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Give the gift of tech this holiday season! After you've perused our holiday picks in print, surf on over to go.pcmag.com/giftguide to check out even more of our favorite technology products. In this expansive gift guide, we have Daily Gift Ideas, product comparisons, and even guides to our favorite Black Friday shopping sites, tech bargains, and last-minute gift ideas.

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FIRST WORD LANCE ULANOFF

Thank You, Jack Kilby

More than many people, I owe Mr. Jack Kilby a world of thanks. Without his working vacation back in the summer of 1958, I would not be here, serving as editor-in-chief of the PCMag Network and writing this column. Without his flash of brilliance, I might still be typing my stories on a typewriter or, at least, on something much larger and far less elegant than the Lenovo notebook PC that fits in my lap. And I'd probably still be writing about school boards, local crime, and the latest strawberry fair.

Kilby's great invention—cooked up when he was a new employee at Texas Instruments—built on the near-decade-old innovation of the transistor and created the first integrated circuit. His working model was no bigger than the glass slide it was affixed to, but it worked, and it laid the foundation for virtually every computer and smart device we use today.

The genius of Kilby's accomplishment was not its complexity. Instead, it was the simplification of a difficult problem: overcoming the need for a mass of wires to connect every component to every other component within any kind of circuitry (this problem was also known as “the tyranny of numbers”).

As Texas Instruments recounts it, Kilby's design did more with less. All he needed was some semiconductor material (germanium), wires, and transistors. Initially dismissed (until Kilby built the first pocket calculator from it), that little bit of circuitry magic eventually got smaller and smaller, and the number of transistors used in technology became greater and greater.

Ever since Kilby, who died in 2005, figured out the basic building blocks of integrated circuits, progress and innovation have largely built upon that original invention. (Robert Noyce of Fairchild Semiconductor—later a cofounder of Intel—gets credit for putting the circuit in the now-standard silicon, rather than germanium.)

The Australian Computer Society's *Information Age* magazine's recent list of

Top 50 Innovators, which includes industry luminaries like Sergey Brin, Steve Jobs (but not his engineering partner, Apple cofounder Steve Wozniak), Bill Gates, Gordon Moore, Douglas Engelbart, and Tim Berners-Lee, lists Kilby at No. 1 and declares, “Nothing else on this list could exist without the underpinning of the integrated circuit.”

I agree, and would go even further. I'd hesitate to call any of the gadgets and PCs

enmeshed with living organisms. Even so, they'll also probably have to mimic basic integrated circuitry to work as we expect them to.

There are things I want to see, like sentient robots, light-speed space travel, teleportation, the ability to grow and shrink objects at will, and handheld ray guns—all ideas straight out of science fiction. Yet they're no less attractive for being rooted in sci-fi. If inventors, technologists, and the

The genius of Kilby's accomplishment was the simplification of a difficult problem. His invention laid the foundation for every computer, gadget, and entertainment device we use today.

(yes, including Macs), digital cameras, and online products and services built on this one idea breakthroughs. For example, the entertainment revolutions we're enjoying today—such as HDTVs, portable media players, and optical discs that can store high-quality, interactive entertainment—are, just like everything else, indebted to Kilby's original idea. You could argue that we haven't seen a technology advancement of that magnitude since the summer of '58. (Along with the “solid circuit made of germanium,” Kilby also patented the portable electronic calculator and a thermal printer for use with data terminals. In all, he was awarded nearly 60 patents.)

So as we mark the 50th anniversary of this flash of brilliance, I wonder what new building blocks will take us to the next level and beyond. Nanotechnology is a likely candidate, though making circuitry at the molecular level still seems to replicate what Kilby did on a larger scale.

Organic electronics is the most promising innovation: Imagine circuit boards that can grow themselves and even become

assorted geniuses scattered throughout the world were to take Jack Kilby's approach, they'd look for the simplest solutions to these very complex ideas.

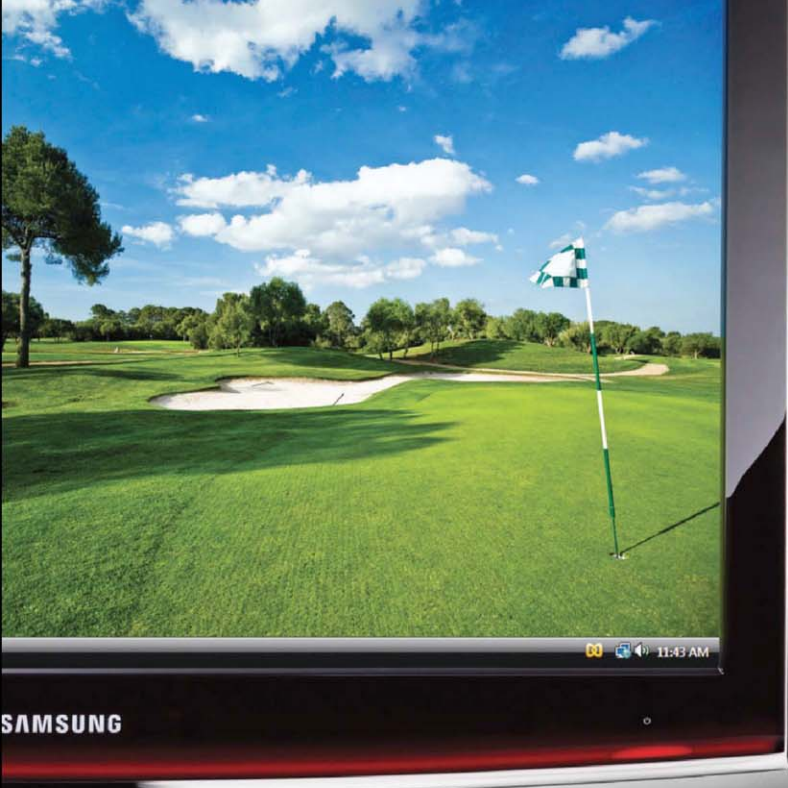
Oh, and they'd skip vacation.

In This Issue

All year long, we've told you which products—in a variety of categories—you should buy or avoid. However, even as we rate and review these countless gadgets, software, and services, a select number stand out. That's right, there are products that we know rise above all others and are simply the best.

That's why I love this issue. We dispense with an equivocation and tell you the products that had us from “hello.” Coincidentally, many of them are also perfect gifts for the fast-approaching holiday season. What wonderful serendipity!

TALK TO THE CHIEF You can contact Lance at Lance_Ulanoff@ziffdavis.com. For more of his columns, go to go.pcmag.com/ulanoff.



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Another Day, Another Crisis?

The Common Denominator in Performance Nightmares

Just Another Day at the Office

You've probably had it happen, and there's nothing quite like it. First thing Monday morning, a "MUST be handled before noon!" list of emergencies hits you in the face:

- The sales manager is squawking because CRM database is slow
- Accounting is nagging because email is slow
- The NAS server is averaging unacceptably high counts of queued disk I/Os
- You're getting constant poor performance alerts from the SAN
- Backups have not been completing during the backup window

These nagging, ulcer-creating problems are also the subject of several emails from the CFO because, on top of being bad for company production, in this time of economic uncertainty they're also bad for business. Work is being slowed down and the company is losing money.

The Culprit

The common hardware denominator to all these crises is the hard drive—the slowest link in a computer system. If the data on a hard drive is fragmented, that already dragging weakest link becomes agonizingly slower.

With frenetic requirements for continuous data access, enormous files and huge disk capacities, fragmentation is worse than ever; files in hundreds or even thousands of fragments aren't at all uncommon. Brett Taylor, of Van Wert Medical Services, discovered just how bad it can get. "Our electronic medical records server is a Microsoft® SQL Server® and one day it came to a halt," he says. "I did everything: ran spyware software, deleted numerous temp files, ran Windows® update, etc. but nothing would allow the server to run. It turned out that the hard drive was horribly fragmented."

Craig Merchant of Pace Engineering, San Francisco, discovered very similar problems. "I get a huge amount of fragmentation when I run multiple virtual machines on my system using VMware®," he reports. "I've had as much



as 20% fragmentation that the Windows defrag utility couldn't get rid of. In my experience, virtual machines fragment their disks as much as real machines. But Windows systems running VMware tend to have extreme fragmentation problems, particularly when running multiple VMs."

Making Mondays Go Away

Making the right defragmentation technology choice in today's frantic fragmentation environment is vital. Scheduled defragmentation has become a problem due to the IT hours required to schedule defragmentation and the downtime required for the defragmenter to run. But worst of all, scheduled defragmentation is no longer fully addressing fragmentation.

The only solution that stands up to today's escalating fragmentation is Diskeeper®. Diskeeper's proprietary InvisiTasking® technology makes for completely automatic, invisible defragmentation. Because it utilizes otherwise idle resources, it requires absolutely no scheduling, freeing up IT time for more important tasks. There is never a negative performance hit during defragmentation, and system performance and reliability are consistently maximized.

Reliability and Performance Issues Become Nonexistent

Mike Driest, Network/Systems Administrator for Industrial Control Repair in Warren, Michigan, has found Diskeeper to be the only solution.

"Automatic disk defragmentation for a server is like oil for the engine in your car," he says. "One of the most useful features about Diskeeper, when using it on our 20+ servers, is the automatic defragmenting with InvisiTasking."

Diskeeper helps all of our servers (Domain Controllers, File, Exchange, SQL, Web, etc.) perform at their very best. Reliability and performance issues relating to a lack of defragmentation do not exist in our environment."

Diskeeper has proven the solution for Andrew Wise, Senior Network Engineer at Datacore Marketing in Westwood, Kansas as well. "We run Diskeeper primarily on our SQL database servers with Fibre Channel SAN connectivity," he says. "It keeps the database and log files defragmented at the OS level to reduce the I/O on our SAN. After installing Diskeeper and doing a full defrag, we noticed around 10-15% reduction in the amount of I/O generated and in the amount of time it took for the SAN to service each request. We are a Microsoft SQL Server database shop and we process terabytes of SQL data on a daily basis, so any reduction in the amount of time it takes to do that processing save us money."

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FeedBack

Are Macs Really PCs? The Debate Continues

Lance, you do realize you have stepped into a firestorm with your "Macs Are PCs, Dammit!" First Word column (October, page 9). While I am a "Mac person" at home (PC at work), I do read *PC Magazine* on a regular basis. The magazine is clearly aimed at Windows users with minimal content geared toward Mac owners. If you really want to put your money where your editorial is, you would significantly increase the amount of Mac content in *PC Magazine*. That would make people like me that much more excited about opening each monthly issue.—Steven Zweibel

Your rant about the Mac/PC terminology in the October issue was great. I have always wondered why people don't just

call them all "computers." However, I want to point out an inconsistency on page 100 of the same issue. In the digital camera buying guide, you have a sidebar on camera accessories. The write-up of the Eye-Fi Share says, "The card will automatically upload photos from your camera to your PC or Mac..."—Steve Oliver

In regard to Lance's October column, I can tell you that the original (and in my opinion still correct) name for the computational hardware you cover is "microcomputer." A "PC" is an IBM-branded microcomputer.

The successful arrogation of "PC" is a classic example of a company's, IBM in this case, not protecting its brand. It is akin to calling any xerographic copy a "xerox" copy, any facial tissue a "kleenex,"

or any cola drink a "coke." But the Coca-Cola Co. still fights the good fight to protect its brand; IBM has long since given up. Your editorial would have been better if you had started with the proper name, microcomputer, and then illustrated how this got corrupted into "PC" for non-IBM brands.—Dwight Long

Dude, get over yourself. I've been at this computer gig for over 15 years, and it is a common distinction to make. The root of this nomenclature is in the original home computers; we have the IBM Personal Computer, or "IBM PC," and the Apple Macintosh, or the "Mac," to distinguish between the two incompatible systems. The naming devolved as computers moved into the mainstream to be "PC" and "Mac." While the Apple hardware is, indeed, a personal computer, it is a Mac personal computer, and IBM doesn't even make PCs anymore. In conclusion: Using these terms separately is just a way to distinguish between them, and everybody understands that. I've never had anyone tell me that they thought a Mac was a mainframe or a super computer—at least not in the technical sense.—Michael Laudone

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Throw Win 98 Users a Bone

I've just read Lance Ulanoff's column "Resurrecting Windows 98" online, and I know that story rather well. I've taught people how to use Win 95 boxes, I've resurrected Win 98 boxes, and I've even fixed a Win 98 network for a nonprofit. And that's why I have insisted to every Microsoft user I can find that Microsoft, since it's no longer supporting the Win 9x family tree, should release as much of the source code as it can under a suitable license, such as the GPLv3. This is the way to maintain these legacy boxes. Because the world economy is looking much the worse for wear and because of all the features of Win 98 that Lance mentioned, Microsoft could use this as an opportunity to earn some much-needed brownie points with users.—Wesley Parish

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The Best Technologies of 2008

Our 25th annual Awards for Technical Excellence honor the top tech innovators, from mice to cloud computing.

Every year for 25 years, the editors and analysts at *PC Magazine* step back from product reviews to scrutinize the candidates for our annual Awards for Technical Excellence. We care not what's on the shelves but rather what's under the hood. After much debate, we've arrived at the 14 technologies that define innovation and push the industry to bring better products to market. They may not all be ready for prime time, but they're all worth your notice.

Computer hardware saw some significant advances this year. We applaud the

Intel Atom processor, which is not only the most energy-efficient processor Intel makes but which has also enabled the fast growth of the ultramobile PC (or netbook) market. And Microsoft could revolutionize the mouse with BlueTrack, which uses a bigger optic beam to make a more precise surface image, so a mouse can operate on everything from carpet to wood.

SanDisk and Toshiba also receive honors for developing the first commercial three-bit-per-cell (x3) NAND flash memory. It's a major breakthrough that will

make sure Moore's Law extends to memory for years to come.

Displays will get a boost soon, thanks to the DisplayLink DL-160, a promising new chip that will let you connect up to six monitors (each running at 1,600-by-1,200 resolution) to your Windows PC using a single USB port. We also awarded Qualcomm MEMS's mirasol, a new display technology for handhelds. Composed of tiny mirrors—two per pixel—that reflect ambient light, the very-low-power screen actually gets brighter in direct light outdoors.

2008 Awards for Technical Excellence Winners



Computing Hardware

- Intel Atom processor (above)
- Sandisk/Toshiba NAND flash memory
- Microsoft BlueTrack (below)



Display Technology

- Qualcomm mirasol (above)
- DisplayLink DL-160



Software/Games

- Symantec Norton Insight scanner (above)
- Microsoft Photosynth
- nVidia CUDA
- Spore (below)



Entertainment Technology

- Kleer KLR3012 Module (above)
- HDMI Consumer Electronics Control (CEC)
- Micro Four Thirds System



Cloud Computing

- Adobe Integrated Runtime (AIR) (above)
- Amazon Elastic Compute Cloud (EC2) (below)



Software and games also had a big year. Symantec's Norton Insight scanner compares software on your system against other users' PCs to determine if a program can be trusted. This cuts down scanning by as much as ten times the amount that older Symantec products (like Norton Internet Security 2008) used to do. Microsoft has taken photo viewing 3D with Photosynth. When you upload photos to the site, they're checked for overlap and soon you have a walk-through collage of your vacation.

If you've felt wasteful knowing your graphics processor isn't used to its full capabilities, rest easy: nVidia's CUDA technology uses parallel computing concepts to turn your graphics card into a multitasker that can assist your processor

with nongraphics applications. And we cannot overlook the contribution Spore has made to the world of gaming. This "massively single-player" online environment takes you through the struggle of evolution itself.

Entertainment technology had some exciting innovations as well. This year we salute the Kleer KLR3012 Module, a chip for wireless headphones that delivers clear, uncompressed sound over radio waves. And your home network may get even easier to control once HDMI Consumer Electronics Control (CEC) migrates to more devices. It lets one unit with an HDMI cable send instructions to other HDMI CEC devices it's connected with.

Camera lovers can look forward to the Micro Four Thirds System. Expect the full

capabilities of a Digital SLR in a body the size of a pocket point-and-shooter. Even the zoom lenses will be interchangeable between body styles.

Of course, we cannot talk about innovation without also looking at cloud computing, which has been growing by leaps and bounds. One big advance in 2008 was Adobe Integrated Runtime (AIR), which lets you install a runtime on multiple OSs, which in turn powers dedicated apps that can mimic Web 2.0 functions. And online retail giant Amazon gave us Elastic Compute Cloud (EC2), a virtual machine that runs Linux software now, and will reportedly be able to handle Windows apps by the time you read this. Instead of buying hardware, a virtual server could be in your company's future. —Eric Griffith

Technology's Top Unsolved Cybercrimes

The WANK Worm

(October 1989)
Possibly the first "hacker-tivist" (hacking activist) attack, the WANK (Worms Against Nuclear Killers) hit NASA offices in Greenbelt, Maryland, by running a banner across system computers as part of a protest to stop the launch of the plutonium-fueled, Jupiter-bound Galileo probe.

U.K. Ministry of Defense Satellite Hack (February 1999)
A small group of hackers traced to southern England

gained control of a MoD Skynet military satellite and signaled a security intrusion characterized by officials as "information warfare," in which an enemy attacks by disrupting military communications. In the end, the hackers managed to reprogram the control system before being discovered.

CD Universe Credit Card Breach (January 2000)
A blackmail scheme gone wrong, the posting of more than 300,000 credit card numbers by hacker Maxim on

a Web site entitled "The Maxus Credit Card Pipeline" has remained unsolved since early 2000. Maxim stole the credit card information by breaching CDUniverse.com; he or she then demanded \$100,000 from the Web site in exchange for destroying the data. While Maxim is believed to be from Eastern Europe, the case remains unsolved.

Military Source Code Stolen (December 2000)
If there's one thing you don't want in the wrong hands, it's

the source code that can control missile-guidance systems. In winter 2000, a hacker broke into government-contracted Exigent Software Technology and nabbed two-thirds of the code for Exigent's OS/COMET software, which is responsible for both missile and satellite guidance, from the Naval Research Lab in Washington. Officials followed the trail of the intruder, "Leaf," to the University of Kaiserslautern in Germany, but that's where the trail appears to end. —Caroline Iozzio

BEST OF OUR BLOGS



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BMW 7 Series, the World's Best Car?

BMW's 2009 7 Series stands as the new benchmark for technical and driving excellence among cars. I drove a prototype 7 Series over the summer on BMW's proving grounds in Miramas, France. BMW has significantly improved the car in at least a dozen ways you'll appreciate, including Internet access, improved iDrive, the industry's biggest and brightest LCD display, a night vision system, and side-view cameras—Bill Howard

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Calculate Your Storage in One Step

You might think that planning storage needs for a small business is as simple as buying a new hard drive. I wish it were. I recommend a simple rule of thumb using percentages: Whenever your hard drives are half full, mark the date. When they reach three fourths, find out how long it took to fill that quarter. Do this per hard drive, so you get an average, and you'll know when you need more.—Mario Morejon



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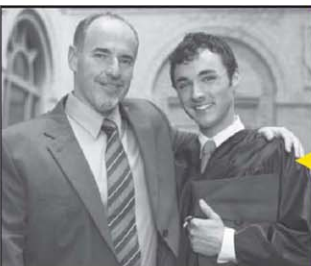
Back in the day, we had the original Lazer Tag, made by Worlds of Wonder. But now we have the Hasbro Lazer Tag Multiplayer Battle System (\$79.99), which comes with two pistols, two electronic sights, and two shotgun/rifle attachments, along with one game training module. Instead of relying on a separate sensor, a unit that registers scored shots is built right into each gun. The guns have three modes—Solo, Team 1, and Team 2—as well as a relatively loud "zapping" sound and simulated recoil.—Brian Bennett



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A Ball of Energy for Your Home

The Energy Ball might not look like a wind turbine at first glance, but in fact it is a highly efficient circular turbine that's perfect for residential homes. It makes use of the Venturi effect—the fluid pressure when a liquid that can't be compressed passes through a constricted part of a pipe. Using the Venturi principle, Energy Ball channels air "through its six blades and around its generator," according to Inhabitat. What's great about how the Energy Ball works is that it can generate energy even in low wind speeds. And the Energy Ball operates in relative silence.—Mariella Moon



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Technology's Whiz Kids

Five young innovators under 20 who could change the world.



TEEN PHENOMS (Left to right) Donny Ouyang, Catherine Cook, Andrew Sutherland, Sikander Porter-Gill, Charles Zhang

Donny Ouyang was a Neopets-addicted 12-year-old from Vancouver when he grabbed an HTML book from his father's shelf in the hope of finding a way to hack his favorite game. Instead of cracking into Neopets, Ouyang ended up schooling his friends in HTML and finding a career. In 2007, he founded Kinkarso Tech Ltd., a network of Web properties that includes LiveTVws and HostBright.net.

Young—and wealthy—entrepreneurs like Ouyang (now 16) are increasing in number. The Web has created a landscape of seemingly boundless opportunity for hungry young innovators. For example, in 2005, Skillman, New Jersey resident Catherine Cook, now 19, along with her brothers, Dave and Geoff, took \$250 and built myYearbook.com, a social network intended to replace traditional printed high school yearbooks. By May 2006, myYearbook broke the one-million-member mark. Now a sophomore at Georgetown University, Cook has no intention of leaving myYearbook behind.

"I can't ever see myself leaving the Web 2.0 world; everything else just seems so boring in comparison!" she says.

Andrew Sutherland, 18, from Albany, California, gave himself a crash course in Web app development a couple years ago and came up with an online tool called Quizlet for creating quizzes on the fly. Originally created to help him master French vocabulary, Quizlet is now available to the public, and Sutherland has confidence in its potential. "I think it can become a household name in the educational field," he says.

Aside from teens designing cool Web apps, there are also kids whose inventions could have a significant impact on environmental efforts. Sikander Porter-Gill, 17, from Gaithersburg, Maryland, won this year's Davidson Institute for Talent Development awards fellowship for developing a process that, in essence, can clean wastewater and produce methane, which can then be converted into natural gas. Another Davidson award winner, Charles Zhang, 17, from Rochester, Michigan, developed a mechanism to recharge batteries through mechanical vibrations—such as cars on a bridge or people walking up and down stairs. —Corinne Iozzio

Taking Down the Cyber-Fence

Congress is looking to crack down on a ring of stolen goods being sold online.

What do razor blades, baby formula, and batteries have in common? They are all hot commodities on Internet auction sites. Brick-and-mortar retailers, however, say that many of these goods are stolen from their stores and sold online, a problem they say requires Congress to regulate online auction sites more heavily.

"Companies like eBay should... no longer be able to hide behind the assertion that they are 'merely a platform' with little responsibility to supervise sellers on their site when they earn listing fees and commissions from each and every sale on their site," Joseph L. LaRocca, vice president of loss prevention at the National Retail Federation (NRF), told the House Judiciary subcommittee on Crime, Terrorism, and Homeland Security in a hearing.

Members have introduced two bills—H.R. 6491 and H.R. 6713—that would make it easier for retail stores to go after online auction sites they believe to be featuring items stolen from their stores, but neither bill has seen significant action.

LaRocca asserted that many online sellers peddling stolen goods are addicted to the high of making a sale.

"The Internet seems to be contributing to the creation of a brand-new type of retail thief: people who have never stolen before but are lured in by the convenience and anonymity of the Internet," he said.

However, Edward Torpoco, senior regulatory counsel for eBay, says that the e-commerce legislation is misdirected, that the Internet is not the only point of sale for these thieves.

"While some tech-savvy criminals are finding ways to abuse Internet technologies, most inventory loss, according to the retailers' own studies, is attributable to employee theft, administrative error, vendor fraud, and nonprofessional shoplifting," he says, adding that such legislation would place undue burden on Web businesses. Organized retail crime is costly, though: Walgreens averages \$300 million in losses of this type a year. —Chloe Albanesius

Watch TV on the Go—Your Way

With some helpful hardware and Web sites, you can watch your favorite shows anytime, anywhere.



It wasn't long ago that the best TV viewing that business travelers could hope for on the road was free HBO and ESPN on a junky hotel TV. Now on-the-go options for viewing your favorite shows are far, far more plentiful.

Most hotel rooms still don't have HDTVs, but high-def lovers have an alternative—courtesy of their laptop screen. Plug the (1) **Pinnacle Systems PCTV HD mini Stick** (\$119.99) into your notebook's USB port, and tune into over-the-air HD programming from local stations. The device comes with a high-gain antenna, remote control, and software that turns your laptop's hard drive into a DVR. (A \$129.99 Mac version is also available.) If you need to watch your hometown team in high-def, the (2) **Sling Media Slingbox PRO-HD** (\$299.99) lets you access live programming from your TV at home over the Internet—though you'll need a fast network connection for the best quality. If you have shows or movies loaded on your laptop, try streaming to the hotel TV with the (3) **AddLogix InternetVue 2020** (\$234.99).

You may also be able to satiate your television addiction on your cell phone. Of course, you can download and watch TV shows and movies on your Apple iPhone 3G (\$199 or \$299) via the iTunes Store, but it doesn't offer any live-

viewing options. For live TV on other phones, you may have a few choices, depending on your carrier. AT&T and Verizon both use **Qualcomm's MediaFLO** service, which beams ten broadcast and cable stations directly to a handful of compatible phones. AT&T calls it **AT&T Mobile TV** (\$15 or \$30 per month, depending on the plan selected), while Verizon offers it as **V Cast Mobile TV** (\$15 or \$25 per month). **Mobitv** (\$9.99 per month), which works with numerous phones and carriers, provides a streaming solution that offers more channels, but video quality isn't up to MediaFLO's high standards.

If you want to watch shows on your laptop, there is a wealth of online options. The highest-profile site, (4) **Hulu** (www.hulu.com), offers a large number of current episodes from shows on FOX, NBC, and Comedy Central, as well as older series. A Hulu competitor, (5) **Joost** (www.joost.com), features in-browser viewing of CBS, PBS, and Turner Broadcasting System programming, along with its own retro-show lineup (including the original *Star Trek*). (6) **Netflix** (www.netflix.com) has also bulked up its online video-streaming service for subscribers, recently adding new CBS and Disney Channel shows, as well as the movie catalog of cable channel Starz.—Sean Portnoy

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PROS Runs the Intel Atom platform. Weighs only 2.3 pounds. Very responsive mouse buttons. Well-priced with E-Value code.

CONS Keyboard is too small. Needs a bigger battery option. Limited to SSD hard drive option.

For more: go.pcmag.com/dellmini9

DELL INSPIRON MINI 9

Dell Joins the Netbook Fray

Once thought to be a dying breed, UMPCs (also known as netbooks) have hung around the laptop market and are finally gaining some momentum. More people are turning to inexpensive UMPCs as lightweight secondary laptops for Web surfing and e-mail. Recognizing this trend, Dell joins the game with the Inspiron Mini 9. Despite all the time Dell has had to develop a great product, the final result isn't quite enough to overtake the MSI Wind, our Editors' Choice in this category.

The Mini 9 is similar in build to its peers, measuring 6.8 by 9.2 by 1 inches (HWD) and weighing 2.3 pounds. Dell has chosen to keep the Mini 9's design simple, with a shiny black exterior and a black keyboard against the silver palm rests. The 8.9-inch screen is bright and nice to look at, if a bit small. And its keyboard (88 percent of full size) is smaller than most of its competition's. As for other features, the Mini 9 is on a par with its peers, with three USB ports, a four-in-one media card reader, VGA-out, an Ethernet port, and a 1.3-megapixel webcam. The one place Dell went awry was in using an 8GB solid-state drive (SSD) instead of a typical hard drive. Capacities for SSDs are still too low and

prices too high. On the other hand, the 1.6-GHz Intel Atom N270 is a great pick for this system, because it is adept at running Windows while keeping energy consumption down.

Because of storage limitations, I couldn't run our benchmark tests on this system, with the exception of the Windows Media Encoder tests: The Mini 9's score of 4 minutes 58 seconds just beat the MSI Wind's 5-minute time. And even though I couldn't run our battery rundown test, the 32-Wh (four-cell) battery is bigger than many others in its field (and should get you close to 3 hours).

Although the Mini 9 falls well short of the MSI Wind and the HP 2133 Mini-Note because it doesn't offer an extended battery or sufficiently large storage options, it is still a viable solution for those who don't want to lug a 5-to-6-pound laptop through airport security just to check e-mail, surf, and perform light Office tasks. —Cisco Cheng

Specs: 1.6-GHz Intel Atom N270; 1GB DDR2 SDRAM; 8GB SSD; 64MB Intel Graphics Media Accelerator 950; 8.9-inch, 1,024-by-600 display; Atheros 802.11g; 2.3 pounds (2.7 pounds travel); 3 USB ports; 32-Wh, 2.2-Ah, lithium ion battery; Windows XP Home Edition.

ALSO REVIEWED AT PCMAG.COM

ASUS EeePC 900
\$550 street

●●●●○

HP 2133 Mini-Note PC
\$749 direct

●●●●○

MSI Wind
\$480 street

●●●●○

RED denotes Editors' Choice.

INSIDE

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CYBERPOWER GAMER ULTRA SLI BASIC

A Rig for Rookie Gamers

If you're thinking of trying PC gaming but don't want to spend a fortune, check out this CyberPower system. It has some decent power and is suited for playing older (but still relevant) games like *Company of Heroes*, *Half Life 2*, and *Prey*. Be advised that it will probably stumble on new games, but if you want to play those, it has room to upgrade.

For example, there's room for half a dozen hard drives, and there are dual PCIe x16 graphics card slots, two more PCIe x1 card slots, and another pair of PCI card slots. The system does come with a reasonably powerful (600W) Cooler Master power supply, so it's ready for additional components.

The guts of the system include a midrange AMD Athlon X2 6000+ dual-core processor, 2GB of DDR2-800 memory, and a pair of 512MB nVidia GeForce 8600 GT graphics cards. These work together to give the system some decent performance numbers. It finished our Windows Media Encoder test in 1 minute 7 seconds (about 30 seconds slower than a quad-core system) and the Photoshop CS3 test in 46 seconds. As for gaming, it can load the newer DX10 games, but it can't play them well. Things improved when I loaded an older DX9 game. So if



Cyberpower Gamer Ultra SLI Basic

\$699 direct



PROS Dual graphics cards. Flashy exterior will appeal to young gamers. Nice price.

CONS Gaming performance not thrilling. Painted DVD bezel.

For more: go.pcmag.com/cyberpowerbasic

you're intrigued by the gaming culture (or have a young son or daughter begging for a gaming rig), the Gamer Ultra is a good choice.

—Joel Santo Domingo

Specs: 3.0-GHz AMD Athlon X2 6000+; 2GB 800-MHz DDR2 SDRAM; 320GB, 7,200-rpm SATA hard drive; two 512MB nVidia GeForce 8600 GT graphics cards; dual-layer DVD \pm RW drive; six USB 2.0 ports; Windows Vista Home Premium.

GETAC B300

Getac Will Make It to Hell and Back

The Getac B300 is built like a tank and can withstand practically anything you can throw at it. This system meets the military's MIL-SPEC-810F testing specifications, and while it might not have the cachet of the Panasonic Toughbook series, it's just as full-featured as any mainstream laptop.

The B300's frame is wrapped in a thick magnesium alloy, and the corners are protected by hard rubber. The hard drive, optical drive, battery bay, and all ports are shielded by durable covers. The full-size keyboard delivers a near-perfect typing experience, and the 13-inch widescreen has an extra-bright setting for outdoor viewing. Every 3G wireless capability—EV-DO, HSDPA, UMTS, EDGE—is an option, as well as a GPS module with an internal antenna. Support for Wi-Fi 802.11n and Bluetooth 2.0 is included.

The B300's 1.6-GHz Intel Core 2 Duo L7500 isn't as beefy as the chips used in other ruggedized laptops, so if you're running professional video-editing programs, CAD software, or 3D-intensive software, Dell or Panasonic systems might be a better fit. But the L7500 helps give the B300 an impressive battery life—6 hours 45 minutes on our tests. With a price tag of



GETAC B300

\$3,470 street



PROS Excellent typing experience. Fully rugged. Insanely long battery life. Multiple wireless options. Super-bright screen option. Ports galore.

CON Deep pockets required. Really heavy for a 13-inch form factor.

For more: go.pcmag.com/getac300

nearly \$3,500, this is obviously not for everyone. But it is one of the best and most complete fully rugged laptops on the market.—Cisco Cheng

Specs: 1.6-GHz Intel Core 2 Duo L7500; 2GB DDR2 SDRAM; 120GB, 5,400-rpm hard drive; Intel Graphics Media Accelerator X3100; 13.3-inch, 1,024-by-768 display; Intel Wi-Fi Link 4965AGN; 8.4 pounds (9.5 pounds travel); three USB ports; 87-Watt, 78-Ah lithium ion battery; Windows XP Pro.

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Dell Studio 17

\$1,868 direct



PROS WUXGA display. Stylish. Good battery life for this weight class. Abundant wireless options. Backlit keyboard. Color and IMD options bring flavor to the design.

CONS Trails the competition in expansion features. Lack of processor options for now. Graphics card is not very impressive.

For more: go.pcmag.com/dellstudio17



DELL STUDIO 17

Dell's Stylish 17-Inch Desktop Replacement

Dell is not known as a premier product designer, but it does a decent job with the design of its ultra-portable and mainstream laptops. Its 17-inch laptops, like the Inspiron 1720, are bulky, 10-pound machines that appeal mainly to hard-core users and gamers. Now Dell is bridging the gap between hard-core users and a more mainstream audience with the Studio 17—a cross between the Inspiron 1720 and the smaller, lighter XPS M1530. This system is chock-full of goodies, including a gorgeous 17-inch WUXGA display, but it's lacking a few key features needed to keep up with the competition.

For typing and navigation, the Studio 17 has a responsive keyboard, quiet mouse buttons, and something you see a lot of on 17-inch systems: a numeric keypad. Another cool feature is the keyboard's LED backlighting, much like that of the Apple MacBook Pro.

The Studio 17's features are solid for a media center, but they are not the best of breed. Although the five USB ports, HDMI-out, and twin speakers are admirable additions, the internal TV tuner and the eSATA port are a bit subpar compared with what's offered by its competition. Although the slot-loading Blu-ray drive is slick, it's also read-only, which means you can play Blu-ray discs, but you can burn only in standard def. The Studio 17 supports data networks like EV-DO and HSDPA, which apparently none of its competitors is offering in this form factor.

Despite running the same processor as the ASUS M70Sa-X2, the Studio 17 trailed that system on SYSmark scores—possibly because of 4GB of memory or the dual-hard-drive configuration on the ASUS. The Studio 17 showed better scores on the video encoding and CineBench R10 tests. But an underwhelming graphics card led to poor results on 3DMark06. Battery life, however, is more impressive: 3 hours 30 minutes on MobileMark. So in a field of stiff competition, the Studio 17 is certainly no slouch. But there are better alternatives out there. —Cisco Cheng

Specs: 2.5-GHz Intel Core 2 Duo T9300; 3GB DDR3 SDRAM; 320GB, 5,400-rpm hard drive; 256MB ATI Mobility Radeon HD 3650; 17-inch, 1920-by-1200 display; Dell 802.11n; 8.2 pounds (9.3 pounds travel); five USB ports; 85-W/h, 77-Ah lithium ion battery; Windows Vista Home Premium.

PERFORMANCE TESTS

▲ High scores are best.
▼ Low scores are best.
Bold type denotes first place.

Anti-aliasing/wraps/texture filtering ▶

	MOBILE- MARK 2007 ▲ trazim	SYSMARK 2007 ▲ OVERALL	3D- MARK06 ▲	MULTIMEDIA TESTS		
				WINDOWS MEDIA ENCODER ▼ min/csec	CINE- BENCH R10 ▲	PHOTO- SHOP CS3 ▼ min/csec
Dell Studio 17	3:30	126	3,682	1:06	5,203	0:34
Acer Aspire 6920G-6071*	3:42	92	3,962	1:31	3,466	0:48
Acer Aspire 8920G*	1:45	130	5,949	1:03	5,361	0:32
ASUS M70Sa-X2*	2:06	137	4,105	1:14	5,142	0:36
Gateway P-7811FX*	N/A	N/A	9,653	1:09	4,596	0:35

*Reported for comparison. RED denotes Editor's Choice. N/A—Not applicable: The product could not complete the test, or the test was limited.

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Exclusively at Best Buy®: the incredibly affordable Toshiba Qosmio® X305. Check it out, and let us help you assemble the perfect gaming package with all the right gear and best games under one roof. Learn more at <http://www.bestbuy.com/toshibagaming>



- 17" widescreen LCD display*
- Intel® Core™2 Duo Processor P7350
- NVIDIA® GeForce® 9700M GTS 512MB GDDR3
- 4GB DDR3 1066MHz memory
- 200GB 7200RPM hard drive

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RED indicates Editor's Choice.		PROS	CONS	BOTTOM LINE	SPECS
DESKTOPS					
	ZT Affinity 7225X1 Desktop PC \$750 list ★★★★☆	<ul style="list-style-type: none"> Moderately priced quad-core power Some room for expansion Good multimedia benchmark numbers 	<ul style="list-style-type: none"> Other PCs have many more features for only a bit more money 90-day trial subscription to Norton Internet Security Some creakware Boring looks Limited expansion 	Although this multimedia system isn't from one of the big players, it is worthy of a look, especially since it provides a bunch of performance for not a lot of money.	2.4-GHz Intel Core 2 Quad Q6600 processor; 4GB, 800-MHz DDR2 SDRAM; 500GB, 7,200-rpm SATA hard drive; 512MB ATI Radeon HD 3450 graphics; dual-layer DVD-RW drive; six USB 2.0 ports, Windows Vista Home Premium.
LAPTOPS					
	Toshiba Qosmio C55-Q002 \$1,549.99 list ★★★★☆	<ul style="list-style-type: none"> Secondary cell processor for quicker video editing Good graphics card Half a terabyte of storage Affordable Excellent speaker system 	<ul style="list-style-type: none"> Would like to see a higher-resolution display Cell processor effective only for certain tasks Gesture Controller is hard to master Heavier than its rivals 	This affordable media center laptop is made for video editors who aren't performance seekers or feature hounds.	2.0-GHz Intel Core 2 Duo P7350; Toshiba Quad Core HD Processor; 4GB DDR2 SDRAM; two 250GB, 5,400-rpm hard drives; 512MB nVidia GeForce 9600M GT graphics; 10.5 pounds; Windows Vista Home Premium 64-bit.
PRINTERS					
	Samsung CLP-315 \$300 street ★★★★☆	<ul style="list-style-type: none"> Color laser printing at a breakthrough price Small Reasonably high-quality output Vibrant color graphics 	<ul style="list-style-type: none"> Although text quality is good enough for most business purposes, it's a touch below par for a laser 	This personal color laser printer's small size, breakthrough low price, and eye-catching color make it the laser of choice.	Color laser; cost per page: 3 cents (mono), 15 cents (color); 150-sheet input capacity; 17 ppm monochrome, 4 ppm color; 9.6 by 15.3 by 12.3 inches (HWD); 24.3 pounds.
	Dell V305 All-in-One Printer \$133 direct ★★★★☆	<ul style="list-style-type: none"> Prints, scans, copies Scans to e-mail using your PC's e-mail program 	<ul style="list-style-type: none"> Slow Subpar text and photo quality for an inkjet 	Best reserved for a home or home office with minimal printing needs; this Dell AIO inkjet does the basics—prints, scans, and copies—moderately well.	AIO inkjet; one-pass color; 104-m1 flash memory card reader; flat-bed scanner; copier; 7 by 17.7 by 12.3 inches (HWD).
DISPLAYS					
	V7 D24W33 \$459 list ★★★★☆	<ul style="list-style-type: none"> Fast pixel response Highly adjustable stand Good small-text reproduction Reasonable price 	<ul style="list-style-type: none"> Limited multimedia connections Narrow vertical viewing angle So-so grayscale performance 	This versatile LCD monitor is a good choice for anyone looking to move up to a 24-inch widescreen display, as long as you can live with a weak vertical viewing angle.	24-inch LCD; 1,920-by-1,200 native resolution; analog VGA and HDMI inputs; 16:10 aspect ratio; embedded 2W speakers.
	Envision G2219W1 \$269.99 list ★★★★☆	<ul style="list-style-type: none"> Good light-grayscale reproduction Attractive design Affordable 	<ul style="list-style-type: none"> Weak dark-grayscale performance Narrow vertical viewing angle Lacks multimedia ports 	This affordable widescreen display may be short on features, but its overall performance and bargain price make it a good bet for general home and office use.	22-inch LCD; 1,680-by-1,050 native resolution; analog VGA and DVI-D inputs.
	BenQ V2400W \$499 list ★★★★☆	<ul style="list-style-type: none"> Sleek design Good text and color reproduction HDMI port 	<ul style="list-style-type: none"> Grayscale performance not up to par Narrow viewing angles Limited adjustability No DVI or HDMI cables 	With its curvy cabinet and sleek finish, this LCD has plenty of style, but it suffers from a few performance flaws.	24-inch home or small-office LCD; 1,920-by-1,200 native resolution; analog VGA, DVI-D, and HDMI inputs; 2 inches thick.
STORAGE					
	WD Caviar Black \$189 list ★★★★☆	<ul style="list-style-type: none"> Impressive areal density Excellent single drive performance Huge capacity 	<ul style="list-style-type: none"> Ill-suited for RAID 0 	This hard drive is one of the best 7,200-rpm models you can get, if you want to run one large, single drive.	Internal hard drive; 1-terabyte capacity; 7,200 rpm.
	SimpleTech Signature Mini Black Cherry \$179.99 list ★★★★☆	<ul style="list-style-type: none"> Meticulously sleek design Fast (manual) transfer performance Software has lots of extras Free 2GB online storage 	<ul style="list-style-type: none"> Somewhat slow transfer rates when using backup software 	A terrific value and strong performance overall make this slick external storage drive an ideal backup solution for anyone.	External hard drive; 120GB and 500GB capacities; 5,400 rpm.

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CERISE QUAD CORE WORKSTATION
(XEON X3360)A Powerful
Office
Workhorse

Make no mistake: The next-gen Cerise business system is not your typical boring, underpowered workstation. This quad-core Clydesdale is made for graphics, music, film, architecture, and science pros who need power. And as our testing revealed, this system is good at its job.

The Cerise workstation has the same Silverstone chassis as its predecessor; all the improvements are under the hood. The high-end consumer-level components have been replaced with updated pro-level components. The system is powered by an enterprise-oriented, Yorkfield-based Intel Xeon X3360 quad-core processor (2.83 GHz), dual 6MB L2 cache, and a 1,333-MHz front-side bus (FSB). All this adds up to a processor that can input, process, and output lots of data in a short period of time. It also has the Intel S3210SHLX server motherboard with 4GB of DDR2 800-MHz SDRAM with ECC (error correction code), an extra memory chip that prevents data errors from crashing your computer. (ECC memory is usually found in servers.) Add to that a 500GB hard drive for the OS and a 1TB RAID Level 5 array, as well as a Creative sound card and a FireWire card.

This system's benchmark test scores on real-world applications were very similar to the previous generation's, as were its scores on our Photoshop CS3 and Windows Media Encoder tests. But the new workstation's CineBench score jumped noticeably (11,088, versus 9,523). Unfortunately, this system was incompatible with the SYSmark tests.

Although some consumer multimedia powerhouses, such as the HP Pavilion m9200t, have a little more power than the Cerise (as shown on our benchmark tests), this system comes free of the crapware that slows down consumer systems. If

Cerise Quad Core
Workstation
(Xeon X3360)

\$3,524 direct, with
17-inch widescreen
LCD monitor, \$3,764

●●●●●

PROS Quiet operation. Xeon quad-core power. ECC memory for mission-critical calculations. Windows XP, not Vista (but Vista is supported). Lifetime tech support. No crapware.

CONS No DX10 3D support. It's big. May require more specialized support from your in-house IT staff, or a call to Cerise XP Home instead of Pro. Limited technical-support hours.

For more: go.pcmag.com/cerise3360

you're a business owner whose livelihood depends on multimillion-dollar projects, this quad-core workstation should be on your short list.

—Joel Santo Domingo

Specs: 2.83-GHz Intel Xeon X3360 processor; 4GB 800-MHz DDR2 SDRAM with ECC; 500GB, 7200-rpm SATA hard drive; four 250GB, 7200-rpm SATA hard drives in a RAID Level 5 array; 512MB nVidia GeForce 8600GT graphics card; dual-layer DVD±RW drive; 17-inch widescreen LCD monitor; eight USB 2.0 ports; four FireWire ports; Creative Labs X-Fi Xtreme sound card; Windows XP Home Edition.

PERFORMANCE TESTS

▲ High scores are best.
▼ Low scores are best.
Bold type denotes first place.

Cerise Quad Core Workstation (Xeon X3360)	3,176	11,088	0:59	0:24
Cerise Quad Core Workstation*	5,459	9,523	0:56	0:26
HP Pavilion Elite m9200t*	12,076	10,338	0:40	0:25

* Reported for comparison. **Anti-aliasing/Postscript filtering was set to 0X.

MULTIMEDIA TESTS			
3DMARK06 ▲	CINEBENCH R10 ▲	WINDOWS MEDIA ENCODER ▼	PHOTOSHOP CS3 ACTION SET ▼
1,381 x 1,374**		0:59	0:24
		0:56	0:26
		0:40	0:25



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OneNote

Information is so much more useful when you can find it. And share it. OneNote® 2007 lets you keep everything in one place, so you don't have to fumble through file folders and crumpled up papers. You're organized.

PAYCYCLE PLUS (FALL 2008)

Payroll Made Easy

Payroll isn't the most glamorous part of running a business, but it doesn't have to be a terrible chore, either. Using PayCycle Plus is far easier than doing payroll manually and less expensive than outsourcing it. PayCycle won our Editors' Choice for online payroll services in 2006, then lost it to SurePayroll in 2007. But thanks to PayCycle's current lead in navigation, setup, and support, it has regained its seat at the E.C. table.

Inaccurate setup, resulting in incorrect payroll, can incur the wrath of your employees and possibly fines from the government. For these reasons, PayCycle provides a simple, understandable framework for setup as well as a pleasant interface that makes this lengthy, involved process a little less painful. And because taxes can be a tricky business, PayCycle has a new, streamlined tax setup that enters safe default values for the SUI (state unemployment insurance) tax rate; federal deposit schedule; filer type (944 versus 941); and, in many cases, state deposit schedule. If you need to get started but don't know these numbers, you can safely use PayCycle's suggested numbers and change them later—an unusual and extremely helpful feature. I also like the PayToday feature, which lets you set up and run your payroll the same day (with the exception of direct deposits and electronic tax payments).

The setup is far more complicated than the actual processing, which involves not much more than a handful of clicks. PayCycle also integrates with QuickBooks, Peachtree, Quicken, Microsoft Money, and others, which is one of the most useful yet most difficult aspects of the software. And as with most payroll packages, employees can register at a secure Web site (www.paycheckrecords.com, in this case) and check all their payroll data. If you get stuck, PayCycle offers phone support five days a week and an excellent online help system. In short, PayCycle performed the best across the board, thus earning back its Editors' Choice this year.—Kathy Yakal

PayCycle Plus (Fall 2008)

For 5 employees, \$42.99 monthly; each additional employee, \$1.50 monthly

★★★★★



PROS All-inclusive price. PayToday feature. Does workers' comp. Streamlined tax setup. Good navigation and setup tools. Helpful online support.

CONS Electronic state tax payments and filings are not available in all states. Interface is not as fluid as Intuit Online Payroll's.

For more: go.pcmag.com/pcplusfall08

ALSO REVIEWED AT PCMAG.COM

Intuit Online Payroll
\$29.95 monthly

★★★★★

SurePayroll (Fall 2008)
\$18.95 weekly

★★★★★

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BROTHER MFC-6490CW

Print Big—and Cheap

Most small offices could make good use, at least occasionally, of an all-in-one (AIO) that prints and scans tabloid size (11 by 17 inches). There's one reason why they almost always stick with models limited to letter and legal size: price. But with this new Brother AIO, you can have your big prints at a bargain price. Combine that with other great features and good print quality, and you've got a new Editors' Choice.

For a tabloid-size printer, the 6490CW's case is surprisingly compact at 12.7 by 21.3 by 19.2 inches (HWD), and the unit weighs in at a fairly slender 34.4 pounds. Given the price of the 6490CW, I'm amazed it doesn't skimp on features. It prints, scans, and faxes over a network; it works as a standalone fax machine and copier; and it can attach a scanned document to an e-mail message either by using the e-mail program on a PC or by sending the message directly via an in-house e-mail server or an ISP. Other important office-centric features include a 50-page automatic document feeder (ADF) that can handle up to tabloid-size documents; a tabloid-size flatbed; and both an Ethernet connector and Wi-Fi support. Two paper drawers, one for 150 sheets and the other



Brother MFC-6490CW
\$300 street
●●●●●

for 250, offer ample capacity as well as the flexibility to keep two different kinds or sizes of paper loaded at once. The 6490CW can also print directly from PictBridge cameras, memory cards, and USB keys.

This printer's one shortcoming is that it is a bit slower than others in its category. And its print quality is typical for this type of inkjet—type and photos were very good but not excellent. But if you need a solid printer with lots of features and tabloid capability, the 6490CW is a solid bet. —M. David Stone

PC **PROS** Prints and scans at up to 11 by 17 inches. Ample paper capacity. Automatic document feeder.
CONS Slow. No duplex.
For more: go.pcmag.com/brother6490cw

NEC NP100

A Budget-Friendly Business Projector

The NP100 is part of NEC's value series of projectors. As such, it sticks strictly to the basics, so don't expect to find such niceties as an HDMI connector, for example (just component video, S-Video, RCA composite video, and pass-through monitor connectors). What makes it worth considering is that it pretty much gets the basics right.

The NP100 is built around a DLP engine; its native SVGA (800-by-600) resolution makes it an appropriate choice for typical business presentations. NEC calls it a mobile projector, and indeed it's reasonably portable, at 3.3 by 10.7 by 8.1 inches (HWD) and just 5.3 pounds, though it has no carrying case. It does, however, come with a small, well-designed remote that nestles in the top of the unit.

On my tests, the projector synced perfectly to the incoming SVGA signal, producing a rock-solid image. The NP100 also scored well on our brightness test, exceeding its claimed 2,000 lumens with a measured 2,047 lumens. By comparison, the Boxlight Phoenix S25 is rated at 3,000 lumens but, at a measured 2,118 lumens, was barely brighter than the NP100 on our tests. In any case, 2,047 lumens are more than bright



NEC NP100
\$500 street
●●●●●

enough to project an image of adequate size that can stand up to most ambient lighting. The contrast ratio, at 282:1, is at a respectable level for a DLP projector and is partly responsible for helping colors pop off the screen. The NP100 sailed through our standard DisplayMate tests without any notable flaws. But it scored a relatively low 41 out of a possible 130 on the HQV Benchmark test (which tests with an analog video signal). It showed fairly good quality with DVDs, but if you want to watch movies, this is not the projector for you. If you're on a tight budget, though, and need a projector for typical presentations, you should consider the NP100. —M. David Stone

PROS: Low price. Easy setup. Easy-to-use menus and convenient controls. Reasonably light weight (5.3 pounds).
CONS: Relatively obvious rainbow effect, particularly for full-motion video.
For more: go.pcmag.com/hecnp100

MICROSOFT ZUNE 16GB

Meet the New Zune
(Same as the Old Zune)

The new flash-based 16GB Zune will look familiar: Its dimensions, screen size and resolution, and controls are identical to those of its 4GB and 8GB predecessors. You get a few new features, but they all stem from the Zune Marketplace 3.0 software—which includes a firmware update that gives all Zunes the same capabilities. While Apple continues to revamp its iPods, Microsoft is only changing the Zune's capacities and dropping the prices.

Minimalist design still rules the 3.6-by-1.6-by-0.3-inch (HWD) player. A bright 1.8-inch, 320-by-240-pixel screen dominates the top half of the front face, with two buttons (Backwards and Play/Pause) and the still-excellent touchpad underneath.

Photos and video look sharp, but the display is smaller than the iPod nano's 2-inch screen of equal resolution. True, things appear a bit sharper on the Zune screen than on the nano's, but I'd prefer a larger screen. This Zune supports JPEG files and 802.11g Wi-Fi; the wireless sync feature, which at launch last year wasn't working quite right, now works seamlessly. And Microsoft rates the Zune 16GB's battery life at 24 hours for audio and 4 hours for video.

The Zune is still a solid player, but its design stagnation—when Apple and virtually all of Microsoft's competitors in the field have upgraded their players—is disappointing. —*Tim Gideon*

**Microsoft Zune 16GB**

\$199.99 list

●●●○○○

PROS Touchpad is still excellent. Improved user interface is less jumpy. Wirelessly syncs to your PC. You can buy music wirelessly and purchase tunes you hear on the radio. Unlimited radio presets.

CONS Requires the \$14.99 monthly Zune Pass to download music straight to the player. No change in design, display size, or screen resolution from older models.

For more: go.pcmag.com/zune16gb

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SLACKER G2 PERSONAL RADIO PLAYER

A Slicker Slacker Player

Earlier this year, Web radio broadcaster Slacker aimed to make Net radio more mobile with the Slacker Portable, a device that downloaded and updated your custom stations via Wi-Fi. Now the company has launched the new-and-improved Slacker G2, which offers the same functionality in a slicker, more pocketable player. The interface is also much improved, but Slacker still has a ways to go in terms of overall ease of use before it can truly challenge the dead-simple iPod nano.

The G2 has slimmed down compared with its predecessor, to 2.6 ounces and 3.4 by 2.1 by 0.5 inches (HWD). The screen has gotten a little smaller, too; the 320-by-240-pixel display is now just 2.4 inches. The G2 also jettisons the failed touch-sensitive navigation strip in favor of a simple jog dial and a Home button. And Slacker has made some aesthetic improvements to the G2, giving it rubberized sides and a silver finish on the back.

Slacker builds its playlists from a catalog of more than 2 million songs. Interestingly, the player adjusts its updates depending on your usage patterns. You can also load your own AAC, MP3, or WMA files onto the G2 by simply dragging and dropping files to the player on your PC (Macs aren't supported). When I tested the G2's Wi-Fi capability, the results were hit-or-miss. Also, the audio quality isn't terribly impressive. But if you're a dedicated Slacker fan, the G2 is a fun way to take your stations with you. —Dan Costa

Slacker G2 Personal Radio Player

4GB, \$199.99; 8GB, \$249.99



PROS Smaller, slicker, and less buggy than the original Slacker Portable player. Refreshes music automatically via Wi-Fi. Easy to create custom stations online. Player displays album art and artist bios. Also stores and plays your own AAC, MP3, and WMA files.

CONS Software hits some snags. Wireless connections can be spotty. No photo or video support.

For more: go.pcmag.com/slackerg2



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**TiVo HD XL**

\$599.99 list

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PROS Easy to use. 1TB hard drive. Dual HD tuners. eSATA port. Backlit TiVo Glo remote. Includes an HDMI cable.

CONS Pricey. Cable TV DVRs can be less expensive in the long run. YouTube videos often don't look too hot on a large HDTV.

For more: go.pcmag.com/tivohdxi

TiVo HD XL

TiVo Gets Even Bigger

Those who absolutely refuse to miss a minute of high-def programming should look into the TiVo HD XL, the latest DVR from the company that made TV time-shifting all the rage. The XL is the spiritual successor to 2006's TiVo Series3 DVR. And the XL simply stands for lots of hard drive space—1TB to be exact. This translates into about 150 hours of HD recording and more than 1,360 hours of basic-quality SD recording.

The XL features the same 3.4-by-16.5-by-12.6-inch (HWD) chassis as the TiVo HD, and like the HD, it gives up the Series3's OLED info display on its front panel. The fully backlit TiVo Glo remote and THX certification differentiate the XL from the older HD

model. The TiVo Glo remote is nice, but you can buy one for about \$50 on TiVo.com, and it works with the cheaper TiVo HD just as well. The meat of the improvement is that huge 1TB hard drive, but considering the current low price of storage, TiVo has overcharged for this bump. Day-to-day use of the XL is the same as with any other TiVo model, and you can network additional TiVo units (Series2 and later) to this unit.

Recording programs is simple, but keep in mind that you'll need a CableCARD for each tuner if you want to record premium programming from HBO and Showtime, for example. (You can record unscrambled HDTV from cable or an antenna hookup straight out of the box.) And you can use the eSATA port on the back to add an extra 60 hours of HD recording to a TiVo-compatible external hard drive. A cool extra: You can also download recorded shows to your computer via TiVo Transfer.

The XL is an improvement over the TiVo HD, but given its price, it will probably appeal only to those who record a lot of HD shows. —*Joel Santo Domingo*

LOGITECH SQUEEZEBOX BOOM

A Super Sonic Boom

The Squeezebox Duet Network Music System, the previous update to Logitech's Squeezebox line of music streaming devices, was missing one thing: speakers. That's where the Squeezebox Boom comes in. The appropriately named Boom looks like a mini boom box and incorporates all the familiar Squeezebox streaming features, including wireless access to your computer's audio library and to music services like Pandora, Slacker, Last.fm, and Sirius Internet Radio. Its sometimes sluggish and mildly confusing interface requires a bit of patience, but the speakers sound excellent and rarely distort, making this compact system a solid choice with which to rock your next house party.

The slick little Boom, which measures 5 by 13 by 4 inches (HWD), is all-black, with a 2.8-by-0.6-inch vacuum fluorescent display (VFD) that dominates the front of the unit. The display scrolls station info and song titles at an easy-to-read size. The Boom doubles as an alarm clock, and there's a snooze button on the top that doubles as a sleep timer. The back panel has connections for power, Ethernet, a subwoofer output, and an aux input for iPods or other

**Logitech Squeezebox Boom**

Price: \$299.99 direct

●●●●●

PROS Compact and attractive. Robust audio codec support. Plays Internet radio and subscription services. Speakers offer laudable power.

CONS Confusing menu navigation. Slow to retrieve songs from PC libraries, music services.

For more: go.pcmag.com/squeezeboxboom

sound sources. The 0.75-inch tweeters and 3-inch woofers are subtly angled upward, which makes for better listening. The Boom also supports MP3, WMA, unprotected AAC, Ogg Vorbis, MP2, MusePack, and most lossless files.

As for sound quality, streaming audio via 802.11g Wi-Fi sounded excellent. Navigation, however, is annoyingly difficult, with only one menu option visible at a time and some confusingly named menu items. The Boom was also a bit sluggish to play a track after I hit the Play button. Despite these minor disappointments, the Boom is still a fun, great-sounding way to stream tunes. —*Tim Gideon*



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**Pioneer KURO
PDP-5020FD**

\$4,000 list



PC **MAGAZINE** **EDITOR'S CHOICE**
PROS Superb HD video processing. Stellar picture contrast. Top-notch sound quality. Network multimedia support.

CONS Some SD video processing quirks.

For more: go.pcmag.com/kuro5020

PIONEER KURO PDP-5020FD

The Best HDTV You Can Get

LCD TVs outsell all other flat-panel HDTV sets by a huge margin, but plasma could be mounting a comeback, with the Pioneer KURO PDP-5020FD leading the charge. The 50-inch set delivers the best picture contrast of any HDTV currently available, and its range of color reproduction and consistent color accuracy are a perfect match for today's highest-quality HD video material. It also incorporates some of the most comprehensive multimedia file support that I've ever seen in any HDTV, and given that it's also Pioneer's least expensive 1080p plasma, it's a shoo-in for our Editors' Choice award.

The sleek, minimalist design of the KURO features a relatively narrow 2.4-inch glossy black bezel. A new digital amplifier claims to offer 18 watts of output to each speaker, and I was impressed by the system's overall sound quality, particularly its well-rendered bass response. With the base stand attached, the PDP-5020FD measures 34.1 by 48.5 by 11.8 inches (HWD) and weighs 86 pounds. The KURO is also a DLNA-certified multimedia player, and connecting the set to my local network via the integrated Ethernet port allowed me to find and

access content stored on compatible server devices quickly, including Windows PCs. The set's remarkable integrated multimedia support includes AAC, WMA, and MPEG-4-AVC and also adds streaming audio support (SHOUTcast). And let's not forget the KURO's impressive contrast ratio of 8,809:1 (which also reduces power consumption).

The 50-inch screen offers full 1080p resolution, but it won't accept a 1080p signal via component input. For full-resolution support you need to connect using the set's HDMI inputs. The unit does a decent job of processing standard-definition (SD) video, but there were minor issues in detecting video that was originally recorded in the 24p format (most films and digital cinema), resulting in distracting jagged edges, line flicker, and moiré artifacts. On the other hand, picture performance with HD video is flawless. Samsung and Sony are hard at work on LED-backlit LCDs with better picture contrast than what is currently available, but for now the KURO's awesome contrast, HD image quality, and integrated features make it the best HDTV on the market.

—Robert Heron

PORTS INCLUDED

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S-Video	1
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VGA	1

It's got built-in security? Really? A rock solid my-business-is-my-business smartphone? That's awesome. No wait... scratch that. It's awesome wrapped in cool and sugarcoated with amazingness. And if it gets lost, boom—data can be removed remotely.* Now that's security, Fort Knox-style.



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Quick Looks

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RED indicates Editor's Choice		PROS	CONS	BOTTOM LINE	SPECS
SMARTPHONES					
	Verizon Wireless Blitz \$269.99; \$69.99 and up with contract ●●●●○	<ul style="list-style-type: none"> Available as a prepaid option Full keyboard Rhapsody-compatible 	<ul style="list-style-type: none"> SMS interface is bare-bones, lacks threading Poor camera 	If you're a texter who can't commit to a wireless contract, the Blitz is the way to go.	CDMA; 1xRTT, EV-DO Rev 0 data networks; 2.2-inch, 220-by-176 TFT LCD; 1.3MP camera; 3.5 by 2.5 by 0.7 inches (HWD), 5.1 ounces.
	LG Chocolate 3 \$329.99; \$129.99 and up with contract ●●●●○	<ul style="list-style-type: none"> Solid performance Big screens and keys Supports Rhapsody music 	<ul style="list-style-type: none"> Underreports reception Calendar doesn't offer syncing options Speakerphone doesn't work with flip closed 	The LG Chocolate 3 is a solid, midrange flip phone for Verizon with a wide range of modern features.	CDMA; 1xRTT, EV-DO Rev 0 data networks; accepts microSD flash memory; 2.2-inch, 320-by-240 LCD; 2MP camera; 2.5mm headphone jack; 3.9 by 1.9 by 0.6 inches (HWD), 3.3 ounces.
AUDIO					
	BlueAnt V1 Voice Control \$129.95 list ●●●●○	<ul style="list-style-type: none"> Stylish Lightweight Plenty of volume Transparent voice-enabled interface 	<ul style="list-style-type: none"> On the expensive side Slightly unnatural voice timbre Voice-dialing feature is a little buggy 	The V1 Bluetooth headset is plenty of fun to use given its voice-enabled command structure, but other models offer better sound quality at this price.	Supra-aural; wireless; Bluetooth 2.0; 4 hours 8 minutes battery life; 1.5 by 0.69 by 0.44 inches (HWD), 0.35 ounce.
	Creative ZEN X-Fi with Wireless LAN 16GB, \$199.99 list; 32GB, \$279.99 ●●●●○	<ul style="list-style-type: none"> Streams and downloads music wirelessly FM radio and voice recorder Quality earphones are included 	<ul style="list-style-type: none"> User interface needs work Most videos need to be converted with the included software Loaded with buttons 	Armed with wireless streaming features, the affordable ZEN X-Fi media player is still solid, but it is hindered by an irksome user interface.	16GB and 32GB flash memory capacities; 2.4-inch screen; supports MP3, WMA, WAV, Audible, and AAC formats; 3.3 by 2.2 by 0.5 inches (HWD), 2.4 ounces.
	Logitech Z-5 \$99.99 list ●●●●○	<ul style="list-style-type: none"> Quality audio performance for price Extra drivers add space to stereo field Remote controls iTunes and Windows Media Player 	<ul style="list-style-type: none"> Not a lot of bass response Grilles attract dust and smudges 	The bargain-priced Logitech Z-5 speaker set delivers crisp highs and comes with a remote that lets you control your music library. Just don't expect deep bass.	Remote control; two 9.8-by-3.6-by-3.6-inch (HWD) speakers; LED power indicator; 3.5mm auxiliary jack; Power, Volume, Track Forward and Backward buttons.
GPS					
	Garmin navi 755T \$499.99 list ●●●●●	<ul style="list-style-type: none"> Subscription-free live traffic alerts Lane-assist view 3D landmarks 	<ul style="list-style-type: none"> Advertisements in traffic and map views 	Garmin improves on its Editors' Choice-winning navi 700 series by adding new features, including free live traffic updates.	4.3-inch, 480-by-272-pixel screen; accepts SD flash memory; Navteq traffic alerts; includes City Navigator NT street maps; photo viewing capability; 3.0 by 4.8 by 0.8 inches (HWD), 6.5 ounces.
HDTV					
	Insignia NS-LC026-09 \$479.99 direct ●●●●○	<ul style="list-style-type: none"> Good value Excellent picture from HDMI inputs Custom input labels 	<ul style="list-style-type: none"> Excessive overscan from analog video inputs Ideal picture settings require use of the advanced video settings menu 	Best Buy's value-priced LCD delivers an admirable HD picture after some relatively minor picture adjustments, but using the set's component video input causes some loss of picture detail.	1080i, 1,366-by-768-pixel screen resolution; two HDMI ports, component video port, VGA port, RF input; 19.1 by 25.7 by 9.4 inches (HWD), 19.4 pounds.
DIGITAL CAMERAS					
	Samsung NV24HD \$350 street ●●●●○	<ul style="list-style-type: none"> AMOLED screen might be best display on a digital camera to date Records HD video (720 at 30 fps) HDMI out (via proprietary cable) 	<ul style="list-style-type: none"> Intimidating interface Indoor shots with flash underwhelm Overall build is not comfortable 	The NV24HD is not for everyone; those looking for a basic camera won't enjoy the 12 buttons, 2 dials, and retro feel. Those who like to tinker will enjoy all the features the NV24HD offers.	10.2MP resolution; 3.6x optical zoom; 3.5-inch LCD; 20MB onboard memory; accepts SD, SDHC, and MMC flash memory; 2.4 by 3.5 by 0.7 inches (HWD); 5.1 ounces.
DTV CONVERTER BOX					
	RCA DTA800B1 \$54.99 direct ●●●●○	<ul style="list-style-type: none"> Easy to set up Simple remote works well Good-looking user interface Smart antenna input 	<ul style="list-style-type: none"> Doesn't come with cables for analog audio and composite video out Guide shows only one program ahead 	This RCA DTV converter box works well and has a "smart antenna" input, but the exclusion of analog cables seems stingy, especially considering it costs more than similar boxes.	Remote control; antenna in, coaxial out, composite video out, "smart antenna," and stereo RCA ports. 1.49 by 5.5 by 7.48 inches (HWD).
ROBOTICS					
	WowWee Femisapian \$99 direct ●●●●○	<ul style="list-style-type: none"> A decent value Adorable Versatile 	<ul style="list-style-type: none"> Controls are difficult to learn Robot never actually speaks Falls over too easily 	The Femisapian offers striking looks and a lot of moves for a sub-\$100 fembot—it'll even kiss you.	IR sensors; learning mode; 14 inches tall.

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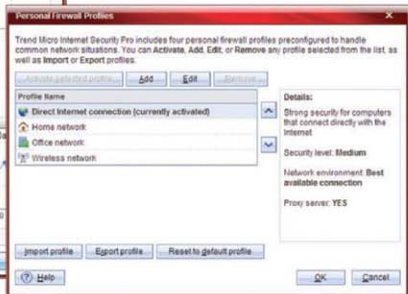
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2) 100% write power, less than 100% of 100% write power
3) 100% write power, less than 100% of 100% write power
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PROS Helpful live chat support. Effective malware removal. Scans for vulnerabilities. Few pop-ups. Rates sites by reputation. Parental control better than most. Accurate spam filtering. In-browser keystroke encryption. Remote management. System tune-up.

CONS User-interface problems on malware-infested systems. Difficult installation on malware-infested systems. Remote management lacks security status indicator.

For more: go.pcmag.com/tmisp2009

TREND MICRO INTERNET SECURITY PRO V2

A Security Enforcer with Extras

With the latest edition of its security suite, Trend Micro aims to increase protection, reduce bother for the user, and do it all using fewer system resources. This version is a significant improvement over last year's edition. Its features hang together better, some user-interface oddities are fixed, and it recovered from installation problems much better than did Version 1.

Trend Micro fans won't be shocked by changes to the main window. It looks almost the same, except that the familiar controls are now on a tab named My Computer. New in this edition, however, is a Pro feature called Security Activity Dashboard. The dashboard offers a graphical and numeric indication of the source and type of all recent threats. Links from this display go directly to detailed logs of the corresponding threat type. The product does its best to fix problems silently, so this dashboard lets it boast about its good deeds.

On our tests, Trend Pro detected every single one of the malware samples and removed most of them, though it did leave one rootkit actively protecting itself. With commercial keyloggers, on the other hand, it completely missed almost half the samples and successfully removed only a third of those it detected. But since keyloggers are typically

a minor threat to most users, this did not hinder the suite's overall rating much. When I tried to surf to malicious Web sites, Trend Pro blocked two-thirds of sites that were still functional.

Trend Pro's firewalls are preconfigured with four distinct profiles for different situations. Profiles are also available for wireless, home, and office networks. Each profile activates its own complete set of firewall configuration settings, and Trend Pro can automatically change profiles when you connect to a different network. I tested the firewall with real-time protection disabled, leaving just behavioral blocking. Trend Pro blocked 10 of the 12, a good result.

There are also a couple of good bonus features to Trend Pro. First, every full scan also checks your system for vulnerabilities. The software lists any critical Microsoft patches that you've missed, with an option to view details on Microsoft's Web site or go straight to Windows Update online. Also, Trend Pro blocks access to phishing sites and other dangerous Web sites. And aside from slowing your system a bit at start-up, this suite is much improved in that department over last year's edition. If you've got a lifelong grudge against Norton (our Editors' Choice for security suites), Trend is a great choice. —Neil J. Rubenking

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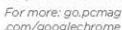


For more: go.pcmag.com/zonealarm2009

Venerable ZoneAlarm Hangs Tough

The new user interface trades in the colorful, at times garish tones of its predecessor for a more muted theme with consistent icons. The overview

To its credit, ZoneAlarm's spam filter is one of the most comprehensive out there. And you get a one-year free subscription to Identity Guard Good Start protection. ZoneAlarm is good at preventing the infestation of a clean system but less effective at cleaning up an infected computer. It's still a fine choice, but I look forward to a makeover that's more than skin-deep.—Neil J. Rubenking



Google Browser Still Needs Some Polish

Chrome is an amalgamation of Google's V8 JavaScript rendering engine, the open-source WebKit rendering engine (used by Safari), and code from Firefox. This means it should correctly present any

Chrome is quite snappy, however, when displaying and navigating Web sites, and it works beautifully with the new Yahoo! Mail. And a safe browsing feature supplies the same antiphishing and malware protections you'll find in Firefox 3. Chrome's Incognito mode lets you move around the Web without leaving traces. With the jury still out on whether Web apps will rule the world, Chrome is certainly a bright new toy, but it's not necessarily an engine of productivity at this point. —*Michael Muchmore*



SPORE

An Evolution in Gaming

Saying that Spore is addictive is a gross understatement. The game grabs you with a pair of newly evolved talons and won't let go. An invention of SimCity creator Will Wright, Spore is a "massively single-player online game" in which you work your way through the evolutionary chain from microorganism to—well, that's up to you. Simply put, Spore offers a breadth that no other simulation game has managed to broach.

Spore opens with the fiery birth of your planet and the creation of life in a primordial ooze. You then decide whether you prefer your creature to lead a carnivorous or omnivorous existence (the game gives you plenty of opportunities to switch later). The first stage of game play, called Cell, mimics what you might expect in the life of a microorganism: swimming, eating, and being chased by larger creatures. The first land stage, Creature, gives you the keys to your creature's evolution through small-scale wars and alliances with neighboring herds. New creator parts are unlocked continually as you wander around the countryside, encountering other species.

In the Tribal stage, you now control a tribe, assigning its members jobs, teaching them to speak, and communicating with other tribes. Now that your creature is fully evolved, the quest for DNA has been replaced by the ever-important search for food. For every fellow tribe that is destroyed or allied with, you move closer to the next stage: Civilization. You can create buildings and vehicles, and eventually work your way up to the final stage: Space, in which you discover new planets for building civilizations.

The brilliance of Spore is the way in which it grows exponentially. With each new stage comes a new form of game play to be mastered. Advancing between stages requires a good deal of repetition and a lot of patience, but overall, Spore rises above the shoot-'em-ups to achieve a game that entertains, engages, and stimulates players of all ages. —Brian Heater

Spore

\$49.95 direct



PROS Incredibly deep and immersive. Broad range of game play. Fully imagined and extremely customizable elements and worlds.

CONS Aspects of game play can become repetitive.

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This consumer-level video-editing program has matured into a highly likeable and usable program. The software offers a good range of editing capabilities and output options. The newly enlarged effect-configuration windows and the ability to toggle effects on and off (which aids previewing) are alone worth the upgrade price. It's also a solid choice for DV, HDV, or AVCHD editing and especially good for users editing HD video on slower computers, where VideoStudio's proxy editing feature really shines.

VideoStudio's overall interface is structurally similar to that of the last version. As before, you can choose between four different layouts. In VideoStudio Editor, you direct workflow via seven tabs arrayed across the top of the interface in an order that reflects the general flow of the editing process: Capture, Edit, Effect, Overlay, Title, Audio, and Share. Although this approach is intuitive, Corel could do more to help you choose a project preset.

VideoStudio's Capture capabilities vary by format but are generally at the top of the class. Also,



VideoStudio has the rare ability to replace the original HDV and AVCHD footage on the timeline with proxy files that allow you to edit more or less in real time. Later, when rendering, VideoStudio applies all edit decisions to the original footage. The only negatives are hard drive consumption and conversion time. The 1-minute test file was 28MB, so for 1 hour of video, the original file itself would have required 1.68GB, to which you'd have to add the size of the converted file. Overall, the work Corel invested in VideoStudio has produced a much more usable and useful program, though one that's not quite as innovative or polished as our current Editors' Choice, CyberLink PowerDirector. —Jan Ozer

Corel VideoStudio Pro X2

\$99.99 direct

●●●●●○

PROS Very good capture, trimming features. Good range of output options. Good slideshow effects. HDV, AVCHD proxy editing.

CONS Confusing project-selection parameters. Poor native-AVCHD editing performance.

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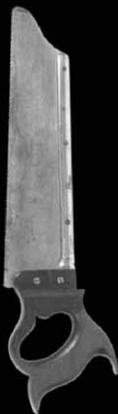
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DELORME

Quick Looks

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	PROS	CONS	BOTTOM LINE
SECURITY			
BitDefender Total Security 2009 3 licenses, \$79.95 direct ●●●●○	<ul style="list-style-type: none"> Includes 2GB of online backup Resists tampering Almost no false positives from antispam Scans for system vulnerabilities Can restore virus-damaged files from backup 	<ul style="list-style-type: none"> Malware scanner frequently left threats uncleaned even after multiple passes Antispam slows mail download significantly Duplicate file finder can damage system 	BitDefender has added a ton of new features—online backup and remote configuration, for example. It includes all the expected security elements, with decent performance from most of them. It's a reasonable choice if you're excited by those extra features.
F-Secure Internet Security 2009 3 licenses, \$79.90 direct ●●●●○	<ul style="list-style-type: none"> Very good at preventing malware installation Parental control now includes time scheduling Simple user interface 	<ul style="list-style-type: none"> Extremely slow at preventing malware installation Very difficult to install on malware-infested systems Ineffective antispam and parental control 	F-Secure 2009 is easy to use, without complicated settings and extras. But getting it installed was a nightmare, and it took too long deleting inactive malware. The firewall is old-fashioned, and the antispam and parental control apps are ineffective.
Kaspersky Internet Security 2009 3 licenses, \$79.95 direct ●●●●○	<ul style="list-style-type: none"> Application filtering protects specific system areas against unknown programs Program takes necessary action without hassling user Repeat scans blazingly fast Firewall blocked intrusion tests No big performance hit 	<ul style="list-style-type: none"> Parental control is still rudimentary Antiphishing is weak Spam filter blocks much valid mail Difficulty installing/scanning on malware-infested systems 	Kaspersky's new user interface hides messy security details but leaves them accessible to power users. The new application-filtering feature makes the suite smart enough to make its own decisions without hassling the user. As long as you don't plan to rely on Kaspersky's suite for spam filtering or parental control, it's a good choice.
Panda Global Protection 2009 3 licenses, \$89.95 direct ●●●●○	<ul style="list-style-type: none"> Accurate spam filtering Moderate effect on PC performance Collective intelligence aids malware recognition Firewall resists attack Detects Wi-Fi intruders 	<ul style="list-style-type: none"> Less effective against spyware than previous edition Expensive Tune-up feature is pointless Phishing protection barely works User must pay for online backup after a year 	Except for the new main screen, Panda's 2009 suite doesn't look much different. Its collective intelligence promises better protection, but its action is spotty: Spam filtering got much better, spyware protection got worse. And it's expensive!
VIPRE Antivirus + Antispyware 3.1 1 license, \$29.95 (3 licenses, \$39.95; unlimited in one household, \$49.95) ●●●●○	<ul style="list-style-type: none"> Detected every installed malware sample and removed most Detected many malware installers on sight, detected remainder during install, and blocked most 	<ul style="list-style-type: none"> Failed to remove two rootkits Failed to block installation of two rootkits Many modified samples evaded its detection 	VIPRE's overall scores are almost as high as those of Spyware Doctor 6. It detected every malware sample and removed most. It did, however, leave a couple of rootkits running. But it's still more effective than almost all of its competition.
SEARCH ENGINE			
Cull Free ●●●●○	<ul style="list-style-type: none"> Slick design Doesn't collect your search history Suggests terms as you type No ads in results, yet 	<ul style="list-style-type: none"> Suggested terms start with commercial links No image, video, news, or map search Category suggestions often unhelpful 	After such dominance by one player, it's nice to see some movement in the Web-search arena. But though Cull offers some intriguing new takes on search, it has a ways to go before becoming a real threat to Google and Yahoo!.
PHOTO EDITING			
GIMP 2.4.7 Free ●●●●○	<ul style="list-style-type: none"> Free Full-featured Powerful 	<ul style="list-style-type: none"> Iconoclastic interface makes learning harder for new users Some features less polished than those by for-pay competition No preview of edits Performance can be sluggish 	Developers and Linux fans will appreciate this image editor's capabilities, but those simply looking to do basic photo fixes will find it unnecessarily difficult.
VIDEO EDITING			
Sony Vegas Movie Studio 9 Platinum Pro Pack \$129.95 direct ●●●●○	<ul style="list-style-type: none"> Excellent chroma-key function Very good audio editor Powerful SD authoring capabilities One-button YouTube upload 	<ul style="list-style-type: none"> Can't create Blu-ray menus No backlight correction, motion stabilization Challenging editor, authoring program interfaces 	A good choice for those who don't mind investing significant time mastering the product, but this app is not for those who value ease of use above all.
E-COMMERCE			
GoDaddy New Business Solution with Quick Shopping Cart Without shopping cart, \$153.99 yearly; with cart, additional \$9.99 monthly ●●●●○	<ul style="list-style-type: none"> Site builder has Flash support, audio and video players, RSS Excellent traffic reporting Good shopping-cart tax and shipping options 	<ul style="list-style-type: none"> Confusing sign-up has too many options, come-ons Components poorly integrated E-mail account provision is stinky Product logs you out too often 	GoDaddy has a capable online site builder and excellent site-stat reporting, but the overall site-creation and management experience is far less intuitive and streamlined than what you get with Microsoft Office Live Small Business and Yahoo! Small Business.



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JOHN C. DVORAK

Software Farce and Fraud

There oughta be a law against both software activation and bizarre end-user licensing agreements (EULAs), which are ridiculously onerous and are written solely to protect the vendor from any obligation whatsoever and, essentially, to tell customers that they are idiots and can go screw themselves if anything goes wrong.

Whatever happened to the consumer-protection movement? It was taken over by the "screw the consumer" movement while state legislatures, courts, Congress, government agencies, and others cheered along.

Software licenses are an out-and-out scam. It's all part of a game the consumer can never win as long as the consumer keeps tolerating the situation.

This is the state of affairs in general. A lot of people like to blame it on deregulation, but I personally don't see how any of these problems has much to do with regulation, except antitrust regulation—and nobody does anything about that except to raise the flag of globalization and say that bigger is necessary to compete on a global scale. What a farce! What does allowing what were regional Bell operating phone companies such as Pac Bell to be all bought up and returned to AT&T have to do with global anything?

The problem is that these monopolies are not designed to compete globally (find me an AT&T service in Germany) but to gouge the American customer with overpriced no-real-alternatives shoddy service and crappy products. There is nobody to complain to if you have a problem, and you get the runaround if you do find someone to complain to. Worse, with monopolistic phone companies and banks, you're hit with endless bogus charges, and there's no law enforcement agency willing to do anything about what is obvious fraud.

In the tech sector there has never been any resistance to a company's buying the competition, unless there was some sort of political motivation to stop it. By that I mean the company involved was not coughing up enough cash money in donations to congressmen. Let's be real about this. If you look into campaign contributions, many of them make no sense except as a payoff.

Microsoft was in this boat and ended up in an antitrust suit. Then later, when it tried to buy Intuit, the deal was nixed.

Since then the company has played ball and buys whatever it wants.

The worst part of this situation is that these buyouts and mergers have been institutionalized and encouraged with the implementation of Sarbanes-Oxley, which makes it impossible for a little company to go public to get some operating capital. So big companies buy the competition and get bigger and bigger to the point where only a few monopolies exist. We end up with a mess in which nobody benefits but some billionaire executives.

And, of course, with a monopoly there is less choice, and the customer can be treated like dirt—as is shown by EULAs that tell the user to pound salt. Boil down any EULA and here is how it reads: "We are under no obligation to do anything, ever, and you agree to not sue us or complain under any circumstances or else you cannot legally use our software. The software is for use on only one machine by one person, ever, and cannot be resold. If the software does not work, that is not our responsibility either." And the courts

in this country are fine with this sort of thing since, according to them, it is a binding contract.

Like you had a choice? Who are we kidding with this bullcrap? This practice is an out-and-out scam. When will a sharp lawyer come forward and destroy this idiotic fake contract mechanism?

Software activation is another horrid idea that inconveniences the user to an extreme. It exists only because there is not enough competition in the market. The fact is, this is nothing more than the modern version of copy protection that began with special formatted floppy disks and dongles. Software activation is an online dongle. A dongle in the cloud, as it were. And it craps out a lot.

There are literally thousands of people who complain about activation failures. Hours, even days, are lost to fixing these problems. Often the "fix" is botched by the cheap worker in Mumbai who cannot follow the instructions given to him in a binder filled with customer-service scripts. In a normal society, where there is some notion of consumer protection, you could sue the software company for your lost time and aggravation. But not in America, because the "contract" says you cannot sue the software company ever.

Linux and the open-source products under its umbrella are the only possible hope we have to move things in a different direction. But since all the forces of government are openly promoting monopolies, where the companies get bought by competitors to get rid of competition, things will only get worse. It's all a game the consumer can never win as long as the consumer keeps tolerating the situation without complaint.

I don't see that changing anytime soon.

DVORAK LIVE ON THE WEB John's Internet TV show airs every Wednesday at 3:30 ET on CrankyGeeks.com. You can download back episodes whenever you like.

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Dvorak's InsideTrack

There are a **couple of interesting trends** emerging in the display department, and one of them is a dead end. The first trend, which is very important, is the move to **LED backlighting** for all sorts of flat-panel displays. This transition has taken **longer than expected** but should prove to be a boon to the life expectancy of flat-panels.

As you should know, flat-panels have various kinds of fluorescent light bulbs behind the panels. Like any fluorescent bulb, **they go bad** after a while. I think that after five years it gets quite noticeable. I have an older ViewSonic LCD screen that now needs the contrast and brightness **cranked to the max**. It is on its last legs.

With LEDs, screen illumination problems won't happen for 20 or more years. What has kept LED technology away from the market is the still-high cost of the white LEDs. This much I know for sure: If I am going to buy an **LCD TV**, I am not getting one until it has a backlight of LEDs. If my set is going to burn out fast, then I'd prefer a plasma display.

Meanwhile, keep a lookout for the **emergence of organic LED (OLED) backlighting**. The electroluminescent layer is composed of a thin film of organic compounds and requires much less power than other LEDs. OLED technology is predicted to become a billion-dollar market in low-cost gimmicky toys and gadgets alone. But it is obvious that it will be the backlighting of choice in the sub-\$100 laptop computer of tomorrow since it is **dirt cheap**. Apparently manufacturers now expect to get to the **magical 150 lumens-per-watt by 2012**, and the lifetime of the light itself has increased from 24,000 to 100,000 hours.

In the meantime, a **more interesting but faddish trend is the 3D display** that stems from a number of technologies that began to develop in the late 1990s. And these are not the technologies that require polarizing or high-speed-shutter LCD glasses. These are **freestanding naked-eyeball displays** that present a 3D image using other forms of trickery.

There are apparently ways of making LCD screens so that they send out part of an image to one eye of a viewer and the other part to the other eye. **The effect is quite phenomenal**. The first time I saw this demonstrated was with a Sharp laptop, but you had to keep your head in one position for it to work. With this new approach, you can move your head and the effect stays.

Still, there is something **unnerving about the displays** and something gimmicky, too. I feel the same way about 3D movies. Every time one of them comes around the technology enjoys greater popularity for only a couple of years before people once again get tired of it. I think it just requires too much effort on the part of our lazy brains.

Adding interest to the scene, **Fujifilm has reinvented the 3D camera** with a dual lens/dual sensor, reminiscent of those now-collectible dual-lens film cameras you could buy in the 1960s. With special processing back then you got a double-frame slide that went into a special 3D slide projector. That idea disappeared, too.

Fujifilm plans to combine the camera with a **photo frame that will display all those pics in 3D without special glasses** or any other aid. Now this is something that I would actually like on the mantle. Can you imagine what people would think?

More from the **Technologies That Come and Go Dept.**: The one technology that will not go away no matter how much experts squawk about it is power-line networking. It actually amazes me how long this technology has been kicking around despite getting almost no public traction. It's astonishing how it lives on. The latest iteration is from DS2 in Spain, which has shown a **nifty 400-megabit-per-second system** running over standard electrical wiring. The Spanish company has sold these systems mostly as **delivery mechanisms for IPTV**.

If you are wondering why such a technology still survives, it is because the potential to **talk to your appliances** over the electricity grid is too attractive to resist. In this case it's all about smart appliances with touch screens getting messages from the home base to **deliver advertising** to you in your home. **It never ends! Stop the insanity!**

That said, one can imagine a set-top box connected to the Net via the power line and being able to ship content into a house before it's been wired for networking or before wireless routing actually works for high-throughput video. So maybe there is something to this after all. Whatever the case, expect advertising to be part of the mix.

The New Platform Report Dept.: If anyone hasn't noticed, the once-moribund smartphone market has blossomed into an amazing business overnight thanks to the hype machine called Apple. In this case, all the hype has resulted in a genuine **critical mass of developer interest**, as everyone is seeing dollar signs. Unfortunately, while applications are flying off the download sites, most of the apps are generally silly. One developer for the Android platform actually thought it would be **cool for an app** to use the motion sensors in the phone to detect when the phone was dropped and have a voice scream, "Help me, I'm falling!"

I guess all this is called progress.

WANT MORE DVORAK? John writes a weekly column for our Web site, too. Log on to go.pcmag.com/dvorak. You can also e-mail him at pcmag@dvorak.org.



LOOKS LIKE SOMEONE'S NOT EXACTLY FEELING "HAPPILY-EVER-AFTER."

When it comes to safeguarding your computer, the current crop of Internet security products just can't keep up with today's more sophisticated threats. In fact, right now, cybercriminals are scheming-up new ways to attack your computer, through applications you use every day, like MS Office and Acrobat, plug-ins like Flash, and sites you know and trust, like Facebook, MySpace and Wikipedia.

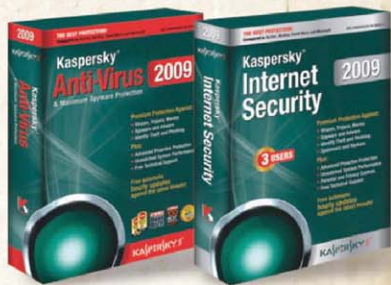
It's time for something totally new – a revolutionary approach. For software that acts like your own security expert, constantly assessing where you're vulnerable, while helping you live and work online, better, faster and safer. It's time for Kaspersky Lab, a whole new standard in Internet Security.

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SASCHA SEGAN

R.I.P. Usenet: 1980–2008

Before the Eternal September, but after the Great Renaming, I learned about sex on Usenet. A few years later, using a Mac SE in a college basement, I met friends I still have today. We “spewed” about our teenage lives in ways that would be familiar to any MySpace blogger circa 2008, but in 1993 were radical, strange, and comforting. We made faraway friends, burned yearbooks to CDs, and mailed them to Finland with way too many stamps. We were the first Net kids, really.

In a way inconceivable in today's Web-fragmented marketplace, Usenet was the place you went to talk. Dreamed up back

ing was frowned upon. People hewed to a loosely agreed-upon set of net.manners enforced by self-appointed cops.

Usenet was what the Web is missing nowadays: a genuinely public space. While different people hung out in different groups, everyone accessed the same group list, and there was plenty of cross-fertilization. Control came down to a cabal of scattered IT administrators who generally preferred to leave well enough alone. Compared with chat systems like IRC (and later, instant messaging and texting), Usenet encouraged thoughtful, long-form writing with lots of back-and-forth.

eternally searchable. Wiser folks started watching what they wrote.

Meanwhile, as multimedia became popular, Usenet became a way for pirates and pornographers to distribute massive quantities of binary files in a decentralized, untraceable manner; in other words, a proto-BitTorrent. It's likely that was when Usenet's noose began to tighten. News-groups had exchanged code for years, but by the late nineties the “binaries” groups began taking up huge amounts of space and traffic. Since Usenet libraries reside on each ISP's server, service providers sensibly started to wonder why they should be reserving big chunks of their own disk space for pirated movies and porn.

A New York State government crusade against child pornographers who use the binaries groups to distribute their wares is finally sealing Usenet's doom. AOL dropped Usenet in 2005, but many other large ISPs kept carrying newsgroups. Now major providers are dropping large chunks of Usenet, or even the whole thing. That's reducing it to being a semi-proprietary bulletin board system run mostly by about a dozen large, private, subscription-based servers. While it's still popular among some, it's no longer ubiquitous, no longer the Net's social hub, and no longer free in either sense of the word.

It's hard to kill off something as totally decentralized as Usenet; as long as two servers agree to share the NNTP protocol, it'll continue on in some fashion. But the Usenet I mourn is long gone, transformed into interlocking comments on LiveJournals and the forums boards on tech-support Web sites. Obviously, people lead lives, converse, and learn on the Internet far more broadly than they did in 1993. But give me a moment's nostalgia for a Net that offered one place to go, a place that everybody knew about, but nobody owned.

GET MORE SASCHA For more of his views, visit go.pcmag.com/segan.

Before the spammers and crooks arrived, Usenet was the place where you went to talk, and nobody knew if you were a dog, a kid, or Finnish.

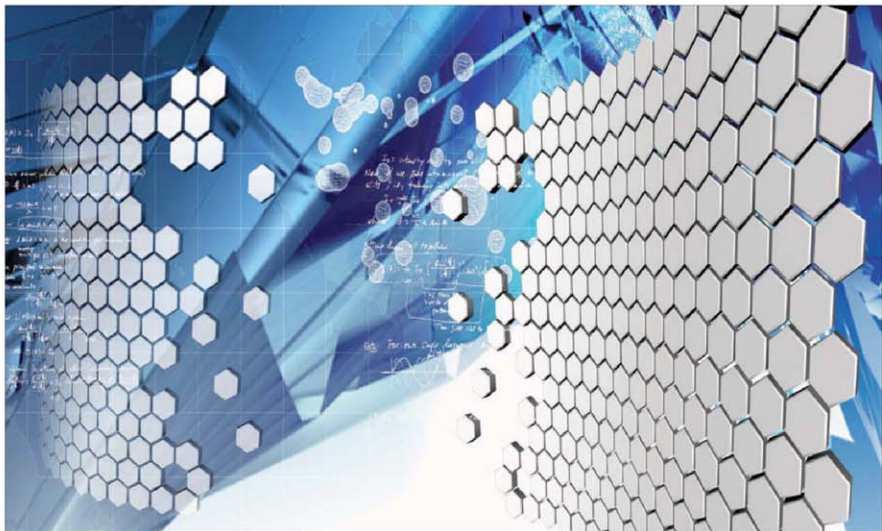
in the idealistic, nonprofit days of the Internet, it was—well, it is, but it mostly was—a series of bulletin boards called “newsgroups” shared by thousands of computers, which traded new messages several times a day.

On the text-only Usenet of my memory, nobody knew whether you were a dog, or a kid, or Finnish—only what you wrote. There was the obsession with photos and video that overruns today's social networking sites. Yeah, I know that sounds like “get off my lawn you darn kids” crotch-etiness, but there's something really nice about just talking to people and not caring what they look like.

Serious conversations went on in forums like comp.sys.atari.8bit; more frivolous chatter appeared in groups whose names started with “alt,” a free-for-all that nobody owned. It was a more innocent time on the Net, before most of the spammers, the crooks, or even the general public showed up. Commercial advertis-

Usenet has been dying for years, of course. Some people date Usenet's decline as early as 1993, when millions of AOL users dropped into what had been a geek paradise. As the nineties went on, the eye candy of the Web and the marketing dollars of site owners helped push people over to profit-making proprietary bulletin boards, or to multimedia extravaganzas like MySpace. An epic cataclysm of spam and sputtering plagues of obscene flaming, meanwhile, made Usenet a much more hostile environment than it had been previously.

The Web also gave Usenet a new life through the mid-nineties as a searchable database of questions and answers, via DejaNews and Google. But searchability killed off some of Usenet's social functions. More chaotic and ad hoc groups functioned through a sort of security in obscurity: As long as nobody clicked there, nobody would know what people were talking about. With Google Groups, every word you wrote became enshrined and



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DAN COSTA

The iPod Touch: It's Got Game

When Steve Jobs introduced the new iPod touch in September, calling it "the funnest iPod ever," it wasn't just a throwaway line. Essentially, Apple just jumped into the portable gaming market with two big, touch-sensitive feet: the iPod touch and the iPhone 3G. And Nintendo and Sony should be very, very afraid.

Sony and Nintendo have had a huge head start in this market. There are millions of Nintendo DS Lites out there. And Sony's three-year-old PlayStation Portable remains the most powerful portable gaming platform ever invented. The iPod touch 2G, with its big, beautiful high-res screen, can certainly hold a candle to Sony's

Sony never intended for the PSP to appeal to this audience. It has some crossover appeal among the nongamer crowd, but the PlayStation brand was always about serious gaming performance (probably to its detriment). As a result, Nintendo has dominated the casual gaming market.

Nintendo has sold millions of GameBoy DS and DS Lite gaming devices, not just to kids, but to ADD-afflicted adults who simply can't stand waiting without some digital distraction. Throw in the casual users, like myself, who will play any damn card game on their phones while waiting for an elevator to go up 11 floors, and you have a market of millions.

Sony might stay competitive if it further cuts the PSP's price, but remember, the touch is also a great music player, video playback device, and Web browser.

graphics dazzle. But so what? Most of us don't want to chase down and kill realistically rendered virus-infected mutant zombies on our handhelds. We just want to kill some time.

When you're waiting in line at Starbucks tomorrow for your daily caffeine fix, check out what the guy in front of you is doing on his phone. Half the time he'll probably be checking e-mail, but the other half? I bet you'll see him playing some cheesy, low-resolution game like Tetris. This is the future of portable gaming.

I speak from experience. Every morning on my train ride to work, I check my e-mail and newsfeeds on my BlackBerry Curve 8330. On the way home, though, I just want to unwind. That's when I call up BrickBreaker, which ships with every new BlackBerry. And I'm not the only one. Everybody on the train is playing it. If not that, then Solitaire, Scrabble, or some Sudoku clone.

Since it's always in your pocket, a cell phone can really excel as a gaming device. Or at least it could, if it just had a little more processing power, a slightly larger screen, and an easy way to download games. In other words, if it were an iPhone. Any phone will do in a pinch, but only the iPhone 3G and the iPod touch let you actually pinch the screen to move around.

Why am I so bullish on the iPod touch/iPhone 3G as a gaming platform?

1. THE TECHNOLOGICAL EDGE. Not in terms of pure processing power, as the PSP kills the touch 2G in this regard. Still, a solid interface and a well-executed design can go a long way. This is why the Nintendo Wii has outsold the much more powerful Sony PS3 and Xbox 360. It's simply fun to use. With a multitouch screen and an accelerometer, the iPod touch offers the same edge.

2. BROAD PLATFORM SUPPORT. Of the more than 3,000 applications available on

iTunes, 700 are games, and more are being added every day. Many of them are fairly basic, but that's the heart of the casual gaming market.

3. DIGITAL DISTRIBUTION. Though Apple hasn't quite opened up the iPhone/iPod touch platform the way I would like, I have to admit that the company certainly simplifies getting its software out to users. Having the iTunes App Store loaded on millions of PCs and portable devices makes distribution a snap. To buy new PSP or Nintendo DS games, you have to go to (ahem) a retail store!

4. SALES TRENDS. Nintendo's GameBoy and Sony's PSP may have had a big lead, but Apple is catching up fast. Between April and June, Sony sold 3.72 million PSP units worldwide, while Nintendo sold 6.94 million GameBoy DS units. Investment bank Piper Jaffray estimates that Apple will sell 4.47 million iPhones in the fourth quarter of this year. And that number doesn't even include the new, more affordable and AT&T-contract-free iPod touch. There are still plenty more PSPs and GameBoys on the market than iPod touches, but the sales trends favor Apple.

Sony might be able to stay competitive if it further cuts the price of the PSP, but remember, the touch 2G is also a great music player, a video playback device, and a Web browser. The iPhone 3G, of course, has the added benefit of being able to place calls, too.

Jobs has called the iPod touch the "best portable device for games." It's a bold statement, maybe too bold. I think he should probably give the PSP that title, especially now that prices have fallen to around 170 bucks. Now if he said it was the best device for casual gaming, I would buy it. And since my three-year-old iPod is on its last legs, I just might.

Game over.

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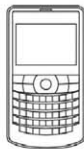


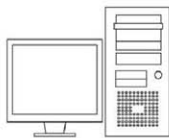
In a year when the economy isn't going to win "the best of" anything, it's more important than ever to know where to spend your dough. Our team of analysts puts products through rigorous tests to discover the winners and dismiss the duds, all rounded up in the following pages. To get the real nitty-gritty on features, flaws, and performance, follow the links to in-depth reviews at PCMag.com.

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THE BEST DESKTOPS

Work Hard, Play Hard

Sony VAIO VGX-TP25E

The PC that your 65-inch plasma wants to meet, Sony's VAIO VGX-TP25E (\$3,000 direct) is an attractive home-theater PC meant to sit in the cabinet next to the widescreen HDTV. As a home-theater system, it drops some features common to desktop PCs yet adds others that acclimate it to the living room. Though it isn't perfect, the "mostly wireless" TP25E is a good choice for the HD-consuming connoisseur.

go.pcmag.com/sonyvaio/gx



THE WORST

Velocity Micro Edge M40 On paper, this is a great system, but because of a flaw that's not really Velocity Micro's fault, the Edge is a bit underwhelming. The performance of the dual graphics card is a deal breaker.

iBuyPower Gamer Mage With a quad-core processor and a dual-GPU graphics card, this should be a real screamer. Its performance numbers tell a different story.

HP Pavilion Elite m9400t

The m9400t (\$843 list) has most everything you'd want in a media-creation system, without those expensive extras you don't. HP has built in as many inputs and outputs as an A/V receiver in a home theater. This is the Windows PC you'll want when you get serious about the photos and videos you shoot and the shows you watch.

go.pcmag.com/m9400t



Velocity Micro Raptor Signature Edition

The best gaming system we've seen. Its blazing, top-of-the-class performance coupled with middle-of-the-pack pricing (\$6,999 direct) makes the Raptor a hands-down winner. The overclocked processor helped this rig dominate all but one of our gaming tests. But the Raptor is more than a killing machine. It's got multimedia muscle. This system is so fast it will complete your photo or video edit before you have a chance to think about what you want to do next or become entranced by the spinning circle cursor.

go.pcmag.com/raptorsig

Apple iMac (24-inch Penryn)

This iteration (\$1,799 direct) is powered by the Intel Penryn Core 2 Duo CPU, which means lower energy usage and enough speed to do serious work. The extra power helps the iMac maintain its place in the vanguard of all-in-one PCs. Resolution is the same as a Mac Pro with an Apple 23-inch Cinema HD screen, big enough to view true HD video content.


go.pcmag.com/imac24



Falcon NW FragBox QX9650

The roaming gamer has reason to rejoice: The Falcon FragBox is now available with the latest graphics, and its 3D performance is impressive. With an Intel Core 2 Extreme QX9650 processor overclocked to 3.8 GHz and a blazing ATI Radeon HD 4870 X2 graphics card with two GPUs, the FragBox is quite adept at keeping you alive on the game grid. At \$4,095 (direct) it's not cheap, but it's a bargain compared with high-end gaming PCs that reach closer to \$8,000 for a similar level of performance.

go.pcmag.com/falconfragbox



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THE BEST NOTEBOOKS

Small Wonders

Dell Studio 15

The Studio 15 (\$1,229 direct) is a stylish 15-inch laptop that outperforms many of its competitors; it led the pack on our Photoshop and video encoding tests. Photographers will like the four-in-one card reader. A wide array of upgradeable features and configuration options really makes the Studio 15 shine.

go.pcmag.com/studio15

Sony VAIO VGN-SZ791N

With a powerful Penryn processor, excellent performance, bright 13-inch screen, full-size keyboard, discrete graphics, and cellular modem, Sony's SZ791N is one of the best ultraportables on the market. This VAIO is a bit pricey (\$2,499 direct), but travelers will love the 5-hour battery life.

go.pcmag.com/vaioultra



Lenovo Thinkpad T400

The T400 (\$1,580 direct) is the culmination of years of building on a solid foundation, including the best parts, features, and materials in a fairly ho-hum chassis. At 5.2 pounds, the T400 is one of the lightest 14-inch business laptops you can find. It brings features such as Intel Centrino 2's Switchable Graphics, fine resolution on an LED screen, three USB ports, a 160GB hard drive, and a variety of wireless options, plus it delivers an outstanding typing experience, all for a very good price.

go.pcmag.com/thinkpadbest

MSI Wind

At \$480 (street), the Wind is the best ultraportable PC deal on the market, complete with Intel's energy-efficient Atom platform, a good 10-inch screen, and an 80GB hard drive. Weighing in at 3 pounds, the system packs three USB ports, a four-in-one card reader, VGA-out, an Ethernet port, plus 802.11g Wi-Fi.

go.pcmag.com/msiwindultraportable



Alienware Area-51 m15x

The smart appearance of the m15x (\$4,499 direct) is accompanied by some of the best mobile performance and hardware money can buy. Even better, it's all squeezed into a relatively light (for a high-octane gaming laptop) 7.8-pound chassis. The Intel Core 2 Extreme processor plus Intel's 965GM integrated graphics and NVIDIA's GeForce 8800M GTX, an ultrasharp 1080p screen, and a high-speed hard drive make this the system for demanding fraggers on the go.

go.pcmag.com/area51m15x

THE WORST

Velocity Micro C90 Ultra Campus Edition

Despite some nifty features like an actual desktop CPU and an nVidia graphics card for under a grand, the C90 doesn't outperform most current laptops, and its battery life is appalling.

WiBrain B1H A handheld PC the size of a Sony PSP that runs a full-blown version of Windows XP Professional sounds good, but the B1H lacks features offered by better and more affordable ultraportable PCs.

Sony VAIO VGN-TZ298N It's got dazzling looks but is insanely expensive. And this VAIO is severely underpowered. Not including an optical drive was not a good idea.

HP HDX 18t

A remarkable 18.4-inch screen, superb 1080p resolution, ATSC TV tuner, Blu-ray burner, and outstanding performance numbers all scream high-end multimedia laptop. HP's 8.7-pound HDX 18t (\$2,000 direct) isn't just for watching movies. This desktop replacement can serve video-editing professionals and content creators as well.

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THE BEST MEDIA DEVICES

Media Elites



Sonos Bundle 150

Sure, the entry fee is a bit high, but this is the premier home wireless audio system. Sonos, an ever-evolving combination of hardware, software, and partnerships, uses your Wi-Fi network to access your PC's or Mac's music collection and stream it to as many zones as you choose to set up. It will even play different songs in different zones (rooms) simultaneously. The Bundle 150 (\$999 direct) starter system comes with two ZonePlayers and the fabulous remote controller. It's easy to set up, and the user interface is excellent. Integration with your current music collection, including iTunes, is seamless.

go.pcmag.com/sonosbundlebest

Razer Mako 2.1

Razer's computer speaker system (about \$400 street) features new THX-developed technology that employs down-firing drivers: By using the surface of a desk as a reflective tool, the Mako is supposed to be able to disperse sound more evenly throughout a room. Do these pod-shaped speakers actually deliver on this promise? That's debatable. What isn't up for debate is that they sound awesome—excellent for gaming and movies (intense explosions!) and for music (deep bass!). For the price, that's how it should be.

go.pcmag.com/razerspeakers

Sennheiser MX W1

Sennheiser's wireless earphones provide a glimpse of what we hope is the future of wireless audio. For the first time, Klee's wireless audio technology has been implemented in a quality product. Klee sounds fantastic with the MX W1. Audiophiles won't be able to tell the difference between these and wired earphones.

go.pcmag.com/sennheiserearphones



Logitech Squeezebox Boom

A natural progression from a company that makes top-notch speakers for PCs and iPods, Logitech's Squeezebox Boom (\$299.99 direct) music streaming device incorporates wireless access to your computer's audio library and to music services like Pandora and Slacker. The Boom will stream most of your music collection, including MP3s and WMAs. Its mildly confusing interface requires patience, but the speakers sound great and rarely distort.

go.pcmag.com/squeezeboom

THE WORST

Tivoli Audio Networks Radio Tivoli Audio crafts beautiful, high-quality audio devices, but it can't fix Internet radio's most damning problem: It just doesn't sound good—even on spare-no-expenses speakers.

Cowon Q5W A glamorous mess. Cowon's baffling portable media player does nothing with grace or speed, and something as simple as finding the music menus can be a daunting task.



Apple iPod Touch (2nd generation)

The iPod touch (\$229 to \$329 list) remains the best portable media player on the market, period. Looking at photos on the iPod touch is a joy with the iPhone-style pinch-and-expand method of zooming. And watching video is the best viewing experience currently available on a portable media player. The glass screen is crisper, brighter, and larger than that of any other device out there.

go.pcmag.com/ipodtouch2nd

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Editors' Choice**

"Spector 360 is the most mature surveillance offering for business use."

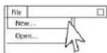
June 17, 2008
Spector 360

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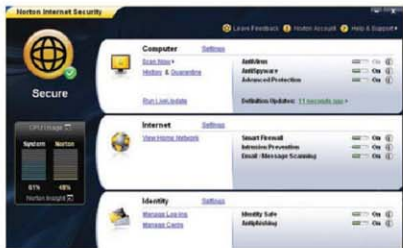
Spector 360

Company-Wide Employee Monitoring Software



THE BEST SOFTWARE

Defenders of Your Realm



Norton Internet Security 2009

The best all-around security suite we've seen yet. Definitely the slimmest, most unobtrusive Norton ever, it provides top-notch defense where it counts. Extremely effective spyware and virus protection, comprehensive firewall, superfast malware scanning, antiphishing functions, "pulse updates" that check every few minutes for new signatures, and minimal performance impact combine to make the 2009 edition (\$69.99 direct for three licenses) a terrific security solution. The spam filter, though, blocks too many valid messages.

go.pcmag.com/norton09best

Cloudmark Desktop (5.3.3) for Outlook

All the algorithms in the world can't match the human mind as a spam-catching tool. Cloudmark pioneered the concept of community-based spam filtering and uses its million-strong community to block spam accurately. Cloudmark Desktop 5.3.3 for Outlook (\$39.95 direct) virtually never blocks valid e-mail in error. Where many antispam products filter only standard POP3 e-mail, Cloudmark works with most types, including POP3 and IMAP, Web mail accessed via POP3, and (for Outlook only) Exchange-based mail accounts.

go.pcmag.com/cloudmark533

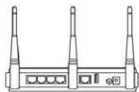
THE WORST

a-squared Emergency USB Stick The idea is that you plug the USB stick into a computer and clean up malware. But in our testing, Trojan horses infected the stick, turning it into a malware delivery device.

Garbage Clean 3.0 SecureMyWindows improved its malware-removal accuracy from abysmal to dismal. It still offers no real-time protection, and now you have to pay for malware removal.

MobileMe Apple's new online service offers some fine features, but users suffered through a buggy launch that included lost e-mail and sudden logoffs.

FreeDrive FreeDrive offers less free storage than competing sites and little to recommend it over Xdrive or Windows Live SkyDrive.



THE BEST NETWORKING PRODUCTS

Well-Connected

Omega StorCenter 150d (3TB)

Providing much of what higher-end devices do but at a fraction of the price (\$1,699 list), this NAS box offers an impressive 3TB of hot-swappable storage in the form of four 750GB SATA II drives. An easy-to-use front end to the embedded Linux-based OS makes both setup and administration simple.

go.pcmag.com/omega3tb



THE WORST

ZoneAlarm Secure Wireless Router Z100G

Serviceable security, but wireless-g only, with no Gigabit Ethernet, and the subscription for advanced security features seriously pushes up an already high price.

D-Link Xtreme N Duo Media Router (DIR-855)

Great wireless performance makes this the dual-band king in our tests. If the price (\$359.99 list) isn't too much for you, you'll find that the feature-rich DIR-855 makes an excellent home or business wireless router.

go.pcmag.com/dlinkmedia



Model HT09

WORLD'S FIRST FULL HD 27.5" LCD TV

The Hannspree HT09 is the world's first Full HD 27.5-inch LCD television, delivering stunning imagery and sharp picture quality typically found on most large-screen LCD TVs. It is perfect for those spaces where a 32-inch or larger TV will not fit: dorm rooms, bedrooms, or RV. The HT09 provides nine video inputs, including two HDMI™ ports, for connecting devices such as HD antenna, cable set-top box, gaming console, DVD/Blu-ray™ player, PC, and camcorder, making it truly a multi-function display. Combined with Full HD 1080p resolution, ultra-fast response time, and high contrast ratio, users will enjoy an enhanced viewing experience whether watching a movie, sporting event, or playing a computer game.

Input Connectivity:



Antenna (HD)



Set-top Box (HD)



Computer



DVD/Blu-ray™ Player



Gaming Console



Camcorder



Headphones

Technical Specifications

- Screen Size: 27.5" TFT LCD
- Aspect Ratio: 16:10
- Resolution: 1920x1200
- Response Time: 3ms(GTG)
- Brightness: 500cdm2
- Contrast Ratio: 3000:1 DCR
- Viewing Angle: 160°/160°
- Tuners: ATSC + NTSC + Clear QAM
- Inputs: RF, HDMI x2, Component, S-Video x2, Composite x2, VGA, Mini-Stereo



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 SAN FRANCISCO 400 Sutter Street, San Francisco, CA 94108, Phone 415.986.3300

www.hannspree.com/us



THE BEST CAMERAS

Straightest Shooters

Nikon D300

The Nikon D300 delivers the entire package, with an abundance of well-executed features, stellar performance, and excellent-quality shots. Even with its hefty price tag (\$1,800 to \$2,539.95 street), it's one of our favorite D-SLRs.

go.pcmag.com/nikond300

Canon PowerShot SD790 IS

Canon's sleek 10-megapixel PowerShot SD790 IS (\$349.99 list) pumps out outstanding images that are likely to please just about everyone. The newly designed click-wheel control is fast and effective (once you get used to it), and motion-detection technology adjusts exposure for action shots.

go.pcmag.com/canonpower790



Canon PowerShot A1000

At \$199, this is the least expensive 10-megapixel camera from Canon, and it's an excellent choice for people who do most of their shooting in automatic mode. Even if you're a more advanced photog, you'll appreciate how quickly you can focus, snap, and repeat.

go.pcmag.com/canona1000

Panasonic Lumix DMC-FZ18

An excellent value. The 8.3-megapixel Lumix DMC-FZ18 offers a 28mm wide-angle lens and 18X optical zoom and delivers above-average image quality, all for \$349.95 (list).

go.pcmag.com/lumixfz18

Olympus Stylus 1030sw

Take this one along when visiting Aquaman. The tough, waterproof Stylus 1030SW (\$399 list) takes terrific pictures in practically any situation, including underwater and in treacherous weather or terrain. Shutter speed could be speedier, though.

go.pcmag.com/olympus1030

THE WORST

Nikon Coolpix

S210 Proving that beauty is skin-deep, the slim, attractive Coolpix S210 produces soft, noisy images riddled with color fringing.

Casio Exilim

z250 Images are sharp in the center but corners dropped by an average of a whopping 85 percent.



THE BEST PHONES

Greatest Communicators

THE WORST

Neonode N2 This cute little phone had a lot of things going for it (nice touch screen, great interface). But connecting calls was not one of them. Totally recalled in July.

ASUS P527 Awkward and underpowered, the P527 is a frustrating platform for any use.

Nokia 3555 Dull design, a nearly unreadable screen, and a flimsy keyboard made a poor device for the launch of T-Mobile's 3G network.

Deadeast Carrier: Helio Supposedly founded to bring cool Asian phones to the States, Helio flailed before being snapped up at a bargain rate by Virgin Mobile.



LG Dare VX9700

With its easy-to-use interface, top-notch media player, good Web browser, and excellent camera and video modes, the LG Dare (\$199.99 to \$399.99 list) is a blast to use. Plus, it's attached to Verizon's top-rated network. Voice quality is good, and battery life is superb.

go.pcmag.com/ldare9700

Apple iPhone 3G

The 3G (\$199 to \$299 list) is one of the best handheld computers ever. True GPS, media capabilities, and hundreds of programs through the App Store give it an edge. The phone isn't the greatest, but it's a big improvement. By now Apple should have fixed the bugs that marred some of the initial units.

go.pcmag.com/iphone3gbest

BlackBerry Curve

Available on every major carrier, the Curves (\$179 to \$599 list) are swift, stable smartphones that keep you connected via voice, e-mail, and the Web. Near-perfect design meets a well-balanced feature set, including an excellent QWERTY keyboard, GPS, camera, and the best mobile e-mail options around.

go.pcmag.com/bbcurve

Sanyo PRO 200

The Sanyo PRO 200 (\$49.99 list) is nonsense, no-guff, no-extra-stuff—exactly what you want in a Sprint voice phone. Call quality is excellent, and the speakerphone is loud.

go.pcmag.com/sanyopro200

30 million computer users don't trust the power grid.



APC Back-UPS ES 750G with SmartShutting™ Technology automatically powers down idle peripherals to save energy and money.



They do trust APC. Shouldn't you?

Think of all that you rely on your computer for: personal and business files, financial information, broadband access, videos, photos, music, and more. Increasingly, computers are the hub for managing our lives. And more people rely on APC to protect their hardware and data than any other uninterruptible power supply (UPS) brand.

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"The pricing 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.



THE BEST PRINTERS

Positive Impression

Brother MFC-6490CW

For the small office that needs to print and scan at tabloid size (11 by 17 inches), Brother's all-in-one MFC-6490CW (\$300 street) makes it very affordable. The device prints, scans, and faxes over a network; works as a standalone fax machine/copier; and can attach a scanned document to an e-mail.

go.pcmag.com/brothermfc

HP Photosmart Pro B8850 Photo Printer

The Photosmart Pro B8850 (\$5,499 direct) makes it easy and relatively affordable to print high-quality photos at up to 13 by 19 inches. The system uses eight inks, based on pigments rather than dyes, which contributes to superb color output.

go.pcmag.com/hpphotoprinter



THE BEST HDTVs

Best Pictures On the Block

Samsung LN52A750

Producing a well-contrasted picture is perhaps the most important task a TV can tackle, and the 52-inch LN52A750 (\$3,999.99 list) delivered the best contrast results we've seen in an LCD HDTV. Color quality is outstanding, and the unit preserves fine detail while minimizing distracting image artifacts.

go.pcmag.com/samsungln

Pioneer KURO PDP-5020FD

The finest flat-panel HDTV picture we've seen so far. With its 50-inch KURO PDP-5020FD plasma (\$4,000 list), Pioneer delivers superb HD video processing, stellar picture contrast and color accuracy, top-notch sound, and network multimedia support. Side benefit: It consumes less electricity than comparable TVs.

go.pcmag.com/pioneerkuro



HP Color LaserJet CM1312nfi MFP

Ever wish for a color laser all-in-one that will fit into your small office or home office and give you all of the features you need at a price you can justify? The HP Color LaserJet CM1312nfi MFP (\$499.99 direct) might be just what you wished for. It's not perfect, but output is excellent, and HP does not skimp on features.

go.pcmag.com/hpcolormfp



LG 47L660

LG's 47-inch HDTV (\$3,499.95 list) offers excellent picture quality and LCD technology that minimizes motion blur while maintaining good color at even the widest viewing angles. Videophiles will also appreciate the excellent HD video processor and terrific picture controls.

go.pcmag.com/lg47hdtv

Samsung ML-2851ND

At \$300 street, this isn't the least expensive personal monochrome laser on the planet, but it may be the best bargain. The ML-2851ND leaves its closest competition in the dust, with fast speed, high-quality text, and low cost per page.

go.pcmag.com/samsunglaser

THE WORST

Lexmark X4650

This basic multi-function inkjet is adequate but prints slowly. People on a budget would fare better with one of the competing models.

Kyocera FS-1300D

It is never going to win any awards for print quality or for speed—slow and steady is the better description. But if you print enough pages with it, the initially high cost of ownership (\$530 list) does indeed come down.

Panasonic TH-46PZ85U

The 46-inch, 1080p TH-46PZ85U (\$1,199.95 direct) produces a video black that results in wonderful picture contrast and color saturation. This model also improves on the company's historically solid processing of standard-definition material, ensuring that non-HD video will look exceptional.

go.pcmag.com/panasoniciviera

Westinghouse TX-52F480S

A big, pleasing picture at a very good price (\$2,000 street). In fact, it's the best value in a 1080p, 52-inch LCD TV we've seen. Equipped with a generous selection of 1080p-compatible video inputs, this set has picture controls that help its more than two million pixels deliver crisp, detailed images.

go.pcmag.com/westinghousefx

THE WORST

ViewSonic N4785p

A very bright picture makes this 47-inch LCD stand out on the shelves at the store, but the unit struggles with picture quality, including jaggies.

Mitsubishi LT-52148

The 52-inch LCD's ability to handle fast motion scenes is overshadowed by image artifacts, unnatural skin tones, images that appear too sharp, and above-average power consumption.

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- Ubuntu Linux Pre-Installed



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2go™ PC

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Gift Guide for Geeks

By now you know what our favorite hardware and software products of the year are (and if not, see page 65). Still stumped about what to buy that special someone? Check out these hot gadget gifts, games, stocking stuffers, and tech toys for kids.

1 Westinghouse PT-16H610S

\$349 list

www.westinghousedigital.com

If only you could see the ginormous, wall-mounted HDTV in your living room from the kitchen, two rooms away. This portable, compact, 16-inch widescreen LCD TV is perfect for tight spots in the house.



2 Monster Beats by Dr. Dre

\$349.95 list

www.monstercable.com

Dr. Dre clearly did his homework before backing these headphones, which produce a deep bass response and active noise cancellation. They're pricey, yes, but if you're into hip-hop, electronic, or louder rock music in particular, these are for you.



3 GPS Snitch

\$299.99 list

<http://gps-snitch.com>

This easy-to-hide, cell-phone-size device can help you locate a lost or stolen personal item, such as a bicycle or car, via GPS. Its motion-sensing technology alerts you via e-mail or SMS instantly when your stuff is on the move. Or use it to help friends and family keep tabs on you if, say, you're going hiking in a remote area.



4 HP d1300a1

\$59.99 list

www.hp.com

Play slide shows of the family wherever you are—your hotel room during a business trip or a restaurant during lunch with friends—with this stylish, compact 3.5-inch digital picture frame. Internal memory holds 45 photos, plus there's an SD slot, of course.



5 Buffalo Technology MiniStation Shinobi

\$119.99 for 30GB, \$169.99 for 60 GB list

www.buffalotech.com

They don't get slimmer and sleeker than this. This 1.8-inch portable hard drive is just 5mm thick and weighs only 2 ounces. But looks aren't everything. Buffalo includes intuitive backup and sync apps, plus its SecureLockMobile utility, which locks the data if the drive is lost or stolen.





6 Logitech Pure-Fi Dream

\$199.99 list

www.logitech.com

This iPod speaker dock offers a rich sound, not to mention several useful features, including an alarm clock (with motion-controlled snooze) and FM radio.

7 Polaroid PoGo Instant Mobile Printer

\$150 street

www.polaroid.com

The inventors of instant photography have come up with a gadget that delivers print photos anytime, anywhere, in the digital age. This pocket-size printer weighs just 8 ounces, and uses ZINK technology—the ink is already on the paper, so no cartridges are necessary.



8 Vuzix iWear AV310 Widescreen

\$249.95 direct

www.vuzix.com

Turn your head into a home theater with this wearable widescreen display, which is compatible with any audio/video device with composite video-out. Stereo earphones are attached to the device, which you wear like eyeglasses. You may feel a little dorky at first wearing these, but you'll end up feeling like the most cutting-edge geek on the block. One AA battery delivers up to 11 hours of viewing.



9 Kodak Zi6 Pocket Video Camera

\$179.99 list

www.kodak.com

Low-priced, mini camcorders have been all the rage this year, but this one reigns supreme. Why? HD. The video quality of the Zi6 blows the competition out of the water. Plus, unlike the other models, it shoots still images. The Zi6 comes with 32MB of onboard memory and has an SD/SDHC card slot. It's heavier than the other models, but worth the weight.



Stocking Stuffers



Belkin Laptop CoolStrip
\$19.99 list

www.belkin.com

This cool-looking strip of rubber keeps your laptop from overheating, lifting it in the back so it can breathe. You can work your cords around the CoolStrip's "fingers," too.



HP SimpleSave Photo DVD-R
\$14.99 for 5-pack

www.hp.com

Back up photos just by loading this DVD. It will find all the photo files on your PC, then automatically copy the ones you choose onto the DVD. Music and data DVDs are also available.



Kensington LiquidAUX for iPod and iPhone
\$79.99 list

<http://us.kensington.com>

Enjoy tunes on your iPod or iPhone in your car with this kit, designed for vehicles with auxiliary ports. Includes a wireless remote control.



Radius Atomic Bass Earphones
\$39.99 list

www.radiusproducts.com

These inexpensive earphones deliver impressively booming bass. The earphones fit comfortably and securely, and they're fairly good at blocking out background noise.

Give your iPhone or BlackBerry® more than double the juice.*

Finally, 1800mAh in a pocket-size backup battery!

by Richard Thalheimer

Thinking of getting a backup battery for your iPhone or iPod?

The new RichardSolo 1800 has capacity and features that distinguish it from the competition. There's also a separate BlackBerry version as well.

Large 1800mAh capacity will charge the iPhone or BlackBerry completely to full, with more power left over for later charging.

Just snap it on-no cable required! Even fits with many cases.

110-240v AC wall charger included for fast charging. And, you can use the iPhone while charging it, and you can charge the RichardSolo 1800 and iPhone (or BlackBerry) together at the same time, with the included USB cable, AC wall charger, or USB car charger — like getting two extra chargers for free!

The dual-port USB car charger will charge the RichardSolo 1800 and power another device. The RichardSolo 1800 also features a built-in laser pointer, and super bright LED flashlight, with lock button to prevent accidental use.

For iPhone, sturdy support brace holds iPhone and RichardSolo 1800 securely together. And, this is the only snap-on battery available with an actual iPhone latching mechanism, to keep the RichardSolo 1800 and iPhone firmly attached.

Polymerized lithium-ion battery takes hundreds and hundreds of charges. Three LED lights indicate charge status. RS001 works with 2G/3G iPhone, and all iPod models except shuffle. RS007 works with all BlackBerry models.

Your satisfaction is completely guaranteed, with our 30-day no-hassle return privilege, and a 90-day warranty. You will be absolutely delighted. That is my promise, and you can depend on it.

Order now for free USA and Canada shipping:

RS001 for iPhone RS007 for BlackBerry \$69.95

Order two of the same, and save 15%

Hours of use may vary, depends upon many factors, including type of use, network, and connection speed. *Extreme of "More than double the juice" is based on charging iPhone when its battery shows red. iPod is a trademark of Apple Inc., registered in the U.S. and other countries. iPhone is a trademark of Apple Inc. BlackBerry is a registered trademark of Research In Motion Ltd.



Built-in super bright LED flashlight.



Built-in laser pointer.



We are here to support you!

These are actual customer comments:

I had read a number of glowing reviews about RichardSolo quality, and am thrilled to discover your support is top notch. Thanks again for the fantastic customer care — you've certainly gained my loyalty.

— D.G.

I'm sure you can appreciate how little true "customer service" is evidenced in today's business environment. To have you and your company exhibit such exceptional service is unbelievably refreshing. Thank you, Thank you, thank you!! I will be highly recommending your company to anyone I encounter.

— P.S.

Dear Richard and Team: This is what I call great customer support. I wish more companies would figure this out these days. Thank you so much.

— D.C.

I've tried ALL the others products AND yours is the ONLY one that works correctly!!!!

— H.L.

Your service and attention was first rate and I will recommend that all my friends with iPhones or iPods purchase your product with confidence that if there is a problem, you guys will fix it!! Good customer service is getting more rare each day so a big THANK YOU to you and your company.

— T.C.

You have provided me one of the best services I have ever encountered on any on-line/telephone shopping.

— T.K.

Richard, thank you. That was the fastest response I have ever received. Great product by the way. Appreciate the assistance.

— M.W.

This is absolutely the best customer service experience I have had in a long time.

— L.L.

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CHARGER

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CANADA
SHIPPING

Tech Toys

1 FurReal Friends Biscuit My Lovin' Pup

\$179.99 list
www.hasbro.com

This furry, lovable mutt whimpers, wags his tail, blinks his eyes, and wiggles his ears like a real dog. With nine sensors, he reacts to sound, light, and touch, and responds to six voice commands (including "Sit," "Lie down," and "Give me a paw"). For ages 5 and up.

2 Speak! IPig

\$139.99
www.speakal.com

Don't let looks fool you. This cute iPod dock and charger packs a lot of power. It features 360-degree nondirectional surround sound, a subwoofer, remote control, and a patented touch volume control—just tap the ears. For all ages.

3 Leapster Tag Reading System

\$49.99 list
www.leapfrog.com

Preschoolers learning to read will love this pen-like device. They can use it to point to any word or picture in the 20-plus Tag books available, and the pen will read the story, lead them in a game, or make the characters in the book come alive. For ages 4 to 8.

4 Disney Camp Rock Electric Guitar

\$99.99 list
www.disneyshopping.com

This is no kiddie toy guitar. The 3/4-size electric guitar features two chrome-covered humbucker pickups, a hardwood body, a 3-way pickup selector switch, a rosewood fingerboard, and volume and tone controls. It plugs into any amp. For ages 6 and up.

5 Vtech V-Motion Active Learning System

\$69.99 list
www.techkids.com

Consider it the Wii for the wee set. This console offers more than 40 educational games that get kids off the couch and keep them moving. It plugs into your TV, and players use the wireless controller to play the games. For ages 3 to 7.



ZT recommends Windows Vista® Home Premium.



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ZT Affinity Desktops featuring Intel® Core™ 2 Quad Processors

ZT Affinity 7243Xi Desktop

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LATEST MOBILE
TECHNOLOGY

Model #: ZT N4003i 37



With over 14 years building personal computers in the USA, ZT Systems is the winner of numerous industry awards. ZT Affinity means the latest technology for less, with quality you can trust and the peace of mind of lifetime toll-free technical support.

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6



7



8

Games

XB360

Braid

Microsoft; \$15 street; rating: E10

This action game isn't afraid to make you feel like an idiot with its puzzles, but the eventual solutions are all the more satisfying for it.

PC

Command & Conquer 3: Kane's Wrath

Electronic Arts; \$20 street; rating: T

An excellent strategy expansion, featuring the most incredible thing to happen to the series since the sonic tank.

PS3/XB360

Devil May Cry 4

Capcom; \$40 street; rating: M

Gorgeous trappings, addictive combat, and well-balanced difficulty make it the most satisfying DMC in years.

PS3/XB360

Grand Theft Auto IV

Rockstar Games; \$55 street; rating: M

The most vibrant, dynamic, and entertainment-packed playground in console video game history.



PS3/XB360

Madden NFL 09

Electronic Arts; \$90 street; rating: E

Improvements to this football game one-up the stakes between the sidelines, and it's so visually impressive that it's likely to stick in your system all season long.



PS3

Metal Gear Solid 4: Guns of the Patriots

Konami; \$60 street; rating: M

Solid Snake returns, and every aspect of MGS4 holds untold surprises, like the wild new "flashback" mini-game.

XB360

Rock Band 2

XB360; MTV Games; \$50 street; rating: T
Your neighbors might never sleep again.

PC

Sins of a Solar Empire

Stardock; \$38 street; rating: T

Conquer intergalactic worlds, engage in giant space battles, and maybe even learn the lessons of a never-ending occupation.

—From the editors of *TUP.com*

6 Disney Pix Jr. Digital Camera for Preschoolers

\$49.95 list

www.disneyshopping.com

This rugged, easy-to-hold camera has 1.3 megapixels, 32MB of internal storage, an SD slot, and a 1.5-inch LCD in back. Kids can take regular photos or add Disney characters or colorful frames to them using the included software. Three styles are available: My Friends Tigger & Poo, Mickey Mouse Clubhouse, and Disney Princess. For ages 3 and up.

7 Dora and My Rescue Adventure book

\$39.99 list

www.shutterfly.com

This is the perfect, personalized gift for a young child who enjoys reading. Just submit a headshot of your child, as well as a few details, like the child's birthdate and hometown and the book embeds your child into the story's adventure with Dora the Explorer. Similar books with Sesame Street themes are also available. For ages 1 to 6.

8 Leapster 2 Learning System

\$69.99 list

www.leapfrog.com

More than 30 educational games are available for this handheld gaming gadget, an update to the popular LeapFrog. Added features include SD card support and a USB connection to your PC for downloading new games and rewards. For ages 4 to 8.



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— GRAHAM REED, *NEW YORK DAILY NEWS*

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— JONATHAN TAKIEFF, *PHILADELPHIA DAILY NEWS*

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— RICH WARREN, *NEWS-GAZETTE*

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●●●●●○

Smartphone Central

The latest, greatest devices on the BlackBerry, Apple, Windows Mobile, and Symbian platforms. Plus a sneak peek at the hottest handsets on the horizon. *By Sascha Segan*

Your PC is finally leaving into your hand, in the form of a smartphone. Sales of these multitasking devices are booming—in the United States, they jumped 84 percent in the past year, according to research firm NPD, and now constitute 19 percent of the handsets sold in the U.S.

Prices are dropping a bit, too, with the average smartphone now costing around \$185, down from \$199 last year, according to NPD. So far this year, the iPhone 3G and the BlackBerry Bold 9000 have been the most buzzworthy. By the end of this year, a slew of additional hot "pocket PCs" will have hit the market (see "Coming Soon" on page 94).

We define smartphones as handhelds running open operating systems that give

third-party programmers full access to develop apps that make the phones more useful. This is what makes smartphones more like PCs than like traditional phones.

Basic smartphone applications include those for contact and calendar management, e-mail and Web browsing, media playback, and GPS navigation. But these devices really come alive when you start customizing them to your taste, adding apps like your favorite streaming Internet radio player.

The majority of smartphones sold today are on one of four major platforms: BlackBerry, Apple, Windows Mobile, and Symbian. Each has its advantages. BlackBerrys are fast and stable and are tops with e-mail. The Apple iPhone defines elegant

handset design and is tremendously fun to use. Windows Mobile phones come in many shapes and sizes, from a variety of manufacturers; they are available on all mobile carriers and work well with Windows PCs. Symbian devices often have stellar integrated cameras and top-notch Web browsers.

There are two additional operating systems that we won't cover here: Palm and Google's Android. The Palm OS once ruled the world of smartphones, but now few products are available, and it no longer enjoys a significant market share. The one Palm OS phone left on the market, the inexpensive Centro, is still a good choice for those who need little more than basic contact and calendar functionality.

Google's Android OS may very well be the wave of the future, but the first handset for Android, T-Mobile's G1, just hit the shelves this fall. It looks to be a strong competitor, though.

A growing number of less expensive "feature phones" are also imitating the look and feel of smartphones, with big screens, full Web browsers, and lots of extra features. Yet while devices like the LG Dare for Verizon look and feel like the real thing, they generally don't have the easy PC syncing abilities or the range of third-party apps that make a true smartphone.

Research In Motion (RIM) BlackBerry OS

It's a sweet season for BlackBerries, with plenty of new models being released, including the highly anticipated **Bold 9000** coming soon to the U.S. on AT&T. By the time you read this, each of the four major U.S. carriers will have its own new, exclusive BlackBerry: the aforementioned Bold on AT&T and Rogers Wireless, the push-to-talk Curve 8350i on Sprint and Telus, the Flip Pearl 8220 on T-Mobile and Rogers, and the Storm on Verizon. At the time of this writing, we've been able to test only the Rogers Bold, but check PCMag.com for the latest reviews of all new units.

RIM's core strengths remain the same as ever: fast, stable devices with straightforward interfaces; simple corporate manageability; and "push" messages from almost any e-mail account you can think of—business or personal. Recently, RIM has

added capable music and video players, along with software that syncs music from both Windows Media Player and iTunes to most of its devices.

The luxury smartphone of the moment, the **RIM BlackBerry Bold 9000** (Rogers; coming soon to AT&T in the U.S.) has the best screen we've ever seen on a mobile device, a 480-by-320-pixel panel that's so high-res you can't even distinguish the pixels. The Bold connects to the Rogers 3G network in Canada as well as any Wi-Fi network. The device lets you edit documents and play music and video, and, of course, it handles e-mail with aplomb. Only its Web browser falls a bit short of Nokia's and Apple's offerings.

Available on every major North American carrier, the **RIM BlackBerry Curve** is a no-nonsense workhorse. No matter which version you pick up, it's smooth and stable, with a superb keyboard, a decent Web browser, and excellent messaging support. Different carrier versions vary on what networks they support, whether they have GPS on board, and whether they throw in an IM client.

The **Pearl** (all carriers) was the first BlackBerry to jump from corporate to consumer hands. It has an unusual SureType keyboard, with two letters on each key, that younger folks coming over from standard cell phones tend to love but those accustomed to QWERTY may have trouble getting used to. The Pearl has the usual top-notch BlackBerry e-mail and a decent

WINDOWS MOBILE
Palm Treo 800w
\$249 (list)
●●●●○



Web browser, though its smaller screen makes it a less compelling Web device than the Curve. Each carrier's version varies as to network support and features.

Apple

Sure, all smartphones have third-party apps, but Apple's triumph is in making third-party apps easily discoverable and usable through the App Store. Browsing and buying the thousands of games, news readers, photo editors, streaming radio apps, and the like is downright fun.

In addition, the **iPhone 3G** (AT&T) is the most fun-to-use smartphone you can get. The latest iteration of the handset taps into Wi-Fi and AT&T's high-speed network for fast Internet access, and it runs a Unix-based operating system that's basically a stripped-down Mac OS. Apple churns out updates to the OS, seemingly monthly; the latest promised to fix phone reception problems that were plaguing many early units. Though the GPS capability doesn't offer voice-guided driving directions, it can help you find nearby sites.

Assuming you intend to use your smartphone to surf the Web and play music and video, the iPhone is the best one out there. The mobile Safari browser is truly desktop-quality, though



APPLE
iPhone 3G
\$199 to
\$299 (list)
●●●●○

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Microsoft



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it still doesn't support Adobe Flash. The iPhone can now sync contacts, calendars, and e-mail with Microsoft Exchange servers over the air, making it a viable business device—although there's no way to edit Office documents or attach a physical keyboard. The iPhone's greatest weakness is that it's available only on AT&T—and that's a deal breaker for many people.

Windows Mobile

Microsoft's strengths are what they always have been: terrific integration with Windows PCs and Microsoft server products, a wide range of form factors, phones on all major carriers, and thousands of third-party apps. But Windows Mobile's user interface is much like a classic PDA, which isn't everyone's cup of tea. Memory and stability problems plague the platform.

That said, Windows Mobile still offers the most diverse set of experiences you can get on a smartphone. Whether you're looking for a compact candy-bar phone, a device with a big touch screen and a slide-out keyboard, or anything in between, you'll probably find it running Windows Mobile.

The upcoming Windows Mobile 7 may be a light at the end of Microsoft's tunnel.



SYMBIAN OS
Nokia E71
\$483 (list)

handle Windows Mobile office apps, and a terrific QWERTY keyboard.

The sliding, touch-screen **HTC Touch Dual** (unlocked)

offers an intriguing array of input methods for a Windows Mobile phone. You can use various virtual keyboards on the touch screen, or use the hybrid physical keyboard, which has with two letters on each key. But this phone is very expensive for a gadget without Wi-Fi, GPS, or much bundled software.

With its 3G support and much lower (subsidized) price, Sprint's version of the **HTC Touch Diamond** makes more sense than the unlocked version, but its poor battery life and assorted software-related issues remain drawbacks.

Another non-touch-screen Windows Mobile phone, the **Motorola Q9h** (AT&T) has an absolutely terrific keyboard. Voice quality is also stellar, and Motorola has replaced Microsoft's lackluster browser with the vastly superior Opera Mobile. If you're looking for a device primarily for e-mail, text messaging, and some Web browsing, the Q9h is an excellent choice on AT&T.

The new version promises a major interface overhaul and better system stability for smartphones.

Currently, the best all-purpose Windows Mobile device is the **HP iPAQ 910** (unlocked). It hits on all cylinders with good voice quality, Wi-Fi and HSDPA radios, a processor powerful enough to

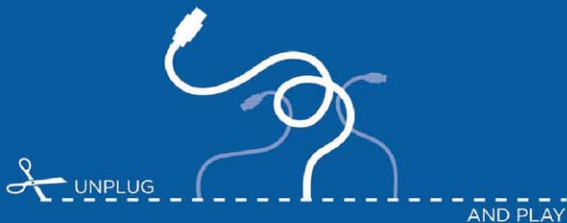
SUMMARY OF FEATURES

For more: go.pcmag.com/smartphones

	RATING	PRICE*	CPU SPEED (MHz)	WIRELESS CONNECTIVITY	INPUT	SCREEN SIZE (DIAGONAL, INCHES)	TALK TIME (HR:MIN)
RIM BLACKBERRY OS							
BlackBerry Bold 9000 (Rogers; AT&T)	●●●●○	\$399.99–\$649.99	624	Bluetooth, EDGE	QWERTY	2.8	***
BlackBerry Curve 8330 (all carriers)	●●●●○	\$169.99–\$419.99	312	Bluetooth, EDGE, Wi-Fi	QWERTY	2.5	5:59
BlackBerry Pearl 8120 (all carriers)	●●●●○	\$149–\$349	312	Bluetooth, EDGE, Wi-Fi	hybrid	2.2	8:17
APPLE OS							
Apple iPhone 3G (AT&T)	●●●●○	\$199–\$299	n.a.	Bluetooth, EDGE, Wi-Fi	touchscreen	3.5	5:43
WINDOWS MOBILE							
HP iPAQ 910 (unlocked)	●●●●○	\$499.99	416	Bluetooth, HSDPA, Wi-Fi	QWERTY	2.5	9:13
HTC Touch Dual (unlocked)	●●●●○	\$659	400	Bluetooth, EDGE, HSDPA	hardware keypad	2.6	9:11
HTC Touch Diamond (Sprint)	●●●●○	\$249	528	Bluetooth, EDGE, Wi-Fi	touchscreen	2.8	2:54
Motorola Q9h (AT&T)	●●●●○	\$199.99–\$349.99	330	Bluetooth, EDGE, HSDPA	QWERTY	2.4	4:37
Palm Treo Pro (unlocked)	●●●●○	\$549	400	Bluetooth, EDGE, Wi-Fi	QWERTY	2.8	7:06/4:34**
Palm Treo 800w (Sprint)	●●●●○	\$249	333	Bluetooth, EV-DO, Wi-Fi	QWERTY	2.5	3:21
Samsung BlackJack II (AT&T)	●●●●○	\$149	260	Bluetooth, EDGE, HSDPA	QWERTY	2.4	6:14
Samsung SCH-I760 (Verizon)	●●●●○	\$249.99	400	Bluetooth, EV-DO, Wi-Fi	QWERTY	2.8	4:17
SYMBIAN OS							
Nokia E71 (unlocked)	●●●●○	\$483	381	Bluetooth, EDGE, Wi-Fi	QWERTY, numeric	2.3	4:43
Nokia N78 (unlocked)	●●●●○	\$401	369	Bluetooth, EDGE, Wi-Fi	numeric	2.4	8:30
Nokia N95 8GB (unlocked)	●●●●○	\$533	332	Bluetooth, EDGE, Wi-Fi	numeric	2.8	8:58

RED denotes Editor's Choice.

*List price; actual price may vary depending on contract, rebate, or other factors. n.a. Apple does not disclose CPU. ** EDGE/3G *** Not yet able to test with U.S. network.



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Coming Soon

Some of the hottest new smartphones haven't even hit the market yet, but we'll have full reviews up at PCMag.com as soon as units pop up on shelves. Here are some of the most highly anticipated models.



< BLACKBERRY 8220 FLIP (T-MOBILE)

The first true BlackBerry flip phone has a big, high-res 320-by-240-pixel screen and a larger, flatter version of the Pearl's hybrid SureType keyboard. This thing is huge, though; unfolded, it's almost twice as long as the original Pearl.

BLACKBERRY 8350i (SPRINT NEXTEL)

It's basically the much-loved BlackBerry Curve but ruggedized a bit. The 8350i has Nextel's push-to-talk system built in. Like all Nextel phones, it has an unusually loud speakerphone, so you'll be heard over the jackhammers on your job site.

BLACKBERRY STORM (VERIZON WIRELESS)

The Storm is the first touch-screen BlackBerry, with a haptic touch screen that gives you virtual force feedback to imitate the feel of a physical keyboard. It works around the world and has a 3.2MP camera. The touch screen is such a huge departure from RIM's physical keyboards that we're a little uncertain about whether it will work for day-to-day use.



< HTC TOUCH PRO (SPRINT)

The flagship Windows Mobile business phone for the holidays has a 640-by-480-pixel touch screen, a high-speed 528-MHz processor, and a sleek new skin overlay for the Windows Mobile user interface. If you live in an all-Microsoft world, this phone will give you the most power per square inch of any device on the market.

NOKIA N85 (UNLOCKED)

This model looks like a standard slider phone, but the screen is almost impossibly bright: Rather than using the standard LCD technology, Nokia went with OLED (organic light-emitting diode) for a screen that truly pops.



< T-MOBILE G1 (T-MOBILE)

The first-ever phone running Google's Android operating system will be a platform for Google's Web services, letting you log in with your Google account and easily access features like Gmail and Picasa from the handset. A large touch screen slides back to reveal a keyboard.

A slender Windows Mobile smartphone, the **Palm Treo Pro** (unlocked) has thoughtful design touches like side-mounted speakers and a voice-mail notification light. The 320-by-320 screen is higher-res than those on many other Windows Mobile phones, and the keyboard, while smaller than other Treo keyboards, is still big enough to use. But you'll have to be patient with somewhat sluggish performance.

Palm's top Windows Mobile phone for Sprint, the **Treo 800w**, has outstanding voice quality, a high-res 320-by-320-pixel screen, Wi-Fi, and GPS. But the CPU is too slow, bogging down the user interface, and the handset's battery life is too short for us to recommend this phone enthusiastically.

The **Samsung BlackJack II** (AT&T) is a slim, keyboarded Windows Mobile phone in a BlackBerry's body. Voice calls sound good on this phone, it's reasonably priced, and it zips along on AT&T's 3G network. IT departments will appreciate its direct hookup to Exchange servers.

Another Samsung, the **SCH-i760** (Verizon Wireless), has a useful dual-keypad design, with a standard phone keypad and a slide-out full QWERTY keyboard, so you can use it either as a phone or as an e-mail machine. It has a touch screen, too, and a processor that's fast enough to handle Windows Mobile apps without bogging

down. Limited program memory piqued us from time to time, but the i760 is still a powerful mobile office for Verizon users.

Symbian OS

The global smartphone leader is still a minority choice here in North America, but new models and better Exchange Server connectivity make Symbian handhelds turn a fresh look. The only Symbian phone currently available through a North American carrier is the **Nokia N95 8GB**, on Rogers in Canada. Otherwise, you have to pick up unlocked phones direct from Nokia. The latest Symbian phones auto-configure themselves to your carrier, so you don't need to worry about support for all your AT&T or T-Mobile services—just drop your SIM card in and you're good to go. Additionally, unlocked handsets provide a degree of freedom you don't get with a carrier-subsidized phone, but you pay for a more expensive device.

The top Symbian handsets often feature 5-megapixel cameras and DVD-quality video recording, which you won't find on any U.S. carrier smartphones. And you also get consumer e-mail along with the ability to connect to Exchange 2003 SP2 or greater, to receive corporate e-mail.

Our favorite Symbian phone thus far is the **Nokia E71** (unlocked). Nokia's answer

to the BlackBerry is a sleek, powerful slab of metal and glass that connects directly to Microsoft Exchange servers for push e-mail, contacts, and calendar support. The Web browser is best in class, and you can edit Office documents, too. This is a top-notch phone for taking care of business.

The **Nokia N78** (unlocked) is a stealth smartphone: It looks like a basic candy-bar phone, but it hides plenty of Symbian power and offers a 3.2MP camera, Assisted GPS, image geotagging, and a robust music player. It's also 3G- and Wi-Fi-capable. The modest form factor and regular phone keypad prevent it from being suitable for copious content creation or messaging, but for a media phone with an outstanding Web browser, this one hits the spot.

Nokia's premier media phone, the **N95 8GB** (unlocked) has a 5MP camera, a huge screen, and dedicated media controls hidden behind a slider. A fast processor and 3D graphics acceleration keep it snappy, and Wi-Fi and HSDPA let you surf the Internet speedily. If you don't require a QWERTY keyboard, this handset is one of your best choices for multimedia and Web use.

MORE ON THE WEB For in-depth reviews of each model discussed in this article, visit go.pcmag.com/smartphones.



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| Quad Q9400 2.66Ghz | \$ 1035 |
| (4MB Cache, 1333MHz FSB) | |
| Quad Q8200 2.33Ghz | \$ 855 |
| (6MB Cache, 1333MHz FSB) | |
| E8000 3.33Ghz | \$ 1035 |
| E8500 3.16Ghz | \$ 945 |
| E8400 3.00Ghz | \$ 925 |



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LG 22X DVD±RW Drive & 16X DVD-ROM
- High Definition 7.1 Surround Sound
- Logitech Keyboard & Optical Mouse
- CoolerMaster Corsair Sport Gaming Tower Case
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- Aerocool Liquid Cooling System
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Solutions

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Secure Files and Folders By Using EFS in Vista

Microsoft adds data encryption to the operating system itself. *By Neil Randall*

Encryption is one of the fundamental elements of system security, so it's no surprise that Windows Vista includes encryption as part of the operating system (although not in the Home editions). In fact, the Encrypting File System (EFS) has been around since way back in Windows 2000, as a feature built right into the NT file system (NTFS), on which Vista, XP, and Win2K have all been based. In the Enter-

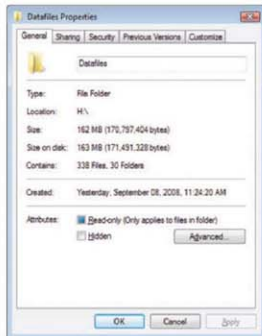
prise and Ultimate editions, Vista provides an additional security system, BitLocker, which combined with EFS provides a rich encryption package (although BitLocker is designed especially with laptop users in mind). But here we'll just stick with EFS.

The point of including EFS in Windows is to build strong data encryption into the operating system itself, thereby getting rid of both the need to purchase third-party encryption software and the problems that can result from leaving such an important process to add-on technology. EFS works in conjunction with NTFS and does not work on FAT or FAT32 volumes; in fact, if you copy or move an encrypted folder or

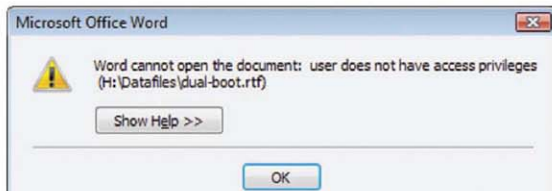
file from an NTFS partition to a FAT/FAT32 partition, the file becomes decrypted. In the reverse direction, a folder or file that has not been encrypted becomes encrypted as soon as it is moved into a previously encrypted folder. In addition to encrypting on a file-by-file basis, you can encrypt all the files inside a given folder automatically by encrypting the folder itself—an easy, efficient approach.

How to Encrypt

Vista handles file encryption through the *Properties* dialog for the file or folder you want to encrypt. Go to the folder in Windows Explorer, right-click it, and



GETTING STARTED To encrypt the contents of a file or folder, go to its *Properties*, then choose *Advanced*. The final step is to confirm your attribute changes.



ACCESS DENIED Once you've exported an encrypted file's certificate and key to a removable drive and deleted them on your hard drive, the file will be safely locked.

choose *Properties*; in the resulting *Properties* menu, click *Advanced*. Here, click the *Encrypt contents to secure data* option and then *OK*. Note that although they are side by side, you cannot choose both the encryption and the compression options (oddly enough, this choice isn't presented as a pair of radio buttons as you'd expect); Windows does not allow compressed files to be encrypted via EFS. When planning a full-security strategy, be sure to keep that limitation in mind, either deleting compressed files from all drives or securing them using third-party software.

The final step is the *Confirm Attribute Changes* dialog, in which you choose to encrypt only the current folder or the folder plus all subfolders (and all files within those subfolders). Make the choice, click *OK*, and prepare to watch the progress bar as EFS performs the encryption on the selected items.

Backing Up Your Keys

But hang on—Vista does one other thing to help you complete the procedure (which XP and earlier versions of Windows did not). The instant you start the actual encryption, a notification appears on the icon tray asking if you want to back up your encryption certificate and key. Click the notification to open the EFS backup dialog. The importance of this backup is clear from the item descriptions on the

dialog—*Back up now* is recommended, but choosing *Back up later* means that when you next log on, Vista won't let you forget. The final option, *Never back up*, is for risk takers only: If you do not back up your encryption certificate and key, and you subsequently reinstall Vista or otherwise damage your user account, you won't be able to access the encrypted files at all.

Clicking *Back up now (recommended)* opens the Certificate Export Wizard. Select the first option, to export the private key, and click *Next*. While the wizard displays a variety of encryption file formats, all but one, Personal Information Exchange (PFX), are grayed out—it's the only one Vista EFS supports. You can back up all of your personal user certificates at this time by checking the first available option (not necessary if this is your first encryption). Click *Next* and type a password—as with all other passwords designed for security, don't make it an easy one. On the next screen, type a name for your file (any name will do, and Vista adds the PFX extension automatically), and click *Next* to reveal the wizard's confirmation screen. Click *Finish*. (If you don't back up immediately, this wizard is also available from the Certificate Manager, accessed by typing *certmgr.msc* in the Search box at the bottom of the *Start* menu. In the left-hand pane, drill down to *Personal* | *Certificates*, then in the right-hand pane, select all the certificates and then choose *All Tasks* | *Export...*)

Deleting a Certificate from the Hard Drive

Backing up your certificates and keys to removable media presents its own share of concerns, however—anyone getting his or her hands on the backup media now has your encryption information. But you can leverage the process to block online intrud-

ers from gaining access. To do so, delete the certificate and key from your hard drive and let them live solely on the removable media. Of course, if your encrypted data is on a laptop, you'll need to be sure to take the removable media with you in order to access it, but you'll feel better knowing that the data will be safe even if someone steals your laptop and your account password.

After exporting the certificate, browse your removable media to make sure the file is actually on it, then remove the media from the computer. Open the Certificate Manager (click the *Start* button and type *certmgr.msc* in the Search box at the bottom). In the left-hand pane, expand the *Personal* entry and click *Certificates* so that you see your username at the right (this is where the certificate you created is located). Right-click your username and choose *Delete*. Don't worry, you still have the certificate on your removable media.

Now, use Windows Explorer to browse to your encrypted folder. Vista displays the folder and its files in green. If you try to open one of the files, you'll see an information dialog telling you that you do not have permission to do so.

This warning means that your PC does not contain a certificate that corresponds to your user account for decrypting files. You'll need to restore to your system the certificate you exported to the removable media.

To do so, connect the removable media to your PC, open the Certificate Manager, and right-click the *Personal* item in the left-hand pane. Choose *All Tasks* | *Import* to load the Certificate Import Wizard. Click *Next* and browse to the file on your media (the resulting dialog defaults to CER and CRT file types, so click the "file types" arrow and choose PFX files). Choose your exported file and click *Open*. Click *Next*, enter the password you assigned to the file, and click *Next* again. On the Certificate Store screen, stick with the default selection to place the certificate back in your personal account area. Click *Next* and then *Finish*. Go back to Windows Explorer and open your data file.

By going through the encryption process, combined with the process to delete and restore certificates, you can keep your private data files private. But be sure to back up the certificate to two or three separate media to make sure you have access if one of the media devices fails, as hardware sometimes does. □

EDITOR'S TIP | GENTLE WARNING

Before encrypting for real, practice the entire process on an unneeded folder (particularly the part about deleting your certificate as suggested). The easiest way is to make a copy of an existing folder and take care to encrypt only the copied version.

Expand Your Life

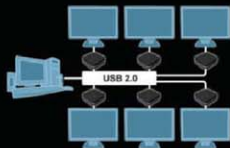
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Ask the Experts

Keep Users Inside the Lines

Q I'm trying to create a form on Microsoft Word that locks the response blocks. The problem is that if someone starts to fill in one of the response blocks and adds too many characters, the box starts to shift and destroys the format of the form. I appreciate any help you can provide.—George Brooks

A Forms based on Microsoft Word documents don't give you much control over layout. Yes, if the user types so much that the text box grows taller, it can totally mess up the layout of the form. I suggest you build the form using one or more tables to place the text labels and input boxes. You can hide the grid lines so it doesn't look like a table. Set each row's height to be exactly the correct amount (the default is "at least" a certain height). Make sure the AutoFit options are set to "fixed column width" rather than AutoFit to contents or window. Now the user can't make the rest of the form shift by typing too much.—Neil J. Rubenking

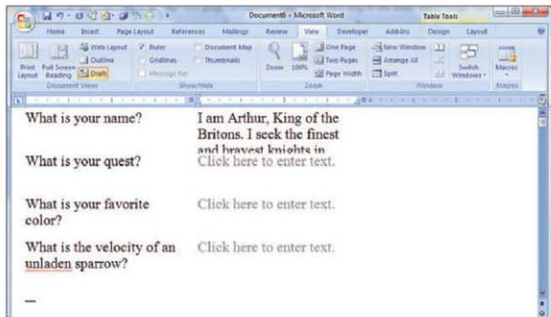
New Monitor

Q I'm thinking about purchasing a 30-inch monitor with at least 1080p native resolution. Which monitor/graphics card combination would you recommend? I've been investigating the following:

- Gateway XHD3000 30-inch LCD Monitor
- Dell Widescreen UltraSharp 3007WFP-HC (High Color)
- Westinghouse 37-inch 1080p LCD Monitor (LVM-37w3)

The Westinghouse offers an excellent price for the size and picture quality. Nevertheless, critics say that it does not handle different video modes very well.

Now, I'm not sure about this, but if I have a video card that scales up resolutions with high-quality results to 1080p (as the video processor in the Gateway XHD3000 would do), wouldn't that be enough? My thought is that all the conver-



SETTING TABLES When creating forms in Word, you can use tables as the response blocks to keep formatting intact, no matter how long the typed responses are.

sion features (equivalent to the ones built into the Gateway XHD3000) would be handled by the graphics card (maybe the MSI RX2600XT-T2D512EZ) and would let me use the cheaper Westinghouse monitor, which seems to provide high-quality video as long as you use its maximum resolution of 1080p.—Mathias Vermeiren

A You didn't discuss the specific applications you would be running, Mathias. If you're talking about gaming on a 30-inch display with a native resolution of 2,560 by 1,600, then you'll need a beefy graphics card, such as the recently released NVIDIA GeForce 9800 GX2. If you're just planning on using a high-resolution display for normal desktop PC applications, then a good midrange graphics card, such as a GeForce 8800 GT or an AMD Radeon HD 3850, will suffice.

The two 30-inch PC displays you list have pros and cons. The Dell offers a 92 percent color gamut, which may be useful if you're doing a lot of photography or digital video work. As a flexible display for consumer applications, the Gateway is an excellent model with a high-performance video processor built in.

The idea of putting a small 1080p HDTV on your desk is perhaps more interesting, particularly if, like me, you have middle-aged eyes. A 37-inch display, however, is large enough to make you keep constantly moving your neck around. I'm currently experimenting with a Sharp AQUOS LC-32GP3U-R, which is a rarity—a 32-inch HDTV with an actual resolution of 1,920 by 1,080 (1080p). It has some disadvantages: There's no height or tilt adjustment, it's expensive, and you need a DVI-to-HDMI cable (not included) to connect it to your PC. But it's got great image quality, and text is certainly quite readable on a desktop.—Lloyd Case

Two Slots Good, Four Slots Bad?

Q When you addressed the "Which Kind of RAM" question (June, page 98), you mentioned that if a PC has four memory slots, you should avoid filling all four of them; filling just two of them is best. Does this apply to all PCs?

I have a Dell XPS 40 running Windows Vista Ultimate and recently upgraded the RAM to 4GB, filling all slots. I did notice that Windows recognizes only 3,070MB of RAM, but I believe this is because I am running the 32-bit version of Windows. I saw an



CHANGING START MENU STYLES To use the Start menu as Vista intends you to, make sure you don't have *Classic Start menu* selected in your taskbar properties.

improvement in the system after upgrading from 2GB, but I wonder whether filling all four slots gave me a little less return for my investment?—Phil Ridenour

First, using all four memory sockets is perfectly viable. My production system is currently running four DDR3 memory modules at 1,333 MHz—Kingston sticks rated to run at DDR3-1600. However, you should be prepared for the possibility that you'll have to trade off one speed grade for stability. So you'll need to buy memory rated at a minimum of one speed grade higher than what you plan on running. Even then, some motherboards may actually force you to run lower than the standard rating for that board. So your DDR2-800 motherboard will run at DDR2-667 speed no matter how fast the memory module rating.

Some motherboards are extremely sensitive to the number of banks of DRAM, however. Modules with 16 chips (8 on each side) are usually two-bank modules, and some motherboards may support a maximum of six banks of memory. Check your motherboard manual for details on the number of banks it supports.

But let me answer your question more directly: If you're getting better performance and your system is stable, then your investment is doing exactly what it should.—LC

Horribly Slow Browsing, Revisited I saw your advice concerning "Horribly Slow Browsing in Vista" (May, page 92). I have Vista Home Premium, as did the reader who wrote to you. However, as a non-techie,

I have a really basic question about the instructions you provided for turning off Auto-Tuning in Vista.

Where on the Start menu do you access a place where you can even type a command? Would that be from the Run dialog? When I click on Run, right-clicking doesn't bring up any options, so I don't see any option to "Run as Administrator." What I get instead is a line into which a command could be typed, preceded by the word "Open." Above that line is a sentence that states: "Type the name of a program, folder, document, or Internet resource, and Windows will open it for you." Huh?—Aurelia G.

Here's the problem: You're not using Vista as Vista. You've chosen the "classic" (XP-style) Start menu, so many tips about using the Vista Start menu are not going to work for you. If you want to switch to the Vista-style menu, do this:

Right-click the taskbar. Choose *Properties*. Click the *Start menu* tab. Check the *Start menu* option (as opposed to the "Classic Start" menu option). Click OK.

If you want to run Cmd.exe as an administrator without changing the way you use the Start menu, you can do that, too. Launch Computer and navigate to C:\Windows\System32. Find the file Cmd.exe in the list of files. Right-click it and choose *Run as administrator*. Now you can follow the steps from the other tip.—NJR

NEED ANSWERS? PC Magazine software expert Neil J. Rubenking and ExtremeTech .com editor Loyd Case tackle readers' problems in each issue. Send your toughest questions to askneil@ziffdavis.com or askloyd@ziffdavis.com.

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Word Macros: Beyond Basics

Here are three macros in Microsoft Word that do more than just record your actions. *By Edward Mendelson*

Once you've begun recording and using Microsoft Word macros, you may encounter keyboard and mouse actions that don't translate into working macros. Or, like many others, you'll run into program limitations and wish your macros could do more. These three macros can take you beyond simply recording your actions.

Open a File and Start Editing Where You Stopped Last Time

I've named these macros *AutoClose* and *AutoOpen*; they instruct Word to record automatically where your cursor was located in your document when you closed it, and then to jump to the same location automatically when you open it again.

Here's how to do it. First, create a macro named *AutoClose* (don't assign it to a button or keyboard command). With a document open on screen, move the cursor to any position in the document, start the macro recorder, and perform the following actions. From the *Insert* menu, choose *Bookmark*; name the bookmark *LastEditPosition*; click *Add*. Stop the macro recorder.

Move the cursor somewhere else in the document. Now start the macro recorder and create a macro named *AutoOpen* (again, no button or keyboard command needed). From the *Insert* menu, choose *Bookmark*; highlight *LastEditPosition*; click *GoTo*; click *Close*. Stop the macro recorder.

Now, open a document that you worked on *before* you created the *AutoClose* macro. Word will pop up an error

our macro, press Alt-F8 to bring up the Macro



IN CASE YOU CHANGE YOUR MIND You can add code to a macro that will prompt you before it runs.

message saying that the bookmark does not exist—because Word is looking for the *LastEditPosition* bookmark, and that bookmark gets inserted only into files that you closed after creating the *AutoClose* macro. To forestall this error message, press Alt-F8 to bring up the *Macros* dialog, highlight *AutoOpen*, and click *Edit*. You'll see something like this in the Visual Basic Editor:

```
Sub AutoOpen()  
    Selection.GoTo What:=wdGoToBookmark,  
    Name:="LastEditPosition"  
End Sub
```

Add two lines to this so that it reads:

```
Sub AutoOpen()  
    If ActiveDocument.Bookmarks.Exists("LastEditPosition") = True Then  
        Selection.GoTo What:=wdGoToBookmark,  
        Name:="LastEditPosition"  
    End If  
End Sub
```

Press Alt-F4 to close the Editor.

Now open a new, blank document, and then immediately close it. Word will ask whether you want to save your changes—even though you didn't make any. Let's modify your *AutoClose* macro to avoid this problem. Press Alt-F8 to bring up the *Macros* dialog, highlight *AutoClose*, and click *Edit*. You'll see something like this:

```
Sub AutoClose()  
    '
    With ActiveDocument.Bookmarks  
        .Add Range:=Selection.Range,  
        Name:="LastEditPosition"  
    End With  
End Sub
```

```
With ActiveDocument.Bookmarks  
    .Add Range:=Selection.Range,  
    Name:="LastEditPosition"  
End With  
End Sub
```

Add two lines so that it reads:

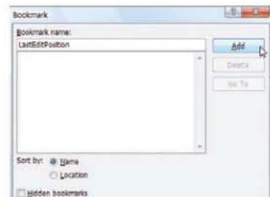
```
Sub AutoClose()  
    If ActiveDocument.Words.Count > 1  
    Then  
        With ActiveDocument.Bookmarks  
            .Add Range:=Selection.Range,  
            Name:="LastEditPosition"  
        End With  
    End If  
End Sub
```

Press Alt-F4 to close the Visual Basic Editor. The two lines that you added cause Word to insert the *LastEditPosition* only when the word count in the document is greater than one.

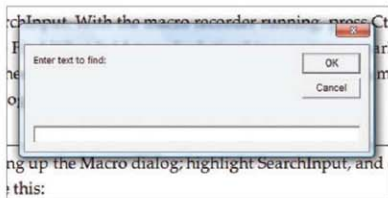
Get Yes/No Input in a Macro

Sometimes you'll write or record a macro that makes major changes in your document, and you want to give yourself a chance to change your mind before running it. After recording the macro, you can add code that will prompt you before proceeding.

Here's how. After recording your macro, press Alt-F8 to bring up the *Macros* dialog, then highlight your macro and click *Edit*. When the Visual Basic Editor opens, move the cursor down to just above the top line of the code in your macro (typically,



BOOKMARK IT Open a large document exactly where you left off when you closed it.



SEARCH INPUT Prompt yourself to enter text that you would use elsewhere in a macro.

below four lines that are "commented out" with an apostrophe at the start of the line). Insert the following code:

```
Dim MyConfirm As Long
MyConfirm = MsgBox(Prompt:="Are you
sure you want to run this macro?", _
Buttons:=vbYesNo +
vbDefaultButton2, _
Title:="Confirm before running")
If MyConfirm = vbNo Then Exit Sub
```

If you want the default button to be Yes, simply delete + vbDefaultButton2 (do not delete the comma and underscore), or replace the 2 with a 1. Of course, you can put any warning that strikes your fancy between the Prompt quotation marks.

Prompt for Data in a Macro

There are dozens of reasons why you might want to prompt yourself (or someone else) to enter some text that you would then use elsewhere in a macro. We offer the simplest possible example, prompting for the string to use in a search. You won't ever need this in real life, but it effectively shows you how to adapt the method for use in macros that you might want to use.

Create a file and type some text in it, including the word *solution*. Start recording a macro named *SearchInput*. With the macro recorder running, press Ctrl-F to open the *Find* dialog; in the *Find What* field, type *solution*, click *Find Next*, and then, when the word *solution* is highlighted in the document, press Esc to close the *Find* dialog. Stop recording the macro.

Press Alt-F8 to bring up the *Macros* dialog; highlight *SearchInput*, and click *Edit*. You'll see something like this:

```
Sub SearchInput()
'
' SearchInput Macro
'
```

```
Selection.Find.ClearFormatting
With Selection.Find
.Text = "solution"
.Replacement.Text = ""
.Forward = True
.Wrap = wdFindContinue
.Format = False
.MatchCase = False
.MatchWholeWord = False
.MatchWildcards = False
.MatchSoundsLike = False
.MatchAllWordForms = False
End With
Selection.Find.Execute
End Sub
```

Now add the following lines below the last of the four comment lines, and above the actual macro code (which begins *Selection.Find.ClearFormatting*):

```
Dim MyInput as String
MyInput = InputBox("Enter text to
find:", "")
```

Finally, go back to the original code that you recorded; find the line that reads:

```
.Text = "solution"
```

Change it to read:

```
.Text = MyInput
```

Notice that the quotation marks have been removed. When you next run the macro, you'll be prompted for the text to find.

The essential technique here is to use an input box to get the variable (here called *MyInput*) that replaces some actual text that you recorded when first creating your macro. Remember that you can use more than one input box in a macro. Just make sure to use a different variable name for each box, for example, *MyFirstInput*, *MySecondInput*, or something more descriptive. □

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INFORMATION TECHNOLOGY

Prepare Your Company for IPv6

Version 6 of the Internet Protocol will mean more Web addresses and better performance for the Internet. Just make sure your company is ready to reap its benefits. *By Oliver Rist*

You may not have known it, but on June 30, the U.S. reached a network-management milestone. On that day, all federal agencies had to be capable of switching to IPv6 (Internet Protocol version 6) from IPv4. The change isn't a small one. IP is part of the TCP/IP communication protocol, the guts of everyone's favorite Internet. Suddenly, the good old version 4 that everyone knows is being replaced.

The main reason for this drastic shift is that IPv4 was never designed to handle the sheer size of the Internet. The protocol demands that every device on the Internet be identified by a unique 32-bit number, but the availability of those numbers—the address space—has been rapidly shrinking. That has forced the creation of bolt-on technologies like NAT (Network Address Translation), which lets a router show a unique address to the Internet while handing out addresses to the internal network that are actually already in use elsewhere.

But there's another problem with version 4 of the IP protocol: It has hit a few performance walls. For one, address routing is highly inefficient; for another, security relies on proprietary encryption schemes that lack any kind of real standard; and, finally, all that music and video content that media companies suddenly want to run across the Web is giving IPv4 fits, requiring complex quality of service (QoS) technologies to be bolted onto a protocol that was never intended to handle such performance-sensitive traffic.

Trillions of New Addresses

Enter IPv6, which solves both of the problems of IPv4. Version 6 has loads and loads of addresses— 3.4×10^{38} , or 340 trillion trillion trillion addresses—enough to give a unique public address to every PC, car, watch, and toaster in existence. It also uses a redesigned packet that makes routing more efficient, is constructed from the ground up with integral security, and has QoS technology built in.

The downside to the switch? Mostly IPv4's monumental success. The Inter-

Name	Description	Type	Public	Last Run
Applications to Computer	List of all software applications installed on each computer	Device		Feb 11, 2018
Computers with link-local	Summary of Windows machines that do not have antivirus software installed	Device		
Computers with link-local	Summary of Windows machines that have antivirus software installed	Device		
Configuration Summary	Detailed configuration information for all computers	Device		Feb 11, 2018
Disk Usage	Summary of disk usage by device	Device		
Event Summary	A summary of recent events	Device		
Fixed assets Schedule	List of all assets in a format required by finance departments	Device		
Google Desktop/Outlook	Devices with Google Desktop or Outlook installed	Device		
Inventories Summary	Summary of all devices categorized by type	Device		
IP Phones	List of all IP phones	Device		
Low Disk Space	List of all computers with less than 10% free space	Device		
Network Adapters Summary	Summary of all network adapters installed on computers	Device		

A FREE AUDIT
Spiceworks can produce the network audit you need to get ready for IPv6.

net exploded so rapidly that by the time anyone conceived of its limits, the current networking protocol was already the most popular in history. And, naturally, IPv6 and IPv4 aren't 100 percent compatible. Hardware and some software will need to be upgraded to make the transition successful. Most organizations—the government included—were focused more on leveraging the Internet's existing bennies rather than planning for its future. But with the feds finally making the move, you can expect to see a ripple effect. First Uncle Sam, then government contractors, then companies that do business with them, and so on. Eventually, your company will be on the list, too.

When that happens, it's best not to be caught unprepared. Simply running out and buying new IPv6-capable network hardware can cost you a bundle and still not address all your upgrade needs. The first step in an IPv4-to-IPv6 transition is a baseline audit of your whole network—that's hardware and software. This not only lets you know exactly what you have to upgrade, it also shows what new network-management strategies you'll need to put into place and what performance characteristics will be most important across the whole network. Download the free Spiceworks IT Desktop (www.spiceworks.com) to get an inventory of your entire network.

If you're a business manager, make sure your network staff is trained in IPv6. If you're a network manager, you should start boning up on IPv6 now. Security, address management, and QoS are all different, so not cracking that *IPv6 Unleashed* book until the day of the upgrade will be a mistake. Fortunately, Windows Vista and Windows Server support the new network protocol, as does a slew of new lower-cost networking hardware, so building an IPv6 test network for educational purposes isn't that difficult.

Upgrading Critical Software

When planning your upgrade, use your audit information to identify the most critical software packages and upgrade these in order of importance. Doing this one app at a time lets you ID those that have a real future in IPv6 versus those that will never make the upgrade and will have to be replaced. And, yes, there will be some, so be prepared.

Build test configurations for each app before upgrading anything in your production environment. And make sure that your test outline includes not just trials that show whether the app can run in an IPv6 environment, but also trials that prove you can manage its performance as required, management criteria are satisfied, and security is up to snuff. □

Mind of a Web 2.0 Hacker

They harvest your data directly from the Web apps you use and the sites you visit. Here's how. *By Matthew D. Sarrel*

Dear Friend,

It's all become so easy. I used to write viruses and attack networks to show off how smart I am, but these days it isn't even a challenge: Millions of you don't run any security at all at home. The hard part was finding you. Now with this latest push toward cloud computing, especially social networking, SaaS (software as a service—all those neat Web 2.0 apps), and online storage, it's easier for me to find you and harvest your data. Let me tell you how I do it.

10 A.M. It's time to unleash my new Facebook app, a cute game about putting kittens in the microwave. By running my app you agree to share your entire profile with me, and if you've posted anything even remotely useful to me (like a credit card number), then I figure you deserve to have me steal it. Here's a similar bit of trickery I wish I'd thought of: In March 2008, the Aurigma ActiveX image uploader was used to cause buffer overflow attacks that planted malware on users' PCs.

11 A.M. My newest fake profile on MySpace is just about ready. Web 2.0 is all about sharing user-generated content—yeah, that content is my malware, and the best part is that you'll come and get it. Most people don't realize how easy MySpace makes it to customize profiles; I can upload simple code that your browser will run when you visit my page. I use that code to crash your PC while behind the scenes you download malware from another Web server I've compromised. This has already happened so many times that I call the tactic Old Faithful. The first one I ever heard about was the JavaScript virus Samy, which hit MySpace in 2005.

2 P.M. After a hearty lunch and a lovely nap, I get back to my latest attack, planting malicious iFrames on sites that you already trust. An iFrame is an inline frame—an HTML element that makes it possible to embed one Web page inside another. I host my attacks on a server in Ukraine, break into sites you trust, like CNN or PlayStation.com, and insert an iFrame that sends you to my attack server while you still think you're on CNN.com.

PROTECT YOUR DATA

Take these four precautions so you aren't a hacker's prey:

- 1. RUN A SECURITY SUITE.** You need a software firewall, anti-spam, antiphishing, antispyware, anti-rootkit, host-based intrusion prevention software.
- 2. UPDATE SIGNATURES.** Download new signatures frequently, so that your security suite recognizes new attacks.
- 3. USE STRONG PASSWORDS.** Make sure they vary from site to site, are more than six characters long, contain a mix of letters and numbers, and aren't the names of anything you share online—like your dog's name, which is listed on your Facebook page.
- 5. BE CRYPTIC.** When possible, encrypt important data files at rest and in transit. Always click on the "Sign in securely" link.

4 P.M. Social networking works for hackers, too. Now I'm headed online to sell the credit card and bank info I've stolen. There are thousands of servers hosted outside the U.S., with message boards where anyone can buy or sell your identity. It's gotten so easy that prices have come down. I get just \$3 for your Visa info, but that's okay because I've harvested thousands of credit card numbers today.

6 P.M. It's time to turn my attention to online apps. Do you use Google Docs? Google is so great. It even goes so far as to let me plant a malicious iFrame in a spreadsheet.

I can trick you into opening my spreadsheet, or simply break into your account and put an iFrame in your own spreadsheet. Open up the doc and infect yourself with my bot, which quietly captures personal info like your username and password when you log in to banking sites.

Don't hate me, friend. After all, you're the one who made it so easy for me.

See you online,
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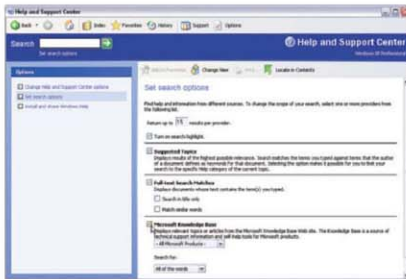


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TechTips

Useful tidbits from *PC Magazine* editorial staff, Labs analysts, and readers



ONLINE HELP To include Microsoft's online database when seeking Windows help, check the box for Microsoft Knowledge Base in XP (far left), or look at the bottom of the Help window in Vista (near left).

WINDOWS

More and Better Help

When using the Windows help system, include Microsoft's online database in your search. In Vista, the search's online status is indicated on the bottom right of the Help window; click it to toggle. In XP, put a check in the *Microsoft Knowledge Base* check box to include online material in your search for help.—*Joel Durham*

Build Tree Diagrams Fast

Want to get a tree diagram showing all the folders on the C: drive and their relationships to each other? Launch a command prompt and enter `CD \`. Then enter the command `TREE > treediag.txt`. It may take a little time, while the system compiles your list, for the next prompt to appear. When it does, exit the dialog. The file `treediag.txt` in your C: drive now holds the desired diagram.—*Neil J. Rubenking*

Start-Up Errors

A reader wrote to me recently asking about a start-up error message that first appeared when the reader uninstalled a program. Windows XP and Vista both include a wonderfully useful utility called the System Configuration Editor, popularly known as MSConfig. With this utility, you can analyze all the applications that start up at boot, and disable undesired items, such as error messages. To call up the edi-

tor click *Start*, and under *Start Search* type in `msconfig`. (On XP systems, click *Start*, then *Run*, then type `msconfig`.)

Navigate to the *Startup* tab and locate the error message in the checked items. Uncheck it and reboot.—*Cisco Cheng*

SOFTWARE

Speed Up Speech Recognition

Is your speech-recognition software underperforming? It might be your old sound card letting you down with slow analog-to-digital conversion. If so, you can cut the outdated hardware out of the loop by doing the conversion off-board. Replace your old analog mic with a USB mic, which does the conversion itself.—*Sean Carroll*

EXCEL

These Are Not My Beautiful Colors

Excel 2003 lets you change the color palette for a workbook (choose *Tools* | *Options*, the *Color* tab, then *Modify*), but sometimes the colors pop back to the default palette when you save and reopen the file. Here's how to get your colors back:

Find a copy of a file that still has the colors as you want them. (You back up every day, right?) Open that file, and open the latest version you've been working with. From the latest version, choose *Tools* | *Options*, then the *Color* tab. In the *Copy Colors From* drop-down list, select the file with the right colors. Then choose *Okay*.

The moral here: If you change the color palette in Excel 2003, it's a good idea to keep a sample file on hand to restore the colors if you need to.

If you're working in Excel 2007 with a file created in Excel 2003, and the colors change to the defaults, follow the same basic procedure. But to get to the dialog box with the *Copy Colors From* drop-down list, click on the Microsoft Office button and choose *Excel Options* | *Save*; click on the *Colors* button to the right of the words *Choose what colors will be seen in previous versions of Excel*.—*M. David Stone*

CAMERAS

Fake Museum Mode on Your Camera

Many museums won't let you use a flash when taking pictures. If your digital camera doesn't have a dedicated "museum" mode, you can still use it to take pictures and comply with the museum's rules. Just put your camera in manual mode and use the flash control to turn off the flash. Since you'll be indoors with low light, set the ISO speed higher. If your camera warns you of a long exposure, use a wall or display case to steady your camera.—*Craig Ellison*

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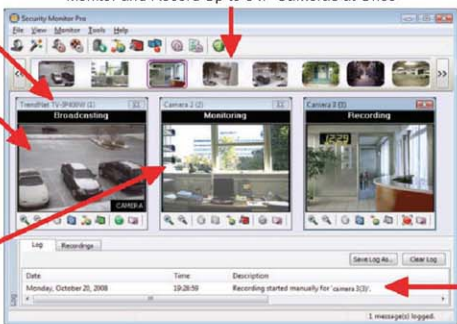
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- Ferry range: unlimited
- Wingspan: variable-geometry, desktop-sized

Trivia:

- No competition, industry broke through:
- Vista OS Support (64-bit)
- Supersonic FPS ratio
- Lowest processor use
- Minimum traffic consumption
- Ultimate security standards
- Price range

Military-grade security:

- Fully OS-integrated NT security system with NTLMv2 support
- IP filter table that restricts remote access to specific IP addresses and networks
- Server password protection
- Advanced 256-bit AES encryption for all sending and receiving data
- Authentication based on Diffie-Hellman exchange with 2048-bit key size
- Kerberos support
- Code-hopping defense mechanism that prevents the program's code from being altered
- Smart protection from password guessing
- Incoherent server configurations prevention
- Generation of unique private keys for each connection

Armament:

- Secure voice and text chat features
- Ping (gping) transfer
- Telnet and other useful tools

Supersonic vehicle specifications:

- Type: Multiple Supersonic Remote Control
- Manufacturer: Farnatech
- Designed by: Dmitry Znosko
- Maiden flight: March, 1999
- U.S. I introduction: October, 2007
- Status: active service
- Number built: millions
- Primary user: up-to-date business all over the world
- Unit cost: US\$49 (squadron discounts available)

Typical combat use:

- Corporate
- Small and medium business
- Helpdesk providers
- Telecommuting
- Educational
- Home

Operational history:

- 40% companies of Fortune-100 list with wide geographic spread
- North America
- South America
- Europe
- Australia and Oceania
- Asia
- Africa



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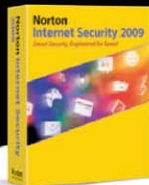


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