belkin.

And that was with the second D-Link DIR-615 router we tried. We were unable to test the first, a revision A1 model supplied by D-Link, because it provided no way to turn off 40-MHz channel bonding (making that unit ineligible for Wi-Fi Alliance certification), so we bought a revision B2 (the latest model, which is Wi-Fi-Alliance-certified) for our testing.

Performance could improve with firmware revisions, and the D-Link has a very good feature set drawn from the company's higher-end router models, including WPA/WPA2-Enterprise and RADIUS server security support for corporate use, as well as UPnP, WMM, WPS, DDNS, and DHCP reservation.

The setup process, though uneventful, wasn't as well thought out as that of other models we reviewed. The Web configuration interface is a confusing mix of wizards and manual tools; after initial setup, we prefer to skip the wizards. We also found it very difficult to convert the router to access-point mode, though we finally unearthed the necessary directions in the manual.

## Gigabit Workhorses

Double your investment to \$150 or so, and you step up to a class of routers that offer gigabit ethernet switches (a huge plus if you have network-attached storage drives, or if you share files between wired clients) and three anten-

**FAST, WIRED OR WIRELESS:** Linksys's Wireless-N Gigabit Router (left) and Netgear's RangeMax Next Wireless-N Gigabit Router both offer solid 2.4-GHz speed and backward-compatibility with 802.11b and g gear, making them good small-business choices.



nas for better range and performance.

In a close match, we give the nod to the Linksys Wireless-N Gigabit Router WRT310N (\$140) over the Netgear RangeMax Next Wireless-N Gigabit Router WNR3500 (\$160) for the Linksys's excellent performance, very good setup tools, and deep routing features.

### Linksys Wireless-N Gigabit Router WRT310N

The Linksys WRT310N outclassed the Netgear WRT3500 in close-range tests, averaging 61 mbps in the same room as the client, compared with the Netgear's 48 mbps. It also performed well at long range (about 60 feet, through several >>

## WI-FI BUZZWORDS

### Features to Look For

DRAFT-802.11N ROUTERS SUPPORT an alphabet soup of useful features. Here's why you should want them—and which of the products we tested have them.

**UPnP (Universal Plug-and-Play)** helps network devices "see" one another and work together. For example, a UPnP AV media player connected to your TV can automatically stream video from a networked UPnP AV drive. Only Apple's router lacked UPnP.

**DDNS (Dynamic Domain Name System)** overcomes the lack of a fixed IP address (most ISPs assign them dynamically) for people who need one to run a Web server, a Slingbox, or most other remote-access services. Again, only the Apple lacked DDNS.

**DHCP RESERVATION** solves the same discoverability problem for your network printers, NAS drives, and other devices within your LAN by reserving a network IP address for each one. All routers tested except the Belkin N had this capability.

**WMM (Wi-Fi Multimedia)**, aka QoS (quality of service) and part of the 802.11n spec, prioritizes voice and video streams so as to improve their quality. All routers tested supported WMM; the Linksys routers also let you prioritize specific applications.

**WPA2 (Wi-Fi Protected Access)** with AES encryption, also part of the 802.11n spec, is the strongest form of Wi-Fi security, as well as the fastest and most secure. All six routers we tested had WPA2 support.

**WPS (Wi-Fi Protected Setup)** simplifies adding new devices to an encrypted network with a PIN or push-button setup—if the client and router support it. The Apple and Linksys dual-band routers lacked this feature (Linksys plans to add it via firmware).

**WDS (Wi-Fi Distribution System)**, also known as "repeater" functionality, lets you extend range by adding wireless access points (usually from the same manufacturer). The Apple and Netgear routers had this capability.



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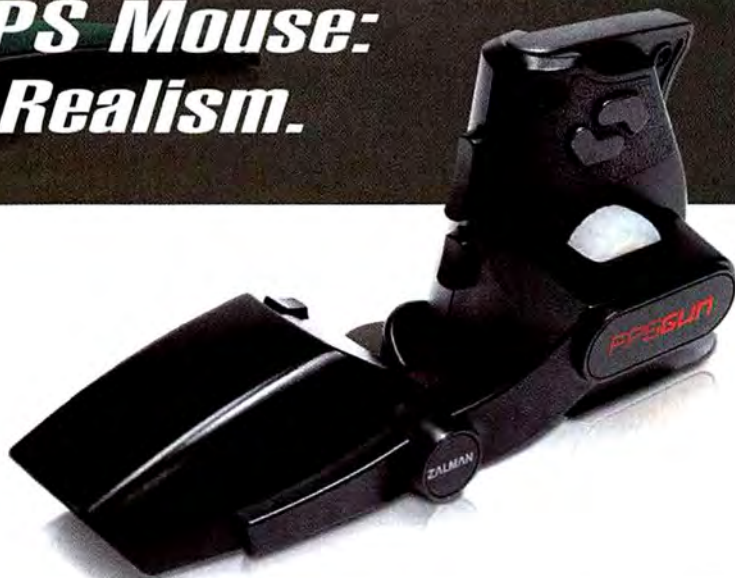
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walls and appliances), although it was not quite as fast as the Netgear.

The device's performance in our entire 1400-square-foot house was good, which was fortunate since, unlike the Netgear, the Linksys does not support wireless range extension.

But that's about the only fault we found. Its design is sleek (the antennas are internal, as are those of the Apple and Netgear routers), and its performance proves you don't need rabbit-ear antennas to get good range.

Setup via a desktop application called Linksys EasyLink Advisor (LELA) steps beginners through everything from cable hookups to password creation—though you'll need the Web configuration tool for special settings such as port forwarding or DHCP reservation.

The Web utility offers many deep routing features. For example, while all the routers in this review offer WMM/QoS (for prioritizing video or VoIP traffic), the Linksys WRT310N lets you customize application priorities: You can set gaming or streaming media to trump all else, or ensure that BitTorrent doesn't muck up your VoIP phone calls.

Web filtering is another area where the Linksys excels. You can stop proxies, Java, ActiveX, and cookies right at the router, which should ward off most Trojan horses and spyware. But we wish that it allowed limiting the filtering to certain computers; lack of Java and cookie support cripples the viewing of many Web sites. On the other hand, you *can* limit access to specific applications, URLs, and keywords on a PC-by-PC basis, a handy feature for parents.

### Netgear RangeMax Next Wireless-N Gigabit Router WNR3500

The Netgear WNR3500's design is the most unusual, and annoying, of the bunch. You can't wall-mount the tall, upright case, and fitting the unit on a desk is tough since you can't stack it and need a reasonably clear area around it. It's cool-looking, though, especially when the ring of blue lights around the

top flash to show network activity.

Performance was mediocre at close range—about the same as that of the much-cheaper Belkin—but improved greatly at long range. The Netgear also offers a useful repeater function that can extend your wireless range with additional Netgear access points.

But what really impressed us was the setup software and the intelligence of the router in recognizing our network conditions. It saw that our DSL modem had the same LAN IP address—a network no-no—and promptly changed itself to a different range while telling us exactly what it was doing, and why. Excellent, context-sensitive help also appears right alongside the router configuration pages. It's always on, so you don't have to click a button to see it, unlike with most other routers.

Routing features were very good, although not quite as deep as the Linksys's set. It has UPnP, WMM, DDNS, and DHCP reservation, but lacks the WPA/WP2-Enterprise encryption support that many businesses require. This should not be a big issue in a home setup, however. If you're looking for a good gigabit router with wireless range extension to cover larger areas or bigger houses, the Netgear is a safe choice.

**TWO BANDS OF N:** Apple's AirPort Extreme Base Station with Gigabit Ethernet (left) and Linksys's Dual-Band Wireless-N Gigabit Router with Storage Link support 2.4-GHz and 5-GHz modes—but only the Linksys can do both simultaneously.



## Duel of the Dual-Bands

If you're willing to spend \$180 to \$200, consider a draft-n router that supports both 5-GHz and 2.4-GHz operations (and, respectively, legacy 802.11a and 802.11b/g gear). The Linksys Dual-Band Wireless-N Gigabit Router with Storage Link WRT600N and the Apple AirPort Extreme pack in other useful features, too, notably USB drive sharing.

In this tier the Linksys again wins, thanks partly to superior performance and its ability to run simultaneous 2.4- and 5-GHz networks. But the AirPort Extreme boasts USB printer sharing, top-notch setup software, and significant advantages for PC/Mac networks.

We had hoped to test either the Buffalo WZR-AG300NH or the D-Link DIR-855 (the only other simultaneous dual-band routers), but Buffalo has been enjoined from shipping its model because of a patent dispute, and D-Link recalled its early models due to manufacturing issues ([find.pcworld.com/60677](http://find.pcworld.com/60677)).

### Apple AirPort Extreme Base Station with Gigabit Ethernet

Apple's latest incarnation of the AirPort Extreme (earlier 802.11g and non-gigabit 802.11n versions have similar names, so be careful when shopping) has dual-band support, but can run only in one band at a time; you must choose either 2.4-GHz or 5-GHz mode.

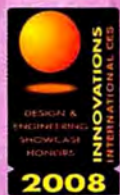
But it has two key features that the Linksys Dual-Band does not: wireless range extension, so you can cover >>





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## NOTEBOOK ADAPTERS

# Intel's 802.11n: No Slouch

IF YOU BUY an 802.11n router, check your laptop before spending an extra \$100 for an adapter: Many recent Intel Centrino models sport not just 2.4-GHz but dual-band n support, via the Intel Wireless WiFi Link 4965AGN PCI Express mini-adapter.

But does this Intel product perform as well as the router vendor's matching external USB adapter (which we used in our performance tests, where possible)? To answer that question, I informally tested throughput with all six routers using a Micro Express Centrino notebook with the Intel 4965AGN card. Good news: For four of the six routers in my hands-on tests, Intel's chip set outperformed the USB adapter.

The improvement was most noticeable with the Belkin gear, but it was also true of the D-Link equipment. And with the Apple AirPort Extreme, throughput with the Intel chip set was a full 33 percent higher than with the Linksys Dual-Band USB adapter

that we used for testing (Apple does not make USB adapters).

On the other hand, the Linksys and Netgear USB adapters performed better than Intel's with their matching routers, suggesting tighter integration.

In long-range tests, the Intel outperformed almost all the USB adapters—perhaps because of better antenna placement. Notebook vendors typically run Wi-Fi antennas up the side of the screen, somewhat like using a pop-up antenna to improve cell phone reception.

Don't, by the way, pay much heed to the "Connect with Centrino" label that's supposed to show good compatibility with Intel's Wi-Fi technology. Neither of the routers (Apple and Belkin) that produced the most improved results with the Intel adapter have this certification (although Belkin says it plans to add support via firmware).

The bottom line: If you already have the Intel 4965AGN, don't get a USB 802.11n adapter—and when buying a new notebook, go for Intel's a/g/n chip set if it's offered.

large areas using multiple AirPort Extremes or AirPort Expresses as access points, and USB printer sharing. It's also slightly less expensive, so you might keep an older g router for b/g clients and use the AirPort Extreme as a 5-GHz access point for video and other high-bandwidth tasks with 5-GHz n clients. As a 2.4-GHz router, its performance compares favorably with that of the mid-range gigabit models discussed earlier.

Though it has only one USB 2.0 port for both drive and printer sharing, you can hook up a hub to attach several different printers and drives. However, we could only print (not scan or fax) on multifunction printers. Also, the Air-

Port has just three LAN ethernet ports, versus the usual four on other routers.

You can format drives in either Windows FAT32 or Mac file systems, and back up Macs with OS X 10.5's Time Machine. You can also receive updates using Apple Software Update.

As a 5-GHz router, the Apple beats the Linksys in long-range performance, but it lacks significant features that the Linksys has, notably UPnP, DDNS, and URL/keyword content filtering. Apple's Bonjour network service discovery protocol (formerly called Rendezvous) is not as widely supported as UPnP.

The AirPort does support IPv6, the next-generation routing system intend-

ed to address a growing scarcity of discrete IPv4 addresses and to simplify design of large networks. This likely won't benefit most home users, however.

Setup requires Windows or Mac software (it offers no Web interface). But Apple's software makes turning the AirPort into an access point easy.

## Linksys Dual-Band Wireless-N Gigabit Router with Storage Link WRT600N

At \$200—just \$50 more than many single-band gigabit routers—and with USB drive sharing as a bonus, this router can support 2.4-GHz legacy devices and 5-GHz clients simultaneously.

In tests with Linksys's new DMA2200 HD Media Center Extender, 1080i video streamed smoothly and reliably from PC to TV in 5-GHz mode but exhibited frequent dropouts and pauses in 2.4-GHz mode.

This Linksys outperformed other units we tested for overall speed and range. Like its single-band sibling, it offers deep routing features, including application-level QoS, port forwarding/triggering for network services and gaming, and URL/keyword filtering for parents. Like the Apple, it also supports IPv6. A button on top is for Wi-Fi Protected Setup, which Linksys expects to support via a firmware update.

You can configure the router either through a standard Web interface or via the Linksys EasyLink Advisor (LELA) desktop application. The app doesn't cover all of the router's many features, however: For example, the first thing we did after using the setup utility was to identify users and shared folders for our attached hard drive (which can be formatted as FAT32 or NTFS).

Drive sharing via USB will be slower than with a dedicated gigabit ethernet NAS drive, but it's useful if you have an old drive. You can even set up an FTP folder on the drive for remote access.

We would have liked to see USB printer-sharing support as well, but overall the Linksys Dual-Band is the router to beat in almost every area. ●

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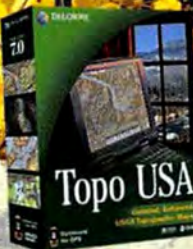


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New online services offer to protect you from identity theft, and some claim to help you undo damage after it

**Identity Protectors:**

**Who Can You Trust?**

BY DAN TYNAN

happens. But when we tested the services, we found that many fall short. >>



# Y

OU CAN'T OPEN a newspaper or a browser without reading about some data spill that has put consumers' personal information at risk. Over the past three years, more than 220 million private records have been lost or stolen, according to the San Diego-based Privacy Rights Clearinghouse. In 2007, 8 million to 15 million Americans had their identities stolen. The odds that it will happen to you are about one in five, according to surveys conducted by the Chubb Group.

Identity theft is a national epidemic, but some firms also see it as a marketing opportunity. In fact, some credit bureaus and banks that facilitated the spread of easy credit—and in the process unwittingly made identity theft a more profitable crime—now sell services to help you avoid having your identity pilfered.

For \$10 to \$20 a month, a company such as LifeLock or TransUnion will monitor your credit reports, alert you if anyone opens an account in your name, and help you recover fraudulent charg-

**BESIDES providing credit reports and alerts to its users, TrueCredit.com pelts them with a hail of advertisements for low-cost credit cards and other services that they might want to know about.**

es. But you can do many of the things these services offer to do, at no cost except for the effort (see "DIY Identity-Theft Protection: A 12-Step Program" on page 108 for details).

To assess the paid services, we signed up with six leading firms. Even services that worked as advertised weren't comprehensive. Only two—Suze Orman's Identity Theft Kit and Identity Guard—offered protection for anything beyond financial fraud. Using any of the services is better than doing nothing, but you may still have to work to safeguard your identity.



## HOW MUCH IDENTITY PROTECTION DO YOU GET FOR YOUR MONEY?

None of the six services we tested qualifies as full-featured. Here's how they ranked, based on offerings and performance.

COMPANY/SERVICE, IN ORDER OF RATING	Rating	Credit alerts and online credit reports	Public record reports	Fraud alert	Online dashboard	Chat room scans	Identity theft insurance	Security software	Comments
Identity Guard "Total Protection" \$17/month or \$170/year <a href="http://www.identityguard.com">www.identityguard.com</a>	Good	Yes	Yes	No	Yes	Yes	Yes	Yes <sup>1</sup>	Full service handles both monitoring and freezes, but interface invites signing up for things you already have.
Debitx Identity Protection Network \$99/year <sup>2</sup> <a href="http://www.debitx.com">www.debitx.com</a>	Fair	No	No	Yes	Yes	No	Yes	No	Service offers real-time identity verification via phone, though not all creditors take advantage of this.
Suze Orman's Identity Theft Kit \$40 kit <a href="http://www.suzeorman.com">www.suzeorman.com</a>	Fair	No	No	Yes <sup>3</sup>	Yes	Yes	Yes	Yes <sup>4</sup>	Software-based kit uses TrustedID for alerts; claims to protect against theft of health insurance records, too.
TrustedID "Identity Freeze" \$13/month or \$110/year <a href="http://www.trustedid.com">www.trustedid.com</a>	Fair	No	No	Yes	Yes	No	Yes	No	This is the only service to manage both credit freezes and fraud alerts. Performed as advertised in our tests.
LifeLock \$10/month or \$110/year <a href="http://www.lifelock.com">www.lifelock.com</a>	Poor	No	No	Yes	No	Yes	Yes	No	The most limited of the services tested lacks online dashboard; fraud alert wasn't set until we followed up.
TrueCredit by TransUnion "3 in 1 Monitoring" \$15/month <a href="http://www.truecredit.com">www.truecredit.com</a>	Poor	Yes	Yes	No	Yes	No	No	No	Service is marred by obnoxious marketing tactics; in our tests it failed to issue alerts in two instances.

<sup>1</sup> Free download of ZoneAlarm Security Suite included. <sup>2</sup> Also sold by LoudSiren for \$9 a month. <sup>3</sup> Via partnership with TrustedID. <sup>4</sup> Installs antivirus and antispyware software.



**ANNUAL CREDIT REPORTS** are free, but Javelin Strategy and Research president James Van Dyke says that credit monitoring has become a billion-dollar business for credit bureaus.

tools for managing and improving your credit rating.

But a credit-monitoring service won't tell you if someone steals your credit card and runs up huge bills; for that you must check your monthly billing statements. Furthermore, if you receive an alert about a dubious inquiry, you'll have to identify it as bogus and contact the credit bureaus on your own.

Our real-world tests of two major credit-monitoring services yielded mixed results. First we signed up for TrueCredit's three-in-one monitoring service, which promises to deliver e-mail alerts from all three bureaus for \$15 a month. The first two times our tester tried to open a new credit account, TrueCredit failed to issue an alert. A third test a month later was more successful.

"The likely explanation is that [the bureaus] had not yet completed the processing required on their end by the time the first two inquiries were made," says Steve Katz, a spokesperson for TrueCredit's parent company, TransUnion.

Using TrueCredit was truly annoying in other ways. Whenever we accessed our account or received an e-mail alert, we had to wade through advertisements for credit scores, low-cost credit cards, and other services.

We had better luck with Identity Guard, whose parent company, Intersections, provides identity-theft protection sold through Citibank, Equifax, GE, and other firms. We signed up for Identity Guard's \$17-per-month Total Protection plan—which provides credit monitoring, credit scores, security software, and public-records searches that identify names, addresses, and property associated with your identity, along with things like licenses, tax liens, and criminal convictions—and it alerted us to every change made in our credit reports.

Unfortunately, we found Identity Guard's interface confusing and its customer service line unhelpful. One particular annoyance: Our account page advertised services already covered under the Total Protection plan, inviting unwary consumers to buy the same services twice under different names. Tim Walston, a senior vice president for Intersections, explains that the ads are provided for people who may want to obtain fresh reports between Identity Guard's quarterly updates. »

## Monitoring Your Credit

The keys to your financial identity jangle in the pockets of the Big Three credit bureaus: Equifax, Experian, and TransUnion. When you apply for a credit card, sign up for a wireless plan, or apply for a job, the company you're trying to do business with is likely to request a copy of your credit report. If anyone steals your identity, that person's bad behavior goes on your report, hurting your chances for a loan, a phone, or a job.

Federal law entitles you to a free annual report from each of the Big Three. You also qualify for a free copy if you've recently been denied credit or if you're an identity-theft victim. The bureaus make no money by supplying free credit reports, but they make a lot of money—more than \$1 billion annually, according to Javelin Strategy and Research president James Van Dyke—by selling credit-monitoring services.

For \$5 to \$20 per month, a credit-monitoring service will alert you whenever your report changes. If a thief opens new accounts in your name, you'll usually find out within a few days. Most monitoring services offer online credit reports, online credit scores (showing your chances of obtaining credit), and

**AFTER SIGNING UP for Identity Guard's Total Protection plan, we continued to encounter ads inviting us to "enhance your protection" by purchasing services already offered under the plan we'd paid for.**

The screenshot shows the Identity Guard website interface. On the left, a sidebar menu lists 'Credit Report & Score' and '3-in-1 Credit Report with 3 scores'. The main content area features two prominent blue boxes. The top box is titled 'CREDIT REPORT & SCORE' and offers a 'Credit report and score with data from Equifax' for 'ONLY \$5.50' with an 'ORDER NOW' button. The bottom box is titled '3-IN-1 CREDIT REPORT with 3 scores' and offers a '3-in-1 credit report and all three scores' for 'ONLY \$12.95' with an 'ORDER NOW' button. Both boxes are circled in red. The background shows other website elements like 'Welcome', 'Enhance Your Protection Today!', and 'Your Credit'.



[illegible]

**CEO TODD DAVIS** was so confident of LifeLock's service that he published his own Social Security number on the home page—and soon thereafter had his identity stolen.

## When Fraudsters Attack

If credit monitoring is a burglar alarm that goes off when someone steals your identity, a fraud alert is a deadbolt that prevents break-ins. At least, that's how it's supposed to work. By law, you can place a temporary fraud alert on your credit report, requiring

lenders to verify your identity before issuing credit in your name. And if you tell one credit bureau to set up a fraud flag, it's obliged to notify the other two. But such alerts expire after 90 days. To address the lapses in coverage, companies such as Debix, LifeLock, LoudSiren, and TrustedID will renew alerts every three months for \$9 to \$13 a month.

These services set their alerts in different ways. LifeLock and TrustedID contact the bureaus and set the alert. Debix (which powers LoudSiren) provides its own contact number for lenders. When a creditor calls the number, Debix's automated voice network calls your phone and lets you approve or deny the transaction by entering a PIN. Debix can call up to three numbers until it finds you.

But in real-world tests, our results varied widely. After signing up for TrustedID, one of our testers applied for instant credit at The Gap. Store employees saw the fraud flag, called the Gap's internal credit division (operated by GE Money Bank), and put our tester on the phone to answer multiple-choice questions about his finances.

Another tester signed up for LifeLock and applied for a card at a different Gap store; he was granted instant credit after showing the store clerk his driver's license. In that case, LifeLock CEO Todd Davis admits, the fraud alert did not get set on the date it was requested. After requesting the alert a second time, our tester applied for another card and was asked to verify his identity more stringently. Davis adds that, either way, our tester would have been protected by LifeLock's service guarantee (see "The 'Million Dollar' Question," page 110).

In our in-store Debix test, the creditor verified our tester's identity by putting him on the phone with the store's credit department, bypassing Debix's automated system. According to Julie Ferguson, Debix's vice president of emerging technologies, "80 percent" of creditors call Debix to verify »

## DIY IDENTITY-THEFT PROTECTION: A 12-Step Program

**YOU DON'T HAVE to** spend \$100 to \$200 a year to defend yourself from identity theft at the level of protection that a paid service offers. You can do almost everything the services do, for free. But following these steps will require time and effort.

- 1** Get a free copy of your credit report by visiting [www.annualcreditreport.com](http://www.annualcreditreport.com). Don't be fooled by look-alike sites that promise free reports if you subscribe to their credit-monitoring services. Better yet, order by phone at 877/322-8228.
  - 2** For DIY credit monitoring, order a free report every three months from a different bureau. Scan the report for unfamiliar information, such as accounts you don't remember opening.
  - 3** Place a fraud alert on your credit report by calling one of the credit bureaus. (You can find contact information for all three bureaus by browsing to [www.fightidentitytheft.com](http://www.fightidentitytheft.com).)
  - 4** Put a recurring event in your online calendar to remind you to renew your fraud alert in 90 days.
  - 5** Tell the bureaus to stop selling your information to credit services, by calling 888/567-8688 or visiting [OptOutPrescreen.com](http://OptOutPrescreen.com). Doing so will reduce but not eliminate the number of preapproved credit card offers you receive.
  - 6** Request a free public records report from ChoicePoint ([www.choicepoint.com](http://www.choicepoint.com)). You'll have to print a
- stances, you may have to mail letters or navigate to a marketer's own site to complete your opt-out request.
- 8** Buy a mailbox that locks, or use a post office box. This will help prevent thieves from stealing your identity via paper mail.
  - 9** Buy a crosscut paper shredder and shred junk mail to frustrate dumpster-diving identity thieves.
  - 10** Never click a link from an e-mail message to log in to your bank or to any other financial institution. Type the secure site's address into your browser, bookmark it, and use that link to access your accounts. Otherwise, you risk having your identity stolen by phishers.
  - 11** If you believe that you are a victim of identity theft, contact the Identity Theft Resource Center ([www.idtheftcenter.org](http://www.idtheftcenter.org)). Volunteers there can walk you through the process of restoring your identity.
  - 12** Get educated. Mari Frank's Identity-Theft.org, the Privacy Rights Clearinghouse, and the FTC maintain huge libraries of information on how to avoid being victimized, and what to do if it has already happened.







transactions—but they are not under any legal requirement to do so. Creditors can verify your identity in other ways, such as by sending a letter that asks you to mail them copies of W-2 statements, utility bills, or other documents.

In rare instances, creditors may issue credit without bothering to check your report. That seems to be what happened to Davis, who gained notoriety by publishing his Social Security number on LifeLock's home page and daring anyone to steal it. A Fort Worth, Texas, man promptly used Davis's identity to obtain a \$500 loan. Davis says that many low-amount lenders don't pull credit reports, which is why the Fort Worth creditor didn't see the fraud flag that LifeLock had placed on its CEO's credit report.

"This person would have been able to get the loan no matter what form of protection was in place," says Mike Prusinski, LifeLock's vice president of communications. "As soon as Todd was aware of the problem, he reported it to LifeLock—and the remediation services investigated, found the source of the identity theft, stopped additional attempts by this same person to buy cell phones and other goods, and prevented any other consequences from the identity theft such as damage to a credit score."

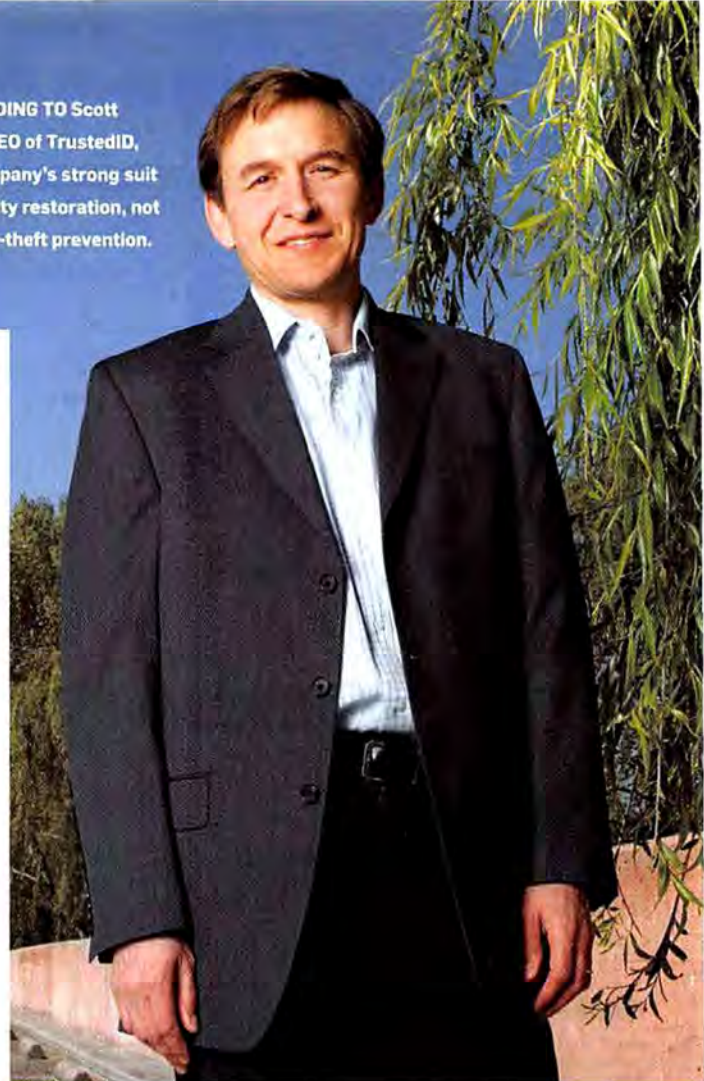
In February, Experian sued LifeLock, claiming that federal law prohibits corporations from setting fraud alerts for consumers, and calling LifeLock's marketing practices fraudulent.

"LifeLock claims it can prevent identity theft, but that's simply not true," says Experian spokesperson Rod Griffin. "By the time a credit report has been pulled, the person's identity has already been stolen. It gives people a false sense of security."

Davis says he can't comment on an active lawsuit but would "welcome the chance to work out a business solution [with Experian] that will continue to protect consumers."

Griffin won't say whether Experian will take legal action against other fraud-alert firms. TrustedID CEO Scott Mitic notes that the law allows consumers or their "personal representatives" to set flags, and says that his company has a good relationship with the bureaus. Debix pays one bureau for the right to set flags, Ferguson says, but she declines to identify

ACCORDING TO Scott Mitic, CEO of TrustedID, his company's strong suit is identity restoration, not identity-theft prevention.



which one. As we went to press, Identity Guard announced that it would stop setting alerts for consumers "because Experian asked us to stop," says Intersections' Walston.

### The 'Million Dollar' Question

Besides setting alerts, some services obtain your credit report and ask the bureaus to stop selling your info to credit card companies—two things you can do on your own (see "DIY Identity-Theft Protection," page 108). Identity Guard and TrustedID will scan the Web and tell you if someone is

trading your info online; but the odds of catching anyone are virtually nil, says Dmitri Alperovich, director of intelligence analysis for Secure Computing.

"This type of claim is mostly a gimmick," he says. "You might find a few credit card numbers by searching the Net, but most of them aren't lying around for public viewing, and the people who have them won't deal with you unless you're also a criminal."

LifeLock, LoudSiren, and TrustedID provide million-dollar guarantees against identity-theft losses, but that >>

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promise comes with some strings attached; LifeLock says that it will hire specialists to contact lenders and law-enforcement agencies for you, and will pay other direct costs up to \$1 million. However, the guarantee doesn't define which costs LifeLock considers "direct," nor does it specify which costs are covered below the million-dollar cap.

TrustedID promises to pay the cost of reestablishing your identity, reimburse your legal fees, and restore up to \$5000 in lost income. LoudSiren covers theft losses, attorneys' fees, and lost wages, with no cap. Debix's \$25,000 policy covers expenses, attorneys' fees, and up to \$2000 in lost wages.

But a million dollars is an inflated amount anyway. According to Javelin, the average out-of-pocket cost for identity theft victims in 2007 was \$691, and the average loss for people who had false accounts opened in their names was \$1066. Regardless, most victims of financial fraud don't pay anything out of pocket because the financial institutions typically bear the costs, notes Rachel Kim, an associate analyst at Javelin.

TrustedID's Mitic acknowledges the unlikelihood that anyone will need a million dollars of coverage. The real advantage, as he sees it, comes from having experts who can take the hassle and pain out of restoring customers' identities.

## Security Freeze Available Nationwide



**ESTABLISHING A security freeze prevents the credit bureaus from releasing your credit report to anyone, but unfreezing your report is a pain. Consumers Union offers an online guide to the freeze laws in all 50 states.**

"I think the biggest benefit customers get from TrustedID's warranty is our restoration services—our commitment to hold a customer's hand, do everything and anything they need to help them put their lives back together again," Mitic says.

According to Prusinski, only 41 of LifeLock's 840,000 subscribers have ever needed its restoration services. Mitic declines to release TrustedID's customer numbers, but he estimates that 1 out of 10,000 need their identities restored. Debix's Ferguson says that just 9 of its 300,000 subscribers have filed insurance claims; in most cases the theft had happened before the customer signed on to the service.

**THERE ARE STEPS you can take to curb identity theft without using the services we tested. ProQuo.com, for example, lets you opt out of marketing databases, thereby reducing junk mail and theft risks. For more do-it-yourself options, see the sidebar on page 108.**

## The Nuclear Option: Security Freeze

The third option beyond monitoring and alerts isn't pretty.

"Rather than relying on fraud alerts or spending \$100 to \$180 a year on credit monitoring, consumers should consider a security freeze," says Beth Givens, director of the Privacy Rights Clearinghouse. "Depending on how often you use it, a freeze can be an effective way to prevent identity theft and a lot cheaper than credit monitoring."

With a freeze (which you can set up yourself for a small fee), credit bureaus won't release your report at all—not ideal if you need to obtain a mortgage, change cable providers, apply for a job, or do anything requiring a credit check. Freezes are free for identity-theft victims in most states, Givens notes.

TrustedID can set up a freeze for you for \$15 plus any credit bureau fees, but you must mail it a power of attorney form.

Or you can do it yourself via certified mail. The rules and fees vary depending on where you live, but the cost is usually \$10 per bureau. (Consumers Union has a guide to each state's laws; see [find.pcworld.com/60689](http://find.pcworld.com/60689).)

If after freezing your account you decide to change your cable plan or apply for a loan, you'll probably have to pay \$10 per bureau to unfreeze your account for a specific creditor or a certain period of time. And because credit bureaus tend to move at glacial speed, you should make an unfreeze request long before you actually need it. Even with a freeze in place, identity thieves can use your medical insurance, ruin your eBay reputation, or apply for jobs with your name and résumé. Identity protection services can't prevent such problems, says Linda Foley, director of the Identity Theft Resource Center and an identity-theft victim.

Identity protection services may help people who can't be bothered to take the necessary precautions or who lack the resources to protect themselves. But you should choose carefully, read the fine print, and resist acting out of fear.

"I would say 'Buyer, beware,'" says Foley. "There is nothing you can buy that will keep you from becoming a victim of identity theft—and if there was, I'd be the first in line to buy it."

*PC World Senior Editor Tim Moynihan and Senior Writer Tom Spring contributed to this story.* ●



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# Here's How

## Build Your Own High-Def PC

If you have been dreaming of the ultimate high-definition computer, why not take matters into your own hands? We show you how to pick the hottest components and create the multimedia system you always wanted.

BY ZACK STERN

**IT'S UNMISTAKABLE:** We are living in a high-definition world. And with a new generation of affordable, high-quality HD components flooding the PC landscape, it's high time your computer began sharing in the fun.

Great high-def systems from the store still cost a fortune. But if you have the skills to assemble your own machine, you can save a bundle by building an HD-capable Media Center PC designed to deliver pristine video and amazing gaming.

For recording HDTV, playing Blu-ray Disc movies, or lightly editing HD home videos, a well-built high-def PC can help you do it all. For this project, I'm building a system that will complement my living-room entertainment system. With the parts I've chosen, my setup costs about \$2400 (counting the \$260 copy of Vista Home

**WITH THE RIGHT components, you can build your own HD PC in a single afternoon—and have a digital entertainment extravaganza by nightfall.**

Premium, but not counting the \$1000 LCD monitor). You can lower the cost by selecting a less expensive case.

**Note:** If you've never built a computer before, I recommend that you read Scott Mueller's article "Step-By-Step: To Get Just the PC You Want, Build It Yourself" ([find.pcworld.com/60637](http://find.pcworld.com/60637)) for important tips on assembling your computer. And be sure to ground yourself at all times.

**Case and Power Supply** Assembling a good PC starts with using high-quality components from the ground up. That means choosing a case

and a power supply that will be adequate for your needs.

**Case:** Beauty is beauty—even if it's skin-deep. Pick a case that will look good on your desk or in your home entertainment center. Many home theater cases include displays to show the name of a song that's playing and even to let you navigate media. I chose the SilverStone Crown CW03-MT for my HD PC. At a retail price of \$700, this was by far the most extravagant component in my system. But I couldn't resist its integrated LCD display and front media controls.

Make sure that the software driving those extras works

with your operating system of choice. I planned all along to load my high-def PC with Windows Vista Home Premium, which I know will support the case's LCD display.

While you could cram everything into a case the size of a pizza box or shoe box, you'll have an easier time and a broader selection of components to choose from if you stick with a horizontal minitower. Also, the system's heat—and therefore the sound that the fans generate while keeping everything cool—is an important part of your experience. Nobody wants to pump up the volume just to drown out a whiny PC fan. Good airflow will help keep things quiet.

**Power supply:** A 500-watt power supply should be ade-





quate for most purposes if your system doesn't include multiple hard drives, a high-end graphics board, and other energy-hungry devices beyond the recommendations given here. (Go to [find.pcworld.com/60638](http://find.pcworld.com/60638) for OuterVision Extreme's Power Supply Calculator Lite to come up with a rough estimate of what you'll need.) I chose the Antec NeoPower 650 because of its quiet fan, and because its 650-watt rating provides a healthy margin to accommodate upgrades.

When installing your power supply, try to route the various cables along the interior edges of the case so that they don't obstruct airflow.

### Core Components

Lay a foundation for top-of-the-line performance by selecting a great motherboard and CPU; then complement those with fast memory and a high-def graphics board.

**Motherboard:** First, be sure to pick a motherboard that works with the other parts of your system: Your case will determine whether you pick ATX or MicroATX—and you will need the right socket for your processor. The graphics board should work with any new motherboard's PCI Express slot; but for best compatibility, purchase one with a like-brand on-board video chip set. (Or avoid on-board video entirely.) The standard assortment of PC ports should be fine, but get

gigabit ethernet for high-speed, wired video transfers over a home network. I went with the Asus M3A32-MVP for compatibility and for its silent heat-pipe design (to provide extra cooling).

**Processor:** Quad-core processors are becoming mainstream, but they draw a lot of power and generate excessive heat. Certain video editing programs do take advantage of the four cores, but I'm aiming for a lower

target. You could build a good system with an Intel Core 2 Quad Q6600 or other, similar chip—gamers take note—but I decided to choose something that was less powerful and a lot cooler. The AMD Athlon X2 BE 2400 works well for home theaters because its peak draw of 45 watts helps keep the fans quiet. Whether you go with an Intel CPU or an AMD model, you'll definitely want a dual-core processor

to handle multimedia tasks.

Install the processor by lifting the socket arm, setting the chip carefully in place, and lowering the lever—no pressure is needed.

**CPU cooler:** The CPU you buy should come with its own heat sink and fan, but those bundled components may well generate too much noise for an entertainment PC. Give them a try if you can, but don't hesitate to consider a replacement. »

## Shopping List for a High-Definition PC

GET LINKS TO vendors and pricing for these components at [find.pcworld.com/60649](http://find.pcworld.com/60649).

### CASE (\$700)



SilverStone Crown CW03-MT

### POWER SUPPLY (\$130)



Antec NeoPower 650

### MOTHERBOARD (\$240)



Asus M3A32-MVP

### PROCESSOR (\$110)



AMD Athlon X2 BE 2400

### CPU COOLER (\$60)



Zalman CNPS9500

### MEMORY (\$125)



Crucial  
2x2GB DDR2 PC2-5300 DIMMs

### GRAPHICS BOARD (\$50)



ATI Radeon HD 3450

### HARD DRIVE (\$240)



1TB Seagate Barracuda 7200.11

### OPTICAL DRIVE (\$190)



Pioneer BDC-2202

### TV TUNER CARD (\$125)



ATI TV Wonder 650

### INPUT DEVICE (\$145)



Logitech diNovo Mini Keyboard

### DISPLAY (\$1000)



Samsung SyncMaster 275T



# Here's How

You can buy liquid cooling components that are completely silent, but you should avoid that route because of the maintenance required, not to mention the risk of leaks. Instead, opt for a quiet variable-speed fan attached to a heat sink. And double-check the specific model for processor and case compatibility. The Zalman CNPS9500 CPU cooler fits with my system's other components and with the PC case, and it runs quietly when turned down.

When installing the CPU

sure that the particular type you select works with yours.

Don't bother with the absolute fastest DDR3 RAM. Instead, spend your money on quantity: 4GB will be ample for Windows Vista or Windows XP Media Center. (And unfortunately, your operating system and hardware configuration might not recognize every last bit of it. But having 3GB of functional RAM is better than having only 2GB.) Also, go for a pair of the same 2GB DIMM chips. Many current motherboards take advantage of dual-channel architecture so

rather than at an angle.

**Graphics board:** The graphics board is a critical component in our setup, since it will be taking over much of the high-def playback from the processor. Good news: In just the past few months, these cards have made a giant leap forward in quality while prices have dropped.

An ultra-high-end option may not be the best one for your system, however, since they generate a lot of heat. But make sure that the card decodes Blu-ray Disc movies in addition to your own recorded shows. HDCP com-

HD graphics board. For my system, I ultimately selected the ATI Radeon HD 3450 video card, because it meets my other needs and doesn't require a fan for cooling. Unlike the Asus model, this board lacks an HDMI port, but it works well with any DVI-equipped HDTV.

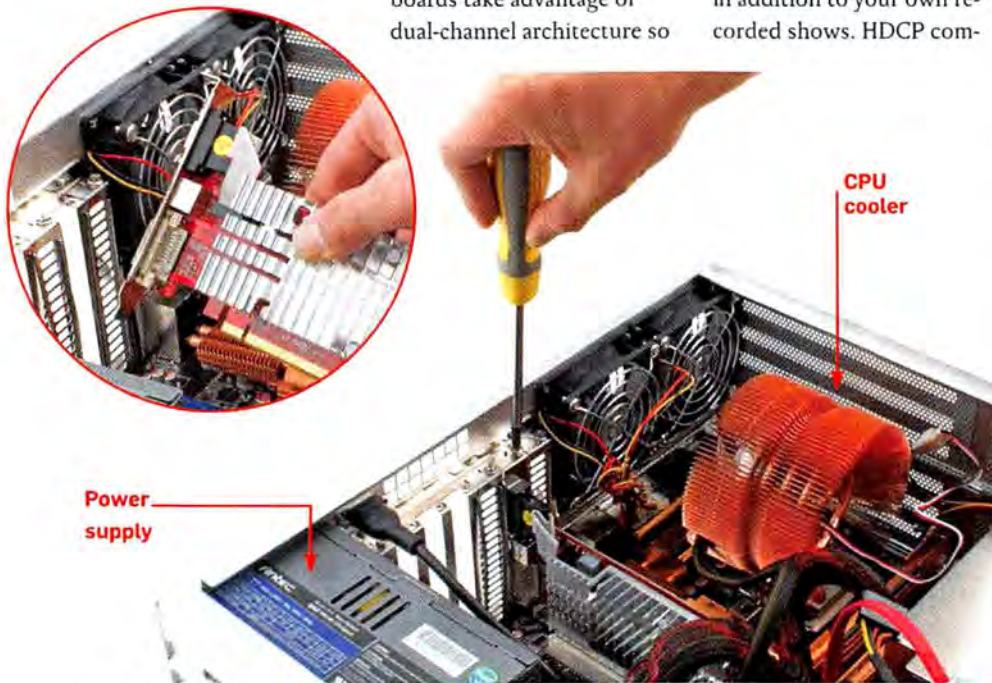
## Peripherals and Software

You'll need tons of hard-drive space to store your media, as well as an HD optical drive to play high-def movies.

**Hard drive:** Compressed HD video recordings can eat up roughly 7GB per hour, so get a hard drive big enough to hold those recordings. Nearly all current motherboards support the SATA bus, and the latest models run at 3GB per second—though units that operate at 1GB per second should be fast enough for this system. Pick a drive that spins at 7200 rpm or greater.

While you could install multiple drives for optimum performance, a big, single drive will be sufficient. Go for at least 500GB. I settled on a 1TB Seagate Barracuda 7200.11 because of its speed and its capacity to hold 140 high-def episodes of *Lost*. If you add multiple drives, position them as far as possible from each other, so that they won't get too hot.

**Optical drive:** Now that Blu-ray has pummeled the rival HD DVD format into a sad, dusty memory, there's little reason to refrain from adding a Blu-ray Disc drive to your entertainment center. I chose the affordable Pioneer BDC-2202 for my system; >>



**SECURE YOUR GRAPHICS board to your PC's motherboard by seating it in an available PCI Express slot (see inset) and then firmly tightening the screw used to attach it to the system case.**

cooler on your system, apply an even, paper-thin layer of thermal paste over the processor's surface, and then set the cooler in place. Try not to let the cooler slide back and forth over the CPU while you are seating it.

**Memory:** Current motherboards can support a variety of memory chips, but make

that each DIMM can access the memory controller. The pair of middle-weight Crucial 2x2GB DDR2 PC2-5300 DIMMs that I chose strike a solid balance between price and performance.

Handle the RAM—as well as other components—only by its edges, and firmly push the chips straight into place

pliance, which decrypts the digitally protected video signal, is critical; fortunately, it's common these days. The Asus EN8600 GT with HDMI is one good option, fulfilling these needs easily. At press time, nVidia was readying its GeForce 8200 chip set for motherboards, too, bypassing the need for a dedicated



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via the web**

**I surf porn  
websites from  
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**I shop online  
after closing  
my office door**



# Here's How

it can play back Blu-ray discs and burn standard DVDs. (You can buy a Blu-ray burner for about three times the cost of the BDC-2202.)

When installing the drive in your case, consider removing the front bezel. This plastic lip may be unnecessary, and some system cases come with a replacement bezel that matches the color of the front paneling.

**TV tuner card:** I wish that I could draw content directly from my cable company's HDTV programming through a CableCard, but such cards still aren't readily available to do-it-yourselfers like me. Or I could get over-the-air HDTV through an ATSC tuner card and antenna. My choice—the ATI TV Wonder 650—is such a card, and it supports the Clear-QAM format for digital cable, so that I can use it to capture unencrypted digital channels straight from my cable provider. Analog component-video capture cards are available, but they amount to overkill for this project: They run a thousand dollars and are designed for high-end video production.

To capture high-definition footage from your own video camera, stay digital with USB or FireWire. Antenna type and position will determine your channels. Look for one that advertises digital reception, and try aiming in different directions while testing stations.

**Sound card:** Dedicated audio cards aren't essential anymore. Sound processing is rarely taxing enough to slow down a modern system, so I didn't use any add-



**WHAT WOULD** a high-definition computer system be without a Blu-ray Disc drive installed? The Pioneer BDC-2202 comes equipped with a SATA interface (see inset), just as your internal hard drive does.

on card for my project. Besides, Vista's rewritten audio architecture takes even less advantage of sound cards than Windows XP did. Unless you're building a recording studio or need specialized audio ports that aren't built into the motherboard you bought, skip the sound card altogether and save yourself a chunk of change.

**Input device:** If you are planning to use your PC with your home entertainment system, a Media Center remote is a must. You'll want something to control mouse movement and input key commands. I like to have a full-on wireless keyboard and gyroscopic mouse nearby to handle extensive input. Alternatively, you can purchase home-theater-designed devices that fill all of these roles. For that universal approach, I picked the Logitech diNovo Mini Keyboard. This Bluetooth remote takes care of mousing with its trackpad, and the thumb-friendly keypad works well

for entering URLs. But whatever input device you choose, make sure that it uses RF (radio frequency) commands instead of IR (infrared). RF can work from several rooms away, while IR requires a short, direct path to the PC.

**Display:** Resolution and aspect ratio are critical factors in picking a monitor. For a living room, be sure to get one that's natively shaped in a 16:9 rectangle, to match the aspect ratio of HD video. (A work-and-play office monitor might have a standard 4:3 shape.) And pick a resolution that's at least 1920 by 1080 pixels (1080p).

Both LCD and plasma screens look great, though some plasma displays present brighter colors in exchange for higher cost.

I'm going to be plugging my system directly into my existing HDTV, but the 27-inch Samsung SyncMaster 275T makes a good desktop alternative because it includes a variety of inputs for analog and digital connec-

tions. Confirm, though, that your display—like this one—supports HDCP for Blu-ray Disc and other video.

**Software:** I based my system on Vista Home Premium (\$260) because Media Center comes bundled with that package (as well as with the Ultimate edition). If you can find a copy of Windows XP Media Center Edition, that older OS makes a good alternative, but it doesn't include the same native HD support, built-in MPEG-2 decoder, and overhauled interface as Vista's version.

Unfortunately, neither OS allows Blu-ray Disc playback in Media Center or Windows Media Player. Your Blu-ray drive should ship with software; but if it doesn't, check out Nero 8 Ultra Edition.

Once you have your high-def PC system up and running, add it to your home entertainment center or set it up on your desktop to watch and edit movies, record your favorite shows, play your music, and more.



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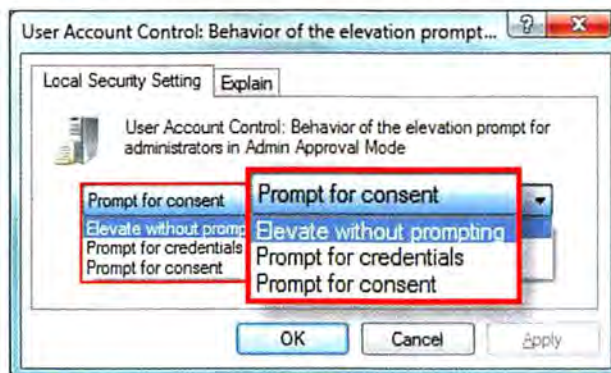


## Make Vista's User Account Control Less Annoying

WINDOWS VISTA'S USER Account Control feature is a constant annoyance for many users, but turning it off entirely can leave your system vulnerable to online threats. Fortunately, you can do a bit of fine-tuning via the Group Policy Object Editor to disable the most irritating parts of this feature without ditching it altogether.

Here's how to tweak the appropriate settings in this configuration tool:

Click **Start**, type **gpedit.msc**, press **<Enter>**, and then click through the UAC prompt. In the left pane, find **Local Computer Policy\Computer Configuration\Windows Settings\Security Settings\Local Policies\Security Options**. Now with



**FINE-TUNE YOUR USER** Account Control interactions by adjusting the UAC settings in the Group Policy Object Editor.

**Security Options** selected in the left pane, look for 'User Account Control options' on the right.

To retain the benefit of UAC, leave it turned on but set it to stop prompting you. Double-click **User**

**Account Control: Behavior of the elevation prompt for administrators in Admin Approval Mode**. Choose **Elevate without prompting**, and click **OK** (see the screen shot above). A pop-up will complain that UAC is not on; ignore it.

You can also suppress UAC prompts entirely. It's not as safe as the default settings, but it's more peaceful.

Vista Home Premium does not have the Group Policy Object Editor. To make the change in that version, back up your system's Registry by following the instructions at [find.pcworld.com/60415](http://find.pcworld.com/60415). Then click **Start**, type **regedit**, and press **<Enter>**. In the left pane, select **HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System**. In the right pane, double-click **ConsentPromptBehaviorAdmin**. Change the Value to **0** and click **OK**. You should see the effect immediately.

—Scott Dunn

### ANSWER LINE

### SEND QUESTIONS TO ANSWER@PCWORLD.COM

## How come Windows can't see my USB drive?

bloto, PC World forums

WINDOWS MAY BE turning a blind eye to your external drive for several reasons. First, you should figure out if the problem is with that particular drive or port. Try plugging the drive into another USB port—preferably one on the other side of the computer. Some ports (usually the front ones on desktops) can be more finicky than others. Next, try the drive in another PC, or another drive in the same PC. These tests will tell you if you have a bad drive (which you can replace), a reasonable workaround (use another port), or a real problem.

If it's a real problem, try uninstalling and reinstalling the driver for that drive. USB storage drivers are very easy to install because they're built into the drives themselves. Here's what to do:

1. Connect the USB drive.
2. In XP, select **Start>Programs**, right-click **My Computer**, and select **Properties**. Click the **Hardware** tab, then **Device Manager**. In Vista, click **Start**, type **device manager**, and press **<Enter>**.



**IF WINDOWS CAN'T** see a USB drive, uninstall it via Device Manager, unplug, and replug.

3. Find the drive under 'Disk drives'.
4. Right-click the drive and select **Uninstall**. Confirm by clicking **OK**.
5. The final step: Unplug the USB drive, and then plug it in again. The drivers will reinstall automatically.

Vista has its own USB problem that keeps it from recognizing drives under certain conditions—for instance, if your PC has been in sleep or hibernation mode. Microsoft released a patch last October, update number KB941600. Even if your PC is set to receive automatic updates, it may not have received that one.

You can read more about the patch at [find.pcworld.com/60615](http://find.pcworld.com/60615), and you can download the 32-bit version at [find.pcworld.com/60616](http://find.pcworld.com/60616).

Unfortunately, this is one of those updates that require validation (don't we all), so it forces you to accept Windows Genuine Advantage if you haven't done so already.

If, when you try to install the update, it tells you that it 'does not apply to your system', then you already have the update installed.

My thanks to the many people at PC World's Answer Line forum for the answers they offered when bloto first posted this question.

—Lincoln Spector



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## Speed Up Your Broadband Browsing Experience

EVEN IF YOU'RE spending top dollar for high-speed Internet service, you may not be receiving the performance you expect. Make sure that you have the latest modem your ISP offers. You can often get the company to send a newer one just by making a quick phone call, though some ISPs will ask you to renew your service contract for another year before doing so.

For optimizing network performance in XP or Vista, we like TotalIdea Software's Tweak-XP Pro Premium ([find.pcworld.com/60620](http://find.pcworld.com/60620)) and TweakVI Premium ([find.pcworld.com/60621](http://find.pcworld.com/60621)). Both apps do the job without requiring Registry editing or

accessing hidden Windows settings. Both packages include dozens of tweaks in addition to network and browser adjustments. Network Magic Pro ([find.pcworld.com/60619](http://find.pcworld.com/60619)) also optimizes.

System-level optimization is less important in Vista than in XP, since Vista tunes your TCP stack dynamically (TCP is a data-exchange protocol). Vista users can frequently get away with optimizing just specific applications, especially their Web browsers. To speed up Firefox page displays, try



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Firetune ([find.pcworld.com/60419](http://find.pcworld.com/60419)) or Fasterfox ([find.pcworld.com/60420](http://find.pcworld.com/60420)). Both utilities are free and easy. Fasterfox adds a few more customization options for expert users. Both tweak low-level settings such as cache memory capacity, max-

imum simultaneous connections, and "pipelining" (handling multiple data requests simultaneously).

Frequent downloaders can save time with a download manager such as Download Accelerator Plus ([find.pcworld.com/60421](http://find.pcworld.com/60421)), which manages the

entire download process, creates multiple simultaneous download links, and then puts the file together afterward. Just click a download; the program does the rest. It integrates well with Internet Explorer and Firefox.

—Becky Waring

## Shoot Better Video With Any Camcorder

WHETHER YOU SHOOT your home movies with a high-end rig or a bargain camcorder, it's your camera skills—not solely your equipment—that will make your film a masterpiece. So when you roll 'em, follow these tips to avoid amateur mistakes and make your video look its very best.

- **Use a tripod whenever possible:** Shaky-cam video gets annoying fast, as anyone who has sat through the motion-sickness-inducing *Cliverfield* can attest. If you're shooting on the fly (or on the run), do your best to hold the camera rock-steady. Edit out overly jerky camera swings later.

- **Use a microphone (again, whenever possible):** Don't

underestimate the importance of good audio; it's just as critical as the video. If you're stuck with your camera's built-in microphone, so be it. But many camcorders support external microphones, which will produce vastly superior audio.

- **Avoid dark rooms:** Unless you have high-grade video equipment, poor lighting will make your video look grainy. Shoot in the brightest possible environment. If you must shoot in low light, attach a lamp to your camera's accessory shoe.

- **Use zoom sparingly:** Zoom shots, especially with digital zoom, tend to look amateurish because, as you increase the magnification, the camera merely enlarges the cen-

**THE \$80 SIMA Ultra Bright Video Light** attaches to your camera's accessory shoe to illuminate dim environments.

ter portion of the image, resulting in fuzzier-looking video. If you need to get closer, move your feet.

- **Skip the special effects—for now:** Most camcorders, and even some digital cameras, offer special-effects filters such as sepia and "old movie." Better you should start with pristine color video and then add effects later in your editing software.

- **Remember to shoot b-roll:** B-roll is supplemental footage that you splice into your primary footage to help move the story forward or provide context for the action. For



instance, if you're filming a soccer game, you might take shots of parents cheering on the sidelines, a staged ball flying into the goal, just the players' feet, and so on. When the time comes to edit, you can insert these shots to make your video more interesting.

—Rick Broida





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## Add Beautiful Blue Skies to Your Photos

YOU MIGHT HAVE noticed that the sky in your digital photos is washed out and a little pale most of the time. That look is not your fault—but it's not really your camera's fault, either.

In typical photos, the most important element in the scene is the foreground, so your camera's automatic exposure system tries to ensure that the foreground looks good. The sky is usually a lot brighter than your subject, so it ends up overexposed and drained of color.

My favorite way to solve this problem is by "multiply" the sky using photo editing software.

Find a shot with a pale blue sky and open it in Adobe Photoshop Elements (find [pcworld.com/60665](http://pcworld.com/60665)). Select the sky using the Magic Wand tool. In the Options Palette at the top of the screen, set Tolerance to 30 and click *Add to Selection*. Now click in the middle of the sky so selection marks appear. Click a few more times until you've selected the whole sky, being careful not to grab unrelated parts of the picture. Copy the sky to the clipboard by choosing *Edit•Copy* from the menu.

Next, choose *Edit•Paste*, and a second copy of the sky will appear in the Layers Pal-



USING THE 'MULTIPLY' blending mode in Photoshop Elements, you can add a dramatic feeling to pale, lifeless-looking skies.

ette. You're ready to try the "multiply" effect. In the Layers Palette, set the Blend Mode to *Multiply*.

The colors in your sky will deepen. If that isn't enough of a change to suit you, don't worry. Here's where your artistic judgment comes in: Because the sky is already copied into your clipboard,

you can continue to paste new layers into your image until you get the deep and colorful effect you're looking for. If the sky becomes too dark, you can use the opacity slider to reduce the effect. Go to [find.pcworld.com/60623](http://find.pcworld.com/60623) to see my "before" and "after" photos.

—Dave Johnson

### ANSWER LINE

### SEND QUESTIONS TO ANSWER@PCWORLD.COM

## One of my applications takes forever to load. Why?

c370872, PC World forums

SOME PROGRAMS—SUCH AS Adobe's Photoshop Elements—just load slowly, and you can't do anything about it. Ask around and check online forums to determine if your software is one of those. If it is, your options are simple: Replace it with a faster application, or learn to live with it. But if you find that you're the only person with the problem, uninstalling and reinstalling the offending program might help. Simply uninstalling and reinstalling may not be enough, though, because the uninstall routines that come with most programs seldom remove everything they should.

To thoroughly remove an application, you need to uninstall it, delete leftover files that the uninstaller leaves behind, and then clean the Registry. Revo Uninstaller ([find.pcworld.com/60617](http://find.pcworld.com/60617)) does just that. It doesn't get everything, even in Advanced mode, but it cleans out the important stuff.

If an uninstall and reinstall doesn't help, look for a conflict with another program—most

likely one that runs automatically at boot-up. Select *Start•Run*, type *msconfig*, press *<Enter>*, and click the *Startup* tab for a list of all such autorun programs. Look for anything you don't need, and try unchecking it. Then reboot and see if that solved your problem.

Or you can take the extreme approach:

First, create a restore point. In XP, select *Start•All Programs•Accessories•System Tools•System Restore*; click *Create a restore point*; and follow the wizard. In Vista, click *Start*, type *sysdm.cpl*, and press *<Enter>*. Click the *System Protection* tab, then click *Create*.

Go to *msconfig*'s *Startup* tab, and uncheck everything.

Reboot and try the running the program again.

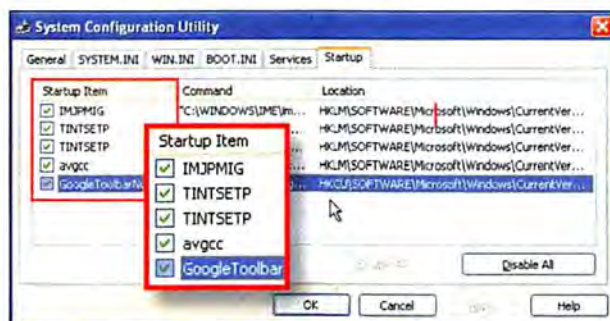
If that corrects the problem, return to *msconfig* and recheck

half of the autorun programs. Reboot and try again.

Whether that fixes the problem or not, it will cut in half the number of autostarters that you must test. By a similar process of elimination, you can halve the number of suspects again by unchecking more apps.

Continue until you are down to the one autostarting program that's causing the problem.

—Lincoln Spector



THE STARTUP PROGRAMS menu lets you enable and disable apps that launch on boot to help you troubleshoot your PC's slowdowns.



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## STEVE BASS'S HASSLE-FREE PC

### Three Easy Fixes for Windows Annoyances

Restore Windows' picture viewer, hibernate your PC instantly, and turn off indexing to crank up your system's performance.

OVERHAULING THE STOCK utilities in Windows can make your system faster, smarter, and easier to use. But some downloads do more harm than good. Here's how to resurrect your picture viewer if a third-party one trashed it. Plus, I'll give you a one-click hibernation hack and two useful speed-boosting tips.

#### Picture Viewer Gone Missing

**The Hassle:** I installed a free image viewer, and it was awful. I uninstalled it, but now the viewer that came with XP has vanished. What can I do to get it back?

**The Fix:** You're talking about XP's Windows Picture and Fax Viewer, and it's handier—and more versatile—than most people think. Check out Scott Dunn's "Windows Tips: Windows' Hidden Image Viewer" for cool tricks ([find.pcworld.com/60428](http://find.pcworld.com/60428)).

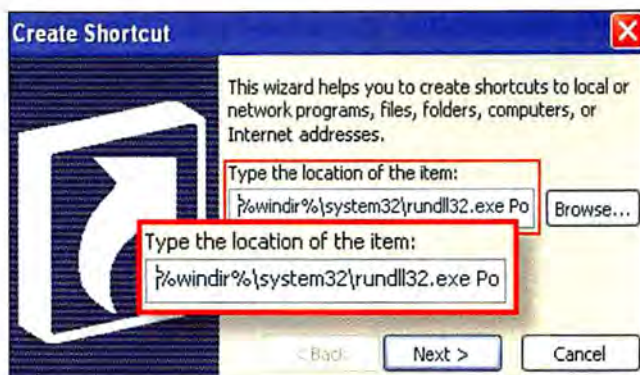
Back to your dilemma: You'll need to re-register the viewer. From the Start menu, choose *Run*, type `regsvr32 %windir%\system32\shimgvw.dll`, and click *OK*.

If that doesn't do it, open *My Computer*, select *Tools*•*Folder Options*, and choose the *File Types* tab. Depending on your programs, you may find a pretty long list. Scroll to a file association that you want to change, and select it. (Start with BMP, GIF, JPEG, and JPG; do each one individually.) Click the *Change* button, browse to *Windows Picture and Fax Viewer*, and click *OK*.

#### TOOL OF THE MONTH

### Speed Up Your Apps With Actual Booster

I'M A SUCKER for any free utility that claims to speed up my system, so I risked hosing my PC and used Actual Booster ([find.pcworld.com/60431](http://find.pcworld.com/60431)) for a month. Windows uses priority levels to determine how much CPU time an application gets (the default is 'normal'). Actual Booster automatically sets the priority level of the program you're using to full blast. One thing to remember, though, is that when you're multitasking, setting the priority to 'high' on one application takes processor time from those in the background. Also, if you have a brand-new, super-duper, quad-core PC, Actual Booster might not do much good. Yet on slower computers, and especially my dog-tired old notebook, I can see a big difference. One drawback: On some PCs, Actual Booster causes the mouse to stumble.



IN LESS THAN a minute, you can stick a Hibernate button on your desktop to put your system to sleep instantly.

#### Who's Got the Hibernate Button?

**The Hassle:** When my buddy wants to turn off his PC, a Hibernate button appears next to Standby, Turn Off, and Restart in the Turn Off Computer screen. How did he do it? I want one!

**The Fix:** Ready to jump through hoops? First read Microsoft's article KB893056 ([find.pcworld.com/60425](http://find.pcworld.com/60425)); afterward, request the XP hot fix ([find.pcworld.com/60426](http://find.pcworld.com/60426)), and then fiddle with the Registry (which you've backed up in advance, of course).

A quicker, cooler way is to stick a Hibernate icon on your desktop, avoiding the Start menu altogether. First, make sure that Hibernate is enabled: In Control Panel, click *Power Options*, choose the *Hibernate* tab, select *Enable hibernate support*, and click *OK*. Now from the desktop, right-click, choose *New*•*Shortcut*, type `%windir%\system32\rundll32.exe PowrProf.dll, SetSuspendState` in the 'Type the location of the item:' field, and click *Next*. Type **Hibernate** and click *Finish*. Finally, right-click your new *Hibernate* shortcut, select *Properties* from the drop-down menu, choose *Change icon*, and browse to my *Hibernate* icon (which you can download from [find.pcworld.com/60607](http://find.pcworld.com/60607) by right-clicking the icon and choosing *Save As* from the drop-down menu).

Learn more about shutdown states in the article "Gunk Busters!" ([find.pcworld.com/60427](http://find.pcworld.com/60427); scroll down to "Standby or Hibernate?").

#### Better Performance—And Desktop Searching

**The Hassle:** Windows Vista's Indexer bogs down system performance as it constantly catalogs the contents of my hard drive.

**The Fix:** Indexing in Vista is almost as worthless as it was in XP. It takes a big gulp of resources and slows down your system. So I say disable it. From *Add/Remove Programs*, click *Add/Remove Windows Components* in the left panel, deselect *Indexing services*, and click *Next*. Now, for a replacement, grab a copy of a great, free searching tool, Copernic Desktop Search (read about Copernic in "Three Free Desktop Tools" at [find.pcworld.com/60429](http://find.pcworld.com/60429); download it from [find.pcworld.com/57505](http://find.pcworld.com/57505)). ●



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## Reality Check: Kissing My Landline Goodbye

WAY BEFORE CORDLESS phones, a 25-foot wire running from the wall to the handset cost me several dollars—every month. Back then, you rented your phone from Ma Bell. If you wanted a longer cable, you rented that too.

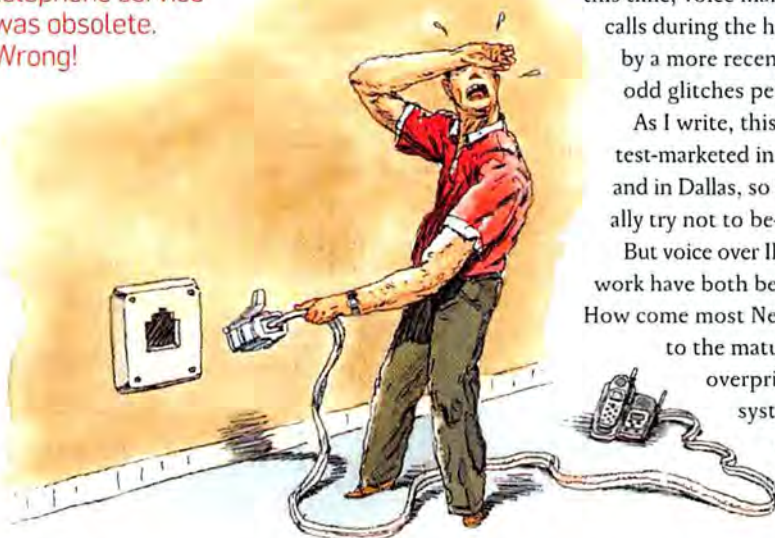
Today, voice options run from hollering down the hall to instant-messaging around the world. But force of habit kept me paying an outrageous \$102 a month to Qwest, my local telco, for two landlines and services like call waiting that former monopolists still wildly overcharge for.

Every time I was on the verge of convincing myself to sign up for cheap Internet-based phone services, something would dissuade me—a Skype convert's garbled calls, a Vonage customer's lament about an all-day service outage, the wails of a friend whose cut-rate phone provider had gone bust.

But T-Mobile recently enticed my inner cheapskate with something that goes by the ludicrous name HotSpot @Home Talk Forever Home Phone. First you buy a special \$50 Linksys wireless-G four-port router with two RJ-11 phone jacks that can hook up to standard home phones. A \$35-per-line activation fee gets you a SIM card that goes into the router. After that, each line gives you unlimited calling within the United States for \$10 a month plus \$3.50 or so in taxes and fees.

Drawbacks? Some services that other Net-phone providers offer, like Web-based voice mail and the ability to change call-forwarding remotely, aren't available. Placing an international call is pricey. Faxing doesn't work. Each line requires a two-year contract with a \$200 early-termination fee, and you have to pay T-Mobile at least \$50 per month for wireless to qualify for landlines, a sneaky way of making you a stickier T-Mobile customer. And of course, if you lose your Net connection, you're out of luck.

**I thought old-school telephone service was obsolete. Wrong!**



Still, I plunked down my Visa card and took the new router home. Calls sounded okay. When voice mail came in, my cordless phones' message-waiting indicators lit up. At one point, I had to reboot the router to get dial tones back, but the incoming calls went to voice mail anyway. I was so smitten with the prospect of saving \$850 in the first year that I decided to move my old numbers to the service.

Not so easy. To cancel the transfer freeze I'd imposed ages ago when a shady long-distance provider hijacked my lines, I waited on hold for half an hour with Qwest. A couple of days later, the company mailed me two messages confirming service changes that I hadn't ordered. My final call to sort things out made me happy to be leaving.

Transfer Day brought a brief outage that required a call to T-Mobile. Then dial tones disappeared again, though rebooting the router again fixed things. But when I forwarded calls to my cell phone, some of them never made it there, and voice mail ended up in the wrong inbox. And my accountant sent me a frantic e-mail wondering why he was getting only a fast busy signal from my old phone number.

Counting the value of my time, switching to this service may end up being a dubious bargain. I have now spent several hours conferring with T-Mobile. A beta version of new router software was supposed to cure the reboot problem, but it happened again, and this time, voice mail did not pick up calls during the hang. That was fixed by a more recent beta, but other odd glitches persist.

As I write, this program is being test-marketed in Seattle (where I am) and in Dallas, so I've been what I usually try not to be—an early adopter.

But voice over IP and T-Mobile's network have both been around for years. How come most Net-based alternatives to the mature and reliable but overpriced landline phone system are still clever-seeming upstarts you can't quite count on? ●



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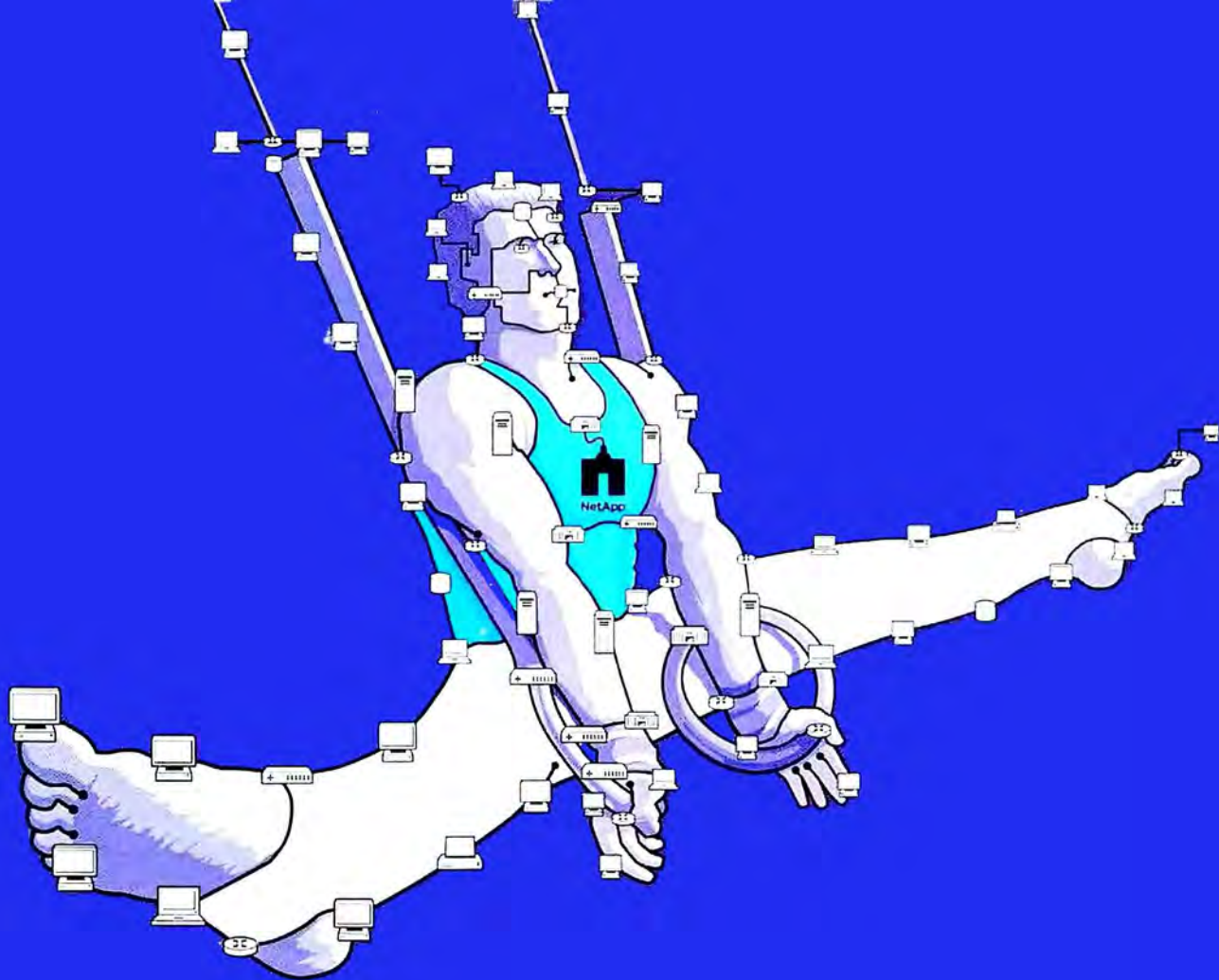
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