

➔ **Speed Up Your Internet Connection**

Macworld

www.macworld.com | July 2009

The Mac Experts

Troubleshoot Like a Genius

34 MAC FIXES

- **Find Trouble Spots**
with Apple Utilities
- **Solve Problems**
Yourself
- **When to Ask for**
Apple's Help



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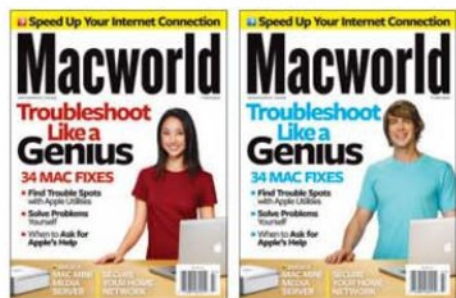
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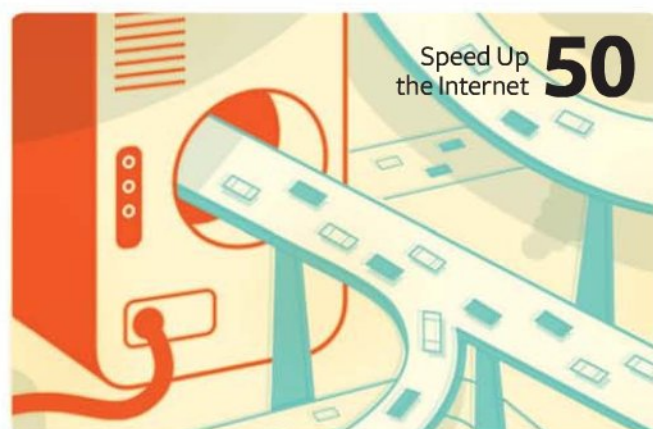
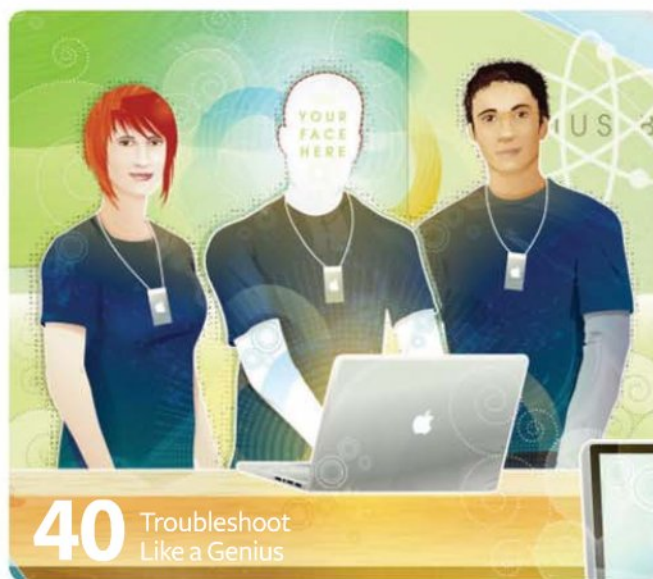
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MACWORLD.COM'S TOP 5

The top 5 stories on Macworld.com are:

1 A Windows Guru Spends Two Weeks with a Mac
Computerworld's Preston Gralla works with a MacBook Air for two weeks. Will he ever go back to a PC (macworld.com/4797)?

2 Apple Leads, Dell Lags in Customer Satisfaction
Jim Dalrymple finds that Apple blew away the competition in the latest consumer survey (macworld.com/4798).

3 HD Camcorders: Buyer's Guide
In the HD camcorder world, high def and low price is the name of the game (macworld.com/4799).

4 Apple: A PC Is No Bargain When It Doesn't Do What You Want
Apple doesn't respond very often, but it did speak out on Microsoft's new ad campaign (macworld.com/4800).

5 Revisiting the Mac Mini Media Center
Christopher Breen prepares to build a new Mac mini media center by upgrading hardware (macworld.com/4801).

(Ranking valid as of April 30, 2009.)

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The Computer behind the TV

When will Apple do the living-room Mac right?

Every time Apple updates the Mac mini, I get a strong urge to install one in my living room.

I parked one of the original Mac minis on top of my HDTV for the entire summer of 2005, intending to use it as a media center. I found the experience both frustrating and fulfilling.

It was cool to play back Internet video on my TV. But that coolness was tempered by the mini's lack of a good, remote-control-driven interface. It was still, in the end, a computer. When you use a computer, you lean forward, your face a few inches from the monitor, one hand on the keyboard and the other on the mouse. The last thing I wanted to do was park a keyboard and mouse on my living-room coffee table, and "leaning forward" doesn't really describe my usual posture on the couch.

Still, when Apple released the new Mac mini in March, I was prompted to rerun the experiment. I thought that advances of the past four years—especially improvements in remote-control software—might have solved the interface problem. (See Christopher Breen's account of his experiment with a Mac mini media server on page 59.)

But based on my latest test, I think it will still be some time before having Macs attached to our TV sets will seem normal. I've once again disconnected the Mac mini from my TV and removed it from my living room.

Apple TV or Mac?

Since my first attempt to attach a Mac mini to my TV four years ago, Apple came out with the Apple TV—essentially, a stripped-down Mac mini with a menu-driven interface that doesn't require a keyboard or mouse. If you store all your music and videos on a Mac somewhere in your house, an Apple TV will let you play that media in your living room effortlessly.



I'd like to take all the great video I can play on my Mac and play it back on my TV screen.

Unfortunately, the Apple TV's simplicity comes at a price. Its software doesn't support third-party Internet sources other than YouTube, nor will it play any video formats other than those supported by iTunes. Enterprising hackers have found ways to upgrade the Apple TV's software with clever programs like Boxee (www.boxee.tv) and XBMC (xbmc.org). Unfortunately, these programs only expose the limitations of the Apple TV hardware, which is barely capable of playing 720p high definition video.

Compare the limitations of the Apple TV to the options you have on a Mac mini media server. You could install the free Perian (perian.org) plug-in to play almost any video format known to humanity. If you subscribe to Major League Baseball's MLB TV service (\$80 to \$100 per season; mlb.com), you could watch HD-quality video of live baseball games on your TV. More importantly, using software such as Boxee or Plex (www.plexapp.com), you could replace

Front Row with a slick, remote-driven menu system featuring all kinds of Internet content.

Plex and Boxee are both evolving quickly enough that, by this time next year, you'll probably be able to install one or the other on a Mac mini and have a device that'll put the Apple TV to shame. But they're not quite there yet.

Something for Everyone

Of course, if you've got a cable box or a DVR, you've already got a computer in your living room. TiVo and its ilk usually run some variant of Linux; my first TiVo had a PowerPC processor and a Mac-based file system. But that software is hidden behind a friendly, remote-driven interface.

The simpler the interface, the easier a device is to use. But the more powerful a device is, the harder it is to create a simple interface for it. Programs such as Boxee and Plex have to let you attach to remote file servers, play back video from dozens of Internet video providers, and more. And they have to do it all with a friendly interface that won't make my wife throw the remote at me and ask why I've made watching TV so difficult.

This is where Apple, with its interface expertise, could contribute some serious innovation. But will it? Steve Jobs famously called the Apple TV a "hobby." It's unclear whether that's because the market isn't mature or because Apple's attention is focused elsewhere.

All I want is to watch all the great video I can play on my Mac on my TV screen. I'd like Apple to be the company to make that happen. If it doesn't, I'm pretty sure someone else will. ✕

What do you think? Would you ever install a Mac mini in your living room? Have you tried it already? Write me at jason_snell@macworld.com or join the discussion at forums.macworld.com.

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CONTRIBUTING COPY EDITORS Claire Breen, Joshua Fruhlinger, Gail Nelson-Bonebrake, Charles Purdy, Alec Wagner

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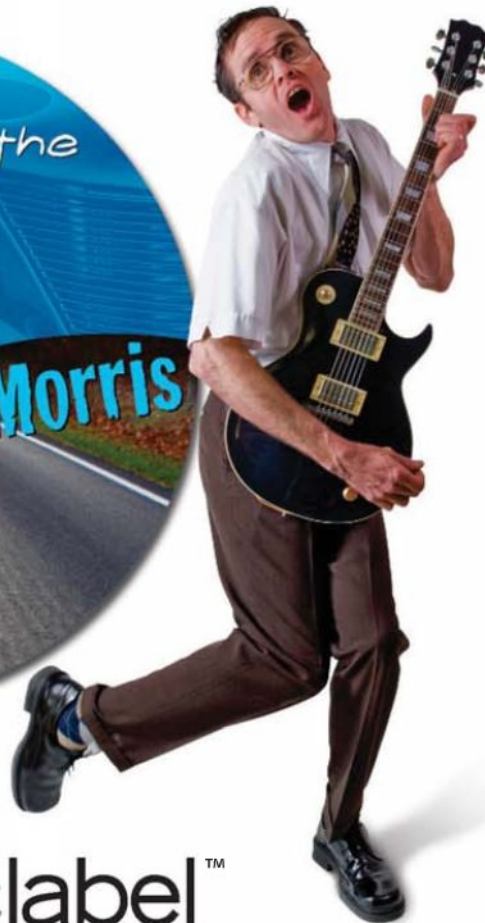
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No to Green, Yes to Netbooks

Readers get bored with the environment, and creative dreaming of an Apple netbook

Environ-mental

Count me among your readers who are tired of this pandering to environmental extremists ("How Green Is Your Mac?" April 2009). The planet has been through earthquakes, ice ages, floods, volcanoes, fires, and hurricanes. Yet we're going to destroy it by using Macs? Apple has realized it can make money off these gullible "green" customers. But many of us would rather focus on what our electronics can do for us rather than what we can do to please some environmentalist freaks from Greenpeace.

✉ Clayton Rhoades

You suggest using the site Blackle, which shows a black background for Google instead of a white one, as a way of saving energy. This is a misconception. While a black background would have saved energy in the days of CRT displays, this is no longer true with today's LCD displays. LCD screens require power to become opaque, and their backlights are

on constantly, regardless of the state of the pixels. Thus, a black pixel will actually use slightly *more* power than a white one. So how do you really reduce the power consumption of your display? Turn down the brightness. It's the backlight that consumes the majority of the power.

✉ Thomas Reed



Mea culpa: Upon further review, we have to agree that a "black" Google won't reduce the energy consumption of a modern LCD display; it would, as you say, cut consumption only for a CRT. And your tip regarding turning down the brightness is a good one. —Dan Miller

Netbook Fantasies

Yes, I would pay \$500 for a supesize iPhone-like netbook made by Apple ("Netbook or Bust," *From the Editor's Desk*, April 2009). The iPhone screen is too small for even casual browsing of Web sites. I constantly have to increase the text size and scroll right and left to read. But a 7.5-by-5.3-inch netbook would be perfect. This "TouchBook" would be smaller, thinner, and lighter than any netbook on the market.

✉ Edward Ho

Apple will be making a huge mistake if it doesn't enter the netbook competition soon. Our school is planning on purchasing a laptop for every student next year. We are seriously considering the HP 2140 netbook. I never would have imagined such a thing a year ago, but the economy and Apple's laptop pricing are driving the decision. Purchasing 1,000 netbooks instead of 1,000 MacBooks will save us \$500,000. And much of what our students do now is Web-based, so the platform and OS are becoming less of an issue. Apple may not be in the business of creating supercheap products for the bottom of the market, but it profited sizably from being the first to cater to the K through 12 market. Apple risks losing that market without a netbook or a lower-priced MacBook.

✉ Bruce Deger

PHOTOGRAPHS BY PETER BELANGER

OVERHEARD ON THE FORUMS

"While I would like to see Apple provide some more backward compatibility, I think its decision to continuously move forward by eliminating older technologies prevents them becoming the mess that is Microsoft."

pcharles
macworld.com/4833

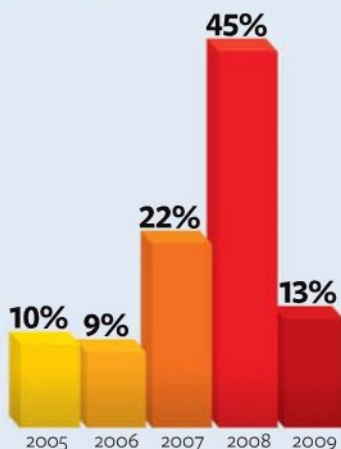


"Hopefully we will not have to wait for iPhone OS 4.0 or even 5.0 before voice recognition and voice dialing are added at the system level."

MacPCJustCreate
macworld.com/4832

READER POLL

When did you buy your last Mac?



±1% of respondents said they'd never bought a Mac.
Source: Macworld.com online poll, March 2009

As a professional photographer, I would find a Mac netbook a godsend on field assignments where I need to turn around JPEGs on the spot, or simply as a repository and backup device for full Compact Flash cards. I wouldn't need to run Photoshop or InDesign on it, but it would be nice if I could run a lighter-weight app like GraphicConverter for quick editing, entry of metadata, and file renaming. So no, I would not pay \$500 for an iPhone-like netbook. But I would pay \$600 for a MacBook-like iPhone.

— **Brian Drumm**

Instead of making a new netbook, what if Apple made a docking station right now for the iPhone and iPod touch with VGA, mouse, and Ethernet connections? That's a working netbook platform if I've ever heard of one.

— **David Etengoff**

Mail Manners

I'd like to make your article on e-mail manners mandatory reading for the people in my contact list ("E-mail Etiquette," *Working Mac*, April 2009). One of my biggest pet peeves was missing, though: sending huge attach-

ments. I've had my inbox reach its limit thanks to the 20 high-res pictures of little Bobby's first steps, causing subsequent senders to have their messages bounce back with an "inbox full" error. Before you send, check the size of your attachments. If they're huge, resize or zip them. If your e-mail client doesn't tell you the size of your attachments, and if you don't know how to check, don't click on send.

— **Steve Diniro**

Too Many Mice?

After reading recent reviews of various Apple hardware and software, I'm beginning to wonder if *Macworld* reviewers read their own reviews before giving almost everything four mice. A look at the list of cons, followed by a reading of the reviews of iPhoto and iMovie, make me wonder what the rating would be if the software came from someone other than Apple. Apple's laptops, with the exception of the MacBook Air, all received four mice despite the lack of FireWire or a matte screen option. Don't get me wrong, I love Apple and I love Macs—but reviewers should expose the warts as well as the good points of Mac hardware and software to prospective buyers.

— **Ed Wood**

In your glowing review of iMovie '09, you didn't mention that if a user imports VHS tape and then burns a movie to DVD, the picture is terrible—like an old 8mm home movie. The interleave method of capturing video in iMovie '09 is optimized for new camcorders with high-definition images, but leaves us DV-import geezers back with iMovie '06. Too bad, because iMovie '09 does have some great features.

— **Richard Posner**

Put an End to Whining

I'm a little taken aback by the designer community's whining about the glossy screens on MacBooks (*Feedback*, April 2009). I can only assume these are young designers who don't remember the days of no-choice CRTs that weighed a zillion pounds and had glass faces with



no antiglare coating. Some even came with hoods to help mitigate the glare. Even then, we were at least industrious enough to arrange our offices and dim lights so that the screen was easily viewable. While I agree that the antiglare screens are somewhat preferable in general, these are MacBooks, for crying out loud. If something is glaring off the screen, *get up and move*.

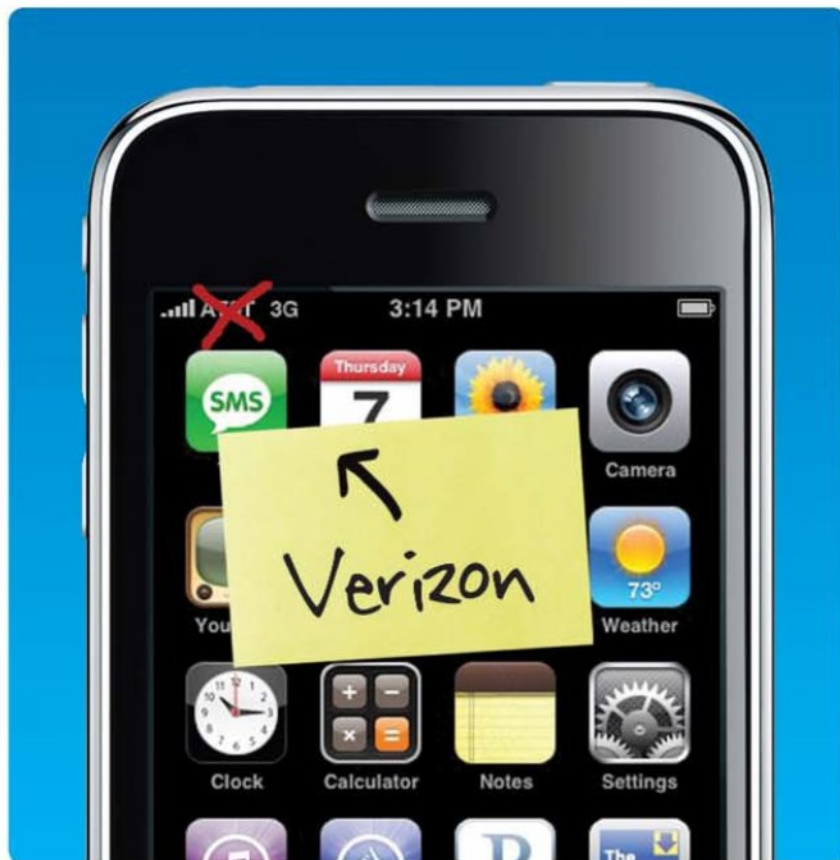
— **Adam Eric Junkroski**

After reading your *Feedback* column for many months now, I can't help but wonder, just how spoiled are Mac users? They have no idea how great they have it. After using a PC for nearly three decades, my only regret is that I didn't switch to a Mac sooner. Apple makes the best hardware and software computer solutions I've ever used. I've used many operating systems over the years (Unix, CPM, MS-DOS, and so on), and Mac OS X is by far the best. Every Mac user should have to "do time" with a Windows-based PC on a weekly basis. Their opinions of Mac OS X would be far more favorable.

— **Lou Saad**

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iPhone

Verizon and Apple: To Be or Not to Be?

Should the iPhone move to Verizon? **BY DAN MOREN**

There's been a lot of hubbub recently over reports that Verizon and Apple are talking about expanding the choice of carriers for iPhone users. Would this be a good thing? We decided to give each side of the debate an ardent champion—me.

Point: Verizon and the iPhone Are a Match Made in Technology Heaven

If there's one weak point in the iPhone's seeming invulnerability, it's the Achilles'

heel called AT&T. Since day one, potential iPhone customers have hemmed and hawed over whether to purchase the handset, because they would have to switch providers—many of them from Verizon Wireless, AT&T's primo rival.

So the news that Apple and Verizon might strike a deal to bring the iPhone—or other portable devices—to the Verizon network has consumers singing Handel's "Hallelujah" chorus. Way back when the iPhone was in the planning phase,

Verizon reportedly took a pass on a chance to help bring it to market, because the company was reluctant to give Apple the share of subscriber revenues that AT&T proved all too willing to shell out.

In hindsight, the Apple-branded handset seems to be the "one that got away" for Verizon. The iPhone has gone on to become a blockbuster seller, pulling in plenty of profits not only for Apple, but for AT&T as well. The wireless provider said it activated 1.6 million of Apple's handsets in the most recent quarter, many for users who were converts from other networks. It's been noted that the iPhone may be a substantial factor in keeping AT&T's wireless business in the black, given its lately shrinking profits.

The iPhone market is certainly a tantalizing target for Verizon, but what does Apple get out of the deal? Having been spurned by the company once, why would the iPhone maker go back to it now? Simple: because it's good business. Although AT&T and Verizon are duking it out for the title of the nation's best network, Verizon's network is widely perceived as more robust, with wider coverage, while many AT&T customers complain loudly about dropped calls and poor coverage. If AT&T is the chink in Apple's armor, it's no surprise that Apple wants to patch it up with stronger stuff. Who better than the nation's self-proclaimed "largest 3G network" to fill the gap?

Of course, matters are complicated by the exclusive deal AT&T and Apple supposedly struck, which takes the two companies through 2010 or 2012—accounts vary. It's possible that the terms of that deal have changed—recent stories have AT&T trying to get Apple to extend the contract—but it also lends credence to rumors that Apple is shopping other devices to Verizon. Presumably those devices wouldn't be subject to the same exclusivity.

A partnership with Verizon would also present technological challenges, as Apple chief operating officer Tim Cook pointed out in the company's most recent conference call with financial analysts,

when he effectively declared the death of CDMA, Verizon's wireless protocol of choice. However, since Verizon is planning to transition to the GSM-compatible LTE standard for its next-generation network, those hurdles will be moot within the next few years. With all that amassed evidence, the question is not "Why Verizon?" but rather "Why not Verizon?"

Counterpoint: Why Verizon Makes No Sense

Apple ditch AT&T for Verizon? You gotta be nuts. Seriously, folks: Verizon and

structure requirements, and additional customer support personnel. And compared to the global GSM standard, CDMA exists in very few places outside the United States. Besides, there's the matter of philosophy: Apple doesn't want the customer to have to think about which technology or which provider to choose—just buy an iPhone.

Verizon has made forays into the touch-screen space with the LG Voyager and the BlackBerry Storm, but try as it might, the company hasn't managed to produce anything that competes with the

If AT&T is the chink in Apple's armor, then it's no surprise that Apple wants to patch it up with stronger stuff.

Apple? It's about as likely as Bruce Willis and Cybill Shepherd teaming up for a reunion of *Moonlighting*.

Apple and AT&T have been partners for two years now, and while that might not exactly be considered a long-term relationship in the business and technology worlds, it's worth noting that the companies have released two iPhone models together. Apple wouldn't toss that partnership aside lightly.

Verizon is certainly a likely enough partner—it's not as though Apple is going to jump ship for T-Mobile or Sprint. But however loudly Verizon may brag about its amazing network, AT&T still has 78 million subscribers—and that's nothing to sneeze at.

While the technology hurdles aren't impossible to overcome, the chances that Apple will make a CDMA-based version of the iPhone go by the names of "Slim" and "None." An LTE phone for the forthcoming 4G network is a possibility since it will be GSM compatible, but given how recently most of the providers finished rolling out their 3G networks, it's going to be a while before the 4G networks reach anywhere near the same level of market saturation.

Why not two separate smart-phone models? It just doesn't seem like Apple's *modus operandi*. It would mean two manufacturing processes, dual infra-

iPhone's ease of use, broad application platform, and sleek design. Verizon has also shown itself willing to play the field with anybody: a *Wall Street Journal* article suggested that the company is also courting Microsoft to partner for a phone product. That might not sit well with Apple, given that the company enjoys being the center of attention.

The more likely explanation for the Verizon and Apple talks, as some have suggested, is to give Apple some leverage against AT&T. When Apple discontinued the original iPhone in favor of the iPhone 3G, the company gave up most of the concessions it had wrung out of AT&T—such as a cut of subscriber revenues—in return for the wireless provider's subsidizing the price of the phone. That lower cost helped propel the iPhone 3G into its widespread popularity; if Apple could cut the price even further, it would make things that much sweeter for the company.

But Apple is likely to talk AT&T into those terms only if it has a substantial bargaining chip, in this case a reasonable rival to turn to in lieu of AT&T. And in the current circumstances, Verizon is a prime candidate. Actually making a deal with Verizon isn't what Apple's after: it just wants to bluff AT&T into folding its hand. ❌

Dan Moren is a *Macworld* associate editor.

LAPTOPS

MacBooks Sweep Consumer Reports' Laptop Ratings

Apple has scored itself a trifecta with the release of the June issue of *Consumer Reports*. The highly regarded publication gave the company top rankings in three of its notebook categories: 13-inch models, 14-inch to 16-inch laptops, and 17-inch models.

The MacBooks bested their competitors, despite the higher prices for the Apple systems. The \$1,999 15-inch MacBook Pro, for example, scored 75 on the magazine's 100-point scale compared to the runner-up—a \$700 Toshiba Satellite, which earned 64 points.

Apple's laptop line dominated the 13-inch category in particular; it was topped by the unibody MacBook and followed by both the MacBook Air and the white polycarbonate MacBook. In addition, the 17-inch MacBook Pro got the highest rating of any notebook reviewed by *Consumer Reports*, scoring 80 points, and nabbed an Excellent or Very Good rating in every tested category.

Apple's desktops didn't fare quite as well, but both the Mac mini and the iMac took home silver medals in their respective categories. The company also earned the highest marks for computer tech support in both the desktop and notebook categories.

—DAN MOREN



Thanks a billion.

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The one billionth app, *Bump* created by Bump Technologies, was downloaded by Connor Mulcahey, age 13, of Weston, CT. As the grand prize winner of Apple's one billion app countdown contest, Connor will receive a \$10,000 iTunes gift card, an iPod touch, a Time Capsule and a MacBook Pro.

[Official Rules](#) ▶ [Reglas Oficiales](#) ▶

One Billion Served

Nine months after opening its App Store, Apple announced on its Web site in April that it reached the milestone of 1 billion downloads of iPhone applications. (That number includes free apps, paid apps, and app updates, whether downloaded through iTunes or directly onto an iPhone or iPod touch.)

When 13-year-old Connor Mulcahey, from Weston, Connecticut, downloaded *Bump*, an app for swapping contact information (macworld.com/4829), he pushed the count over the top. Apple awarded Mulcahey a \$10,000 iTunes gift card, an iPod touch, a Time Capsule, and a MacBook Pro—not a bad haul for downloading a free app.

The App Store currently has more than 35,000 apps available for download, including big-name titles that have helped the iPhone and the App Store grow large in a relatively short period of time. And during the second-quarter conference call with analysts, Apple chief financial officer Peter Oppenheimer said that “software is the key ingredient for a great mobile experience,” and that Apple is very excited about the types of apps developers will create using the features in iPhone OS 3.0. The only question now: how long will it take to get to 2 billion?—JIM DALRYMPLE

By the Numbers

24

Number of hours per day English-speaking MobileMe users can now get live chat support

21 Mbps

Difference in wireless data-transfer speeds between Bluetooth 2.0 and 3.0

600,000

Registered Facebook users who voted on the site's new terms of use

PEOPLE

Woz Talks about Hackery, Technology

While you may know that Apple cofounder Steve Wozniak tore it up on ABC's *Dancing with the Stars* and recently joined hardware startup Fusion-io, I sure didn't know that he's still using Eudora, an e-mail program that I stopped running circa 2002.

Woz reveals that and many other fascinating quirks in an interview with productivity blog Lifehacker (macworld.com/4830). Other gems: he packs a 17-inch MacBook Pro and travels with an iPhone and a BlackBerry—why both, I don't know. Then again, this is a guy who carries around sheets of \$2 bills and is a master of Segway polo. But I digress.

On the software front, Woz runs Safari and says he has never really had time to check out Linux, although he does add that “Linux people always think the way I want to think.” While he used to have a jailbroken iPhone, he doesn't anymore, due to the constant back-and-forth that's required to reenact hacks after every update of Apple's software.—CYRUS FARIVAR



HARDWARE

G-Speed eS Pro XL, from G-Technology (www.g-technology.com): Rack-mountable RAID storage system comes in 2U or 3U configurations (starting at \$7,000).

Guardian Maximus, from Newer Technology (www.newertech.com): Quad-interface desktop RAID system comes in capacities ranging from 250GB to 2TB (pricing starts at \$230).

Micro Auto Charger, from Belkin (www.belkin.com): Power accessory plugs into a car's cigarette-lighter jack to provide a USB port for charging iPhones or iPods (\$15).

Nikon D5000, from Nikon (www.nikonusa.com): 12.3-megapixel digital SLR camera can shoot continuously at 4 frames per second and record 720p HD movies (body only, \$730).

PEOPLE

'X-Men' Mutant Gives Word Two Claws Down

Look out, Microsoft—you've gone and made Sabretooth mad. Actor Liev Schreiber, who plays the hirsute villain in the new *X-Men Origins: Wolverine*, was a guest on National Public Radio's weekly news-quiz program, *Wait Wait... Don't Tell Me!* During the interview, host Peter Sagal asked: "How annoyed do you get when you type your name into Microsoft Word, and it keeps wanting to spell it 'Live'?"

"So annoyed that I moved to a Mac," Schreiber said. I bet Sabretooth would make short work of Clippy.—**PHILIP MICHAELS**



LEGAL

DVD Copying Goes to Court—Why You Should Care



RealNetworks and the major movie studios are currently fighting it out in court in a case that could determine the fate of DVD copying.

RealNetworks would like to sell its \$30 RealDVD application, which lets Windows users back up commercial DVDs to a computer's hard drive for archival purposes (these backup copies are still protected and can't be burned to DVD). The movie industry wants to maintain control of its content and argues that RealNetworks is in violation of the Digital Millennium Copyright Act. (The Motion Picture Association of America, in fact, won a temporary injunction in October 2008 that prevents RealNetworks from selling RealDVD.)

The question at stake is, once you purchase a hunk of media, is it or is it not yours to do with as you legally please? If the "fair use" doctrine triumphs, the media companies fear they'll go out of business because their wares will be pirated from one end of the world to the other. And if the DMCA wins the day, the "fair use" crowd believes they'll be ground under The Man's heel.

I don't think this trial will decide the question once and for all because of its narrow focus, but I do hope it sets us on the path to a more logical approach to dealing with the issue. My archived copy of *Mary Poppins* depends on it.—**CHRISTOPHER BREEN**

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iPod + iTunes News

Everything you need to know about digital music

U.S. Military Extensively Using iPod Touch

In a recent *Newsweek* article (macworld.com/4831), under the headline "Apple's New Weapon," Benjamin Sutherland waxes eloquent about how the iPod touch is being used for tasks as varied as translation, data sharing among soldiers, and even the calculation of ballistics.

The article points out that since the iPod touch is familiar to most recruits, training soldiers to

use the device is straightforward. They can use it without encountering much of a learning curve.

We know, of course, that the iPod is designed to play video and audio, but Sutherland points out another potential use: "Consider the impact of showing villagers a video message of a relaxed and respected local leader encouraging them to help root out insurgents."

I smell a new Apple ad campaign in the making.

—CYRUS FARIVAR

Price of Prince iPod Will Make Doves Cry

Are you a huge Prince fan? If so, you may be a prime candidate for this limited-edition iPod celebrating his career. Just 950 of the Prince Opus: 21 Nights iPods (www.princeopus.com) will be made.

The purple iPod touch comes loaded with a 40-minute video made by Prince himself of his "21 Nights" performance at London's O2 Arena in 2007, as well as 15 tracks from the artist's *Indigo Nights* live album. The iPod is packaged with an exclusive book of Prince photographs, produced by publisher Kraken Opus. All this can be yours for a mere \$2,100.—DAN MOREN



iPOD TOUCH, iPhone SALES TOTAL 37 MILLION UNITS

During Apple's second-quarter earnings conference call—in which the company announced a profit of \$1.21 billion—Apple chief operating officer Tim Cook revealed that iPod touch sales had more than doubled year over year. Apple has now sold a combined 37 million iPhones and iPod touches.

Cook called that number an "enormous platform for developers," adding that with the recent changes introduced in Apple's iPhone 3.0 SDK, which went beta in March and is expected to be released to customers this summer, Apple and developer partners will keep the company years ahead of everyone else. All in all, Apple sold more than 11 million iPods and nearly 3.8 million iPhones during the quarter.

—PETER COHEN



iPhone

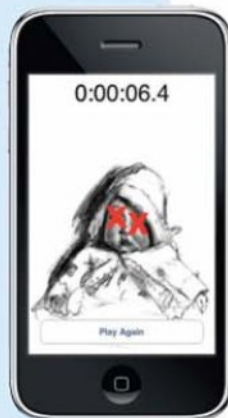
Apple Says It's Sorry about Baby Shaker App

Most controversies about App Store apps have revolved around those Apple rejected rather than those it erroneously let through. But you can definitely count Baby Shaker among the latter.

Sikalosoft's Baby Shaker app featured a drawing of a baby accompanied by audio of crying; the goal was to shake the phone until the baby stopped crying. Some groups called the application offensive, especially in light of the dangers of shaken-baby syndrome. Defenders of the program said the application is clearly humorous in its intent.

Apple pulled the app from the App Store not long after its release, and an Apple spokesperson then issued the following apology: "This application was deeply offensive and should not have been approved for distribution on the App Store. When we learned of this mistake, the app was removed immediately. We sincerely apologize for this mistake and thank our customers for bringing this to our attention."

—DAN MOREN



iPOD TOUCH AND iPhone PHOTOGRAPHS COURTESY OF APPLE

SOFTWARE

Mudbox 2009, from Autodesk (usa.autodesk.com): Digital sculpting software adds a new production-focused texture paint workflow (\$745).

NetDiagrammer, from CS Odessa (www.conceptdraw.com): Plug-in for ConceptDraw Pro 8 helps IT managers and network administrators plan and illustrate a computer network topology (\$49).

ProfCast 2.5, from Humble Daisy (www.profcast.com): Lecture-recording and podcast-creation software adds the ability to export recordings as .m4v files (\$60; update, free).

SecuriKey for Mac 3.1, from GT SecuriKey (www.securikey.com): Updated hardware-software security combo features enhanced AES data encryption (starting at \$130).

LAPTOPS

Apple to Netbooks: Drop Dead

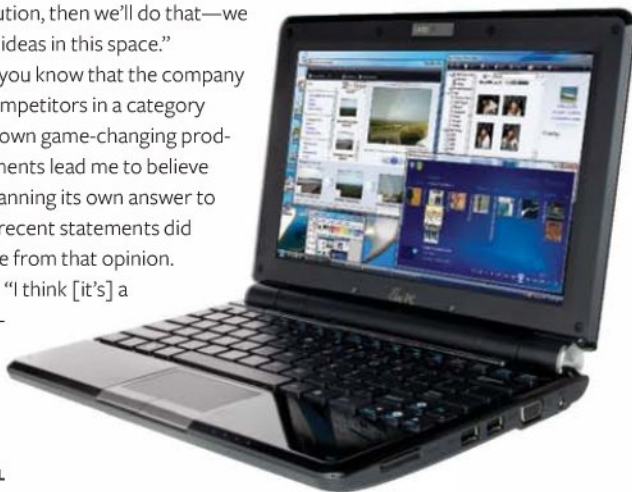
As someone who's fascinated by the idea of Apple making some sort of tiny laptop-like device, I pay close attention to what Apple says about the whole netbook market. (If you *haven't* been paying attention, a netbook is a cheap, small laptop, and Apple doesn't make one.)

During the company's conference call for second-quarter financial results, analysts once again wanted to know what Apple was doing in the netbook market. As he did three months earlier, Apple chief operating officer Tim Cook dismissed current offerings, and said Apple has some ideas of its own.

Cook said netbooks have "cramped keyboards, terrible software, junky hardware, very small screens, and just not a consumer experience... that we would put the Mac brand on, quite frankly." But he added that "if we can find a way to deliver an innovative product that really makes a contribution, then we'll do that—we have some interesting ideas in this space."

If you follow Apple, you know that the company often runs down its competitors in a category before introducing its own game-changing product. Cook's past statements lead me to believe that Apple is indeed planning its own answer to the netbook—and his recent statements did nothing to dissuade me from that opinion.

With smack talk like "I think [it's] a stretch to call [the netbook] a personal computer" circulating, can Apple's netbook entry be far behind?—**JASON SNELL**



Tech Trends

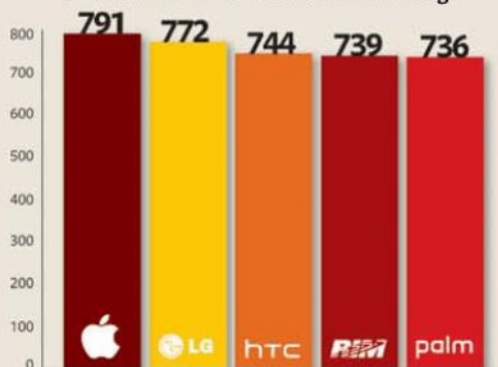
iPhone's Happy Users

It may not come as a huge surprise, but Apple's iPhone ranked number one in a survey of satisfaction among smart-phone customers from research company J.D. Power and Associates. The iPhone rated highly in ease of use, operating system, features, and physical design.

—MARYANN JONES THOMPSON

Source: J.D. Power and Associates

Smart-Phone Customer Satisfaction Ratings



PRODUCT WATCH

HARDWARE

Quadro FX 4800, from Nvidia (www.nvidia.com): Graphics card for Mac Pros features 1.5GB of memory, bandwidth of up to 76.8 GBps, and two Dual Link DVI connectors (\$1,799).

Rugged XL, from LaCie (www.lacie.com): Full-size version of rubberized orange and silver external USB 2.0 hard drive offers 1TB capacity (\$160).

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Hot Stuff

What we're raving about this month



Pro Tools 8

Pro Tools may be the industry-standard digital audio workstation, but that doesn't mean its developer, Digidesign, is going to sit back and relax. The release of Pro Tools 8 has brought some fantastic new features like audio comping, a Score Editor for writing in musical notation, new instruments, and the ability to view multiple lanes of data for each track. Pro Tools also includes Elastic Audio and Elastic Pitch, features that allow you to stretch audio in a variety of ways, making some of the most difficult audio-editing tasks a breeze. Pro Tools 8 includes a completely redesigned and customizable interface, with movable elements to fit the way you work. Registered Pro Tools users can upgrade for \$150; the full version sells for \$300 (www.digidesign.com).—JIM DALRYMPLE



Steven Slate Drums

Virtual drums have come a long way from a few years ago, when you had only MIDI drums that sounded like you were banging on a tin can. Steven Slate Drums allows you to enhance your songs with drums

based on kits from the likes of Led Zeppelin and AC/DC. Steven Slate Drums starts at \$149 for 20 drum kits, and works either as a stand-alone instrument or as an RTAS, VST, or AU plug-in (www.stevenslatedrums.com).—JIM DALRYMPLE

ChocoShuffle

Some say Apple's latest iPod shuffle is too small—it's without a doubt the easiest-to-lose iPod Apple's ever made. And the shuffle's size makes it tempting to stick the player in your pocket with your keys and other scratch-inducing items. If you'd like to add a little protective bulk to your shuffle, SwitchEasy's ChocoShuffle may have you salivating. The \$9 ChocoShuffle, available in milk chocolate, white chocolate, or strawberry chocolate, is a silicone case that turns your iPod shuffle into a realistic chunk of a chocolate bar. The case fits the shuffle perfectly, exposing only the headphone jack and control switch on top, and the shuffle's clip on the back. The thick silicone protects your shuffle and enhances your grip, and the ChocoShuffle is also a clever way to surprise your sweetheart with the tiny iPod—just be sure to warn them before they take a bite (switcheasy.com).—DAN FRANKS



iamaKey

I can't count the number of times a tiny flash drive would have come in handy but I didn't have one with me. When I'm carrying my laptop bag, I always have a thumb drive or other data-storage gadget on hand, but most of the time I'm packing little more than my wallet, iPhone, and keys. Which is why I've found LaCie's iamaKey to be so useful. The iamaKey is a USB 2.0 flash drive for your key ring, but unlike the bulky, key-shaped thumb drives I've seen in the past, the metal iamaKey really does look like, well, a key. In fact, it's about the same size and shape, and even the same thickness, as my house key. And to help it withstand a beating, the iamaKey's gold USB connector is scratch- and water-resistant, and its protective edges help prevent abuse in the first place (4GB, \$27; 8GB, \$37; www.lacie.com).—DAN FRANKS

Photo Cabine

Need to let off a little steam? Then check out Photo Cabine, by LeDjam. All you need for this free Web-based photo booth service is a Webcam, such as your iMac's or Mac laptop's built-in iSight, and you're good to go. Enter the Photo Cabine's URL into your browser of choice, click on the photo booth curtain, and then click on the red button to start taking your series of images. (All instructions are in French, but they're easy to grasp.) When the picture-taking is done, you wait a moment for the picture strip to appear, along with options to print it, save it as a JPEG (in either large or "blog" format), or exit the booth (www.laphotocabine.com).—SUE VOELKEL





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FUJITSU

Reviews



Bargain Shooters If you don't currently have a digital camera, or if your point-and-shoot digital camera is a few years old, now is a great time to consider buying a new one.

Affordable Point-and-Shoot Cameras

For around \$100, you can find an excellent snapshot camera **BY BEN LONG**

While the current economic environment is filled with uncertainty, there's one definite, reliable fiscal principle in technology: digital cameras continuously improve and become more affordable. These days, this allows budget-minded people to buy a surprisingly good digital camera for under \$100, one that produces decent (if not outstanding) images and packs a robust set of features.

The snapshot-oriented cameras at this price have automatic modes that do the work of adjusting settings for you. These cameras are a great place to start for beginners who know nothing about photography.

The \$100 cameras that used to dominate the market had 3 to 4 megapixels, but today a \$100 camera can get you between 7 and 10 megapixels. The larger pixel count allows you to print larger photos while maintaining high image resolution, or to make tighter crops.

Today's \$100 camera may offer other advantages over an older point-and-shoot. For example, it's likely to yield much better results and perform better in low light. Also, it has a range of features that didn't even exist until recently; from face-detection autofocus to HD video, a mere \$100 outlay can buy you a lot of new capabilities.

What You Get for \$100

For this review, we looked at five point-and-shoots that have a manufacturer's suggested retail price of around \$100. If you shop around, you can find these cameras for under \$100. We reviewed the Canon PowerShot A470, the GE A835, the Kodak EasyShare C913, the Nikon Coolpix L19, and the Polaroid T1031.

All the cameras we reviewed are fairly small, though not as tiny as some more-expensive point-and-shoots. All have full automatic modes. And all pack a zoom lens, a built-in flash, a movie-shooting capability, and scene modes that tailor the camera's settings to particular shooting situations.

HOW WE RATE

SUPERIOR:  VERY GOOD:  GOOD:  FAIR:  POOR: 

What you won't get are high-quality lenses, manual features for assuming more photographic control (although there's one exception to this in our group of cameras), and sturdier bodies. You'll need to shell out more cash for these features, as well as to get other options such as wireless Internet access for e-mailing pictures or uploading them to a photo-sharing Web site like Flickr.com directly from the camera.

Build and Handling

For \$100, you'd probably expect a chintzy-feeling camera. While the cameras in our review are far from bullet-proof, they all are sturdy. None of them exhibited creaking or flimsiness. The mode dial on the GE was loose, but it didn't feel like it would break.

All of the cameras in our review have plastic bodies with a nice finish. The Canon is the prettiest, though the Polaroid has the thinnest design. With protruding lens barrels, the Canon and Kodak models were awkward to carry in a pocket or bag.

These five cameras all have zoom lenses that extend when you power them on, and they start up quickly. Each camera was ready to shoot as soon as the lens was fully extended.

Thanks to its comfortable handgrip, the Nikon is the easiest to hold. The Canon and the Kodak have moldings and grips that let you easily grasp them using just your right hand. The GE and the Polaroid don't provide such grips.

Cameras at this price tend to use LCDs that aren't as nice as those found on pricier cameras. All of the LCDs in this group suffered from occasional vertical streaking when used for shooting in bright sunlight. These streaks didn't appear in the final images, but they were annoying during shooting. The GE's 2.5-inch

LCD was noticeably darker than the others', making it hard to use in very bright sunlight. The Canon and the Kodak also have 2.5-inch LCDs. The Nikon has a slightly larger 2.7-inch LCD, while the Polaroid has a 3-inch one.

One thing that's missing from all of these cameras is an optical viewfinder—the little peephole you might be accustomed to looking through, although it's quite possible that you've never actually used an optical viewfinder before. It can come in handy when the LCD screen is hard to see.

Automatic Pictures

All of the cameras we reviewed work just as you would expect. They all have an automatic mode that makes the essential camera adjustments for you.

Buttons to zoom in and away from your subject are located on the back of each camera, within thumb's reach. The Nikon has the best, most accurate zoom control. The GE, on the other hand, has a jerky zoom control that can make it difficult to get the precise framing you want. The zoom controls on the Canon and the Polaroid scored about the same, with the Kodak's zoom performing a little better than the GE's.

All of these models have a similar zoom range, from fairly wide to telephoto. The Nikon has the longest

Focus: Mobile Phone Cameras

Almost all modern mobile phones have cameras, so a lot of people think that a dedicated camera is unnecessary. But even if you have a 5-megapixel camera phone, any of these \$100 point-and-shoots will still create better images—much better than the pictures from the iPhone 3G's 2-megapixel camera. Pixel count is not nearly as important to overall results as is lens quality, and mobile phones simply don't have room for a high-quality lens.

Mobile phones also have inferior light meters, most don't have zoom lenses, they lack sophisticated image processing, and they certainly don't have any advanced photography features, such as macro support. They're also harder to control when you're composing shots. While mobile phones can sometimes yield nicely stylized images, they all fall far short of any of the cameras we've reviewed here.



Canon PowerShot A470



PROS: Great image quality; excellent macro feature; good design, interface, and feature set; good performance at high ISO.

CONS: A little bulky; images have a slight but correctable color cast; flash is a little strong.

PRICE: \$100

COMPANY: Canon,
www.usa.canon.com

FULL REVIEW: macworld.com/4542



range, offering a 3.6x zoom, with the Canon coming in just behind, at 3.4x. The rest offer a 3x zoom. Because these zoom ranges are in the same ballpark, this feature shouldn't factor hugely in your buying decision.

All of the cameras also offer digital zoom, which enlarges your subject by using a mathematical algorithm to create additional image pixels. Digital zoom never works very well because it usually degrades the image quality, and the digital zooms on these cameras are no exception. You'll want to deactivate this feature when you get the camera.

Like all digital cameras these days, the models we reviewed all have autofocus. And they all work the same way: after

your desired composition before you press the button the rest of the way.

The Canon, GE, and Kodak cameras have a multipoint autofocus option that attempts to locate the subject automatically. This feature works well and can be handy in some situations. On the GE, you must switch to a different shooting mode to access this feature (we'll discuss shooting modes shortly). The Polaroid lets you switch between a narrow and wide focusing area, while the Nikon offers no multipoint autofocus at all.

Since these cameras will be used mostly for snapshots, all of them except the Kodak include a face-detection feature. Face detection automatically locates and focuses on a face in your

While this feature does work, it can take all three cameras a while to detect a smile—your subject might need to hold that grin for a long time. In general, this is a gimmicky feature that shouldn't be a key factor in your buying decision, and you might want to turn it off if you buy a camera that has it.

The Nikon also provides a continuous-autofocus feature, which constantly focuses as you move the camera, rather than only when you half-press the shutter button. This feature can be handy when you're shooting an action shot, but because the camera is always working, continuous autofocus can drain your batteries faster than usual.

Overall, when the camera is shooting in auto mode, there's no clear winner among the models in our roundup. All did a good job of autofocus and choosing exposure settings.

The \$100 cameras that used to dominate the market had 3 to 4 megapixels. Today a \$100 camera can get you 7 to 10 megapixels.

framing your shot, you press the shutter button down halfway, which tells the camera to focus and to meter the light. The camera will then beep or give some kind of indication that it has locked in the focus. You then press the shutter button down the rest of the way, and the camera takes the picture. All of these cameras provide quick autofocus, although the GE is the slowest of the bunch.

Low-light conditions can trip up an autofocus system. During testing, the Polaroid performed the best, with speedy, accurate focus in low light. At the other end of the spectrum was the Kodak, which simply showed an AF warning and then gave up. It did allow us to take the picture anyway.

All of these cameras offer a single-point autofocus mode, which focuses on whatever is in the center of the frame. If you want to focus on something at the edge of the frame, you must place that object in the center of the LCD, pressing the shutter button halfway to lock in the focus, and then reframe for

scene. On the four cameras that have this feature, it worked well.

The GE, Nikon, and Polaroid cameras also include smile detection. Working in tandem with face detection, this feature automatically focuses on a face, but the camera doesn't take a picture until the subject smiles. The Nikon automatically fires when the subject smiles; the GE and Polaroid require you to press the shutter button first, but both of them wait to shoot until the subject smiles.

Shooting Modes

All of these cameras offer different shooting modes, which adjust the camera settings to suit your shooting environment. Most people who use a camera like the ones in our group will use the auto mode almost all the time.

The Nikon actually has two auto modes. Its Easy Auto mode tries to assess if you're shooting in a situation that requires special settings. While this feature sometimes works, it also often gets things wrong and winds up using inappropriate

Nikon Coolpix L19



PROS: Nice design; good interface; good video quality.

CONS: Detail problems; slight but correctable color cast; Easy Auto mode doesn't really work.

PRICE: \$110

COMPANY: Nikon,
www.nikonusa.com

FULL REVIEW: macworld.com/4545





Polaroid T1031



PROS: Compact design; HD video support; manual controls; big LCD.

CONS: Low-quality lens makes for poor image detail; color casts in most images; no dedicated control for changing modes.

PRICE: \$120

COMPANY: Polaroid,
www.polaroid.com

FULL REVIEW: macworld.com/4546

with the Canon and the GE coming in with about the same number. However, scene modes aren't much good if you don't use them. With all of these cameras, you must wade into the menu system to select the mode that's most appropriate to your scene. For example, the Polaroid offers night scene, night, and candlelight modes. The Nikon's Easy Auto mode, meanwhile, tries to

settings. Fortunately, the camera also provides a normal auto mode that's akin to the auto mode on the other cameras.

In addition to auto mode, all of these cameras offer scene modes, which are predefined settings tailored to specific situations. For example, a portrait

scene mode will automatically use face-detection autofocus, as well as try to select exposure settings that render the background softer in order to bring attention to your subject.

The Kodak, Nikon, and Polaroid cameras have the most scene modes,

assess the situation and switch to the proper scene mode. This feature didn't work very well, so you're better off shooting in normal auto mode.

Of all the scene modes available, a night portrait mode is the most practical scene mode. This combines a flash with a long exposure, for times

Buying Tips

Today's digital cameras are chock-full of features that make taking great pictures easier than ever. In fact, the most difficult task you'll face is picking one camera from the seemingly endless selection available. Our tips will help you make the right decision.

The Megapixel Myth A high megapixel rating doesn't mean better image quality. For example, the camera in our review with the best image quality had the lowest megapixel rating of the group. More megapixels does give you more flexibility when making enlargements or cropping, though.

Zoom In Look at optical zoom and ignore digital zoom. Optical zoom relies on the optics of the camera to magnify an image, and it produces much better image quality than digital zoom. Digital zoom offers a longer zoom range, but because it uses *interpolation* (a mathematical algorithm that creates dots for an image), the image quality isn't as good as with optical zoom.

Frame Your Shots All of the cameras in our review rely solely on the LCD as the viewfinder and forgo an optical one. In fact, optical viewfinders in general (not just in \$100 cameras) are rarities today.

Camera Modes Point-and-shoots offer shooting modes that automatically set the camera based on your situation. For example, a portrait mode keeps foreground subjects in focus. With \$100 cameras, you'll most likely rely heavily on these automatic shooting modes. If you like to tinker with camera settings, look for a point-and-shoot with manual shooting modes.



Power Play Some cameras use AA or AAA batteries, while others come with a proprietary rechargeable battery. If you plan to be out and about with your camera, consider the battery type and figure out what you'll need to do to have an extra battery at hand.

File Formats Most \$100 point-and-shoots save pictures as JPEGs, a commonly used file format. Often you can choose the image quality to use, such as fine or superfine. The better the image quality, the bigger the JPEG file size, and the more room the picture will take up on your memory card.

Memory Cards Cameras require a memory card, usually a Secure Digital (SD) card. The cards that are bundled with cameras have a small capacity, so you might want to buy an extra card with a larger capacity. Some cameras have a small amount of built-in memory that holds a few pictures, but not enough to rely on solely.

Software Bundles Almost all point-and-shoot cameras work with Apple's iPhoto software for importing pictures from the camera. You can also access the memory card using a card reader, and use the card as you would any other storage device. All cameras come with software, usually Windows only.

Video Point-and-shoots let you record videos at resolutions of 640 by 480 and/or 320 by 240 pixels. The video quality often isn't as good as it is with a dedicated camcorder, but it will do in a pinch.—ROMAN LOYOLA

when you're shooting images of people at night and you don't want the background to disappear into total blackness. The Canon camera was the only one in our review that didn't have this mode.

For users who want the highest degree of manual control, the Polaroid comes out on top with the fullest complement of manual options. However, all of the cameras in this roundup include exposure compensation, which lets you tell the camera to over- or underexpose—an invaluable feature for handling bright scenes. The Canon also scores well with its manual features, thanks to its three metering modes, which make it easier to handle backlit situations.

Flash

All of these cameras have a small, built-in flash with a short range. You actually don't want to use the flash in low light—these types of flash pictures always look harsh and overblown. If you can, it's best to move the subject to an area with better light, or try using one of

the night scene shooting modes, which will adjust the camera appropriately.

As odd as it may sound, the flashes on these cameras act more like *fill flashes* and are actually made for shooting in bright light, when a subject is wearing a hat or standing in shade. The fill flash helps the camera capture the details in the shadows, making for a better picture. In general, all of these cameras do OK with fill flash. The Canon's fill flash was a little strong, and the Nikon fared the worst in this regard. The other cameras all generally produced similar results.

Fortunately, you can disable the flash on all of these cameras, and each

provides an auto ISO mode that will adjust the sensor so it's more sensitive to light, making it perform better in dimly lit settings. But the extra sensitivity to light also means that the camera is more sensitive to camera shake, and you have an increased chance of taking blurry pictures. When shooting in low light without the flash, the Canon, Nikon, and Polaroid cameras show an on-screen warning if they think there's a risk of blurring due to camera shake. The GE lacks this feature, and the Kodak tells you that an image is blurry only *after* you take the picture. When you're shooting in low light with a high ISO, keep the camera as

Kodak EasyShare C913



PROS: Nice design; easy to hold; good feature set.

CONS: Mediocre image quality; terrible movie quality.

PRICE: \$100

COMPANY: Kodak,
www.kodak.com

FULL REVIEW: macworld.com/4544



Point-and-Shoot Cameras Compared

	OUR PICK Canon PowerShot A470	GE A835	Kodak EasyShare C913	Nikon Coolpix L19	Polaroid T1031
RATING	★★★★	★★	★★★	★★★	★★★
PRICE	\$100	\$110	\$100	\$110	\$120
PERFORMANCE *					
IMAGE QUALITY	Very Good	Poor	Fair	Good	Good
COLOR QUALITY	Very Good	Fair	Good	Good	Good
FLASH QUALITY	Good	Good	Good	Fair	Good
SPECIFICATIONS					
RESOLUTION (IN MEGAPIXELS)	7.1	8.0	9.2	8.0	10.0
OPTICAL ZOOM/FOCAL LENGTH (35MM EQUIVALENT)	3.4x/38mm–132mm	3x/36mm–108mm	3x/36mm–108mm	3.6x/41mm–145mm	3x/36mm–108mm
BATTERY TYPE	two AA batteries	two AA batteries	two AA batteries	two AA batteries	rechargeable lithium ion
MEDIA	SD, SDHC, MMC, MMC Plus, HC MMC Plus	SD, SDHC	SD, SDHC	SD, SDHC	SD, SDHC
SIZE (W X H X D, IN INCHES)	4.1 x 2.2 x 1.6	3.6 x 2.3 x 1.1	3.6 x 2.4 x 1.0	3.8 x 2.4 x 1.2	3.8 x 2.3 x 0.7
WEIGHT (IN OUNCES)	5.8	4.7	4.8	4.6	4.6

* Scale is Superior, Very Good, Good, Fair, and Poor.

still as you can to reduce the risk of blur. Use a tripod whenever possible.

Macro Shots and Movies

For shooting extreme close-ups, all of the cameras offer a macro feature, with the Canon providing the best results at incredibly close distances. The GE was the next-best performer, and the Nikon turned in mixed results. Neither the Polaroid nor the Kodak could get nearly as close as the other three cameras.

All of these cameras also capture 640-by-480-pixel movies at 30 frames per second. The Polaroid goes one better and includes an HD mode that shoots 1,920 by 1,080 video. The Canon and the Nikon also allow you to record movies in macro mode.

In our testing, the Canon had the best-looking videos, and the GE and Kodak cameras had the worst movie quality of the group. The Nikon came in behind the Canon; its video looked good, but the Nikon was slow in adjusting for different lighting situations. The video quality on the GE and the Kodak is far worse than the still-photo quality; images are severely pixelated and suffer from strange color artifacts. If you plan to shoot video, you might want to skip these two cameras. And while the Polaroid produced HD-resolution video, its quality still left much to be desired.

Image Quality

Ultimately, you should pick a camera based on the image quality it produces. With this group of cameras, though, you need to remind yourself that they cost only around \$100.

One way a manufacturer can lower the price of a camera is to use a lower-quality lens, and the lens is the weakness on all of these cameras, to varying degrees. In addition to their inability to render fine details, you'll also find that when you zoom in, areas of what should be smooth color are somewhat mottled.

In descending order of image quality, the Canon scored best with its clean

Overall, when the camera is shooting in auto mode, there's no clear winner among the models in our roundup.

images and good metering. The Nikon came in second, though it had a harder time metering some situations. The Polaroid came in very close behind the Nikon, followed by the Kodak and then the GE, which lagged noticeably, due to very bad optics and overall muddiness.

All of these cameras yield images with a color cast (a shift in colors toward a certain pigment). In the case of the Canon, Nikon, and Kodak cameras, the color cast is slight but recognizable, and easy enough to correct in iPhoto.

If you're just looking to print out 4 by 6 snapshots, you'll get decent results from these cameras. If you have a more serious eye, you might be bothered by some image-quality limitations. Overall, though, the image quality is acceptable for simple snapshots.

Macworld's Buying Advice

You shouldn't be surprised to discover that a \$100 camera has some rough spots, but you *should* be pleasantly surprised to learn that such an affordable camera packs so many features. In general, however, these cameras work best when you skip over

the fancier features like smile detection and stick with a basic auto or semi-auto mode. Stepping into a higher-priced category—\$200 to \$250—won't get you more pixels or features, but you will see a marked improvement in image quality.

The Canon PowerShot A470 emerges as our top pick. It combines great overall image quality (which should be your main consideration) and a feature set that's well suited to this market. The Nikon Coolpix L19 and the Polaroid T1031 are also both good contenders based on

their image quality; the Nikon earns points for its comfortable design, and the Polaroid for its low profile.

It's hard to enthusiastically recommend the Kodak Easy Share C913 or the GE A835 because of their mediocre image quality, but if price is paramount, then the GE A835 is a good deal—you can find it online for about \$70. ❌

Macworld Senior Contributor **Ben Long** writes about digital photography at the site www.completedigitalphotography.com.



GE A835



PROS: Good design and feature set; great macro capability.

CONS: Weak image quality; terrible movie quality; jerky zoom control; LCD difficult to see in bright sunlight.

PRICE: \$110

COMPANY: GE, www.general-imaging.com

FULL REVIEW: macworld.com/4543

macworld.com/reviews

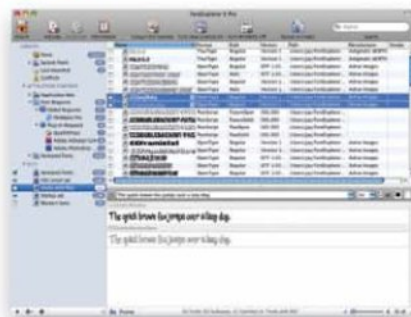
What we're reviewing online this month



SOFTWARE

Contour 1.1

RATING: **PRICE:** \$45 **COMPANY:** Mariners Software **URL:** www.marinersoftware.com
Contour 1.1 is story-development software that helps screenwriters build a structurally sound movie blueprint that meets the standards of Hollywood studio development departments and also satisfies moviegoers. Contour works much like a software-installation wizard, asking the user to answer simple questions and then constructing the foundation for a feature film in the process. The application is stable and easy to use, but some aspects of it—spelling errors in the interface and file exporting that doesn't format your documents correctly—make Contour feel like a work-in-progress (macworld.com/4764).



FontExplorer X Pro 2.0

RATING: **PRICE:** \$79 **COMPANY:** Linotype **URL:** www.fontexplorerx.com
FontExplorer X Pro 2.0.1 is the most advanced, capable font-management tool available. Its iTunes-like interface is

straightforward and easy to use, and when you need to customize it, you'll find hundreds of ways to do so. With the Application Sets feature, you can activate certain fonts when a specific application launches, and then optionally deactivate them when the application quits. The program's Font Detector can identify fonts used in many kinds of documents, and then create a new set from those fonts, activate them, or even help you purchase them if they're not already in your library. Designers and prepress professionals will find everything they need for font management with FontExplorer X (macworld.com/4765).



Multiwinia 1.3

RATING: **PRICE:** \$19 **COMPANY:** Ambrosia Software **URL:** www.ambrosiasw.com
Multiwinia 1.3 is a 3-D real-time strategy (RTS) game unlike any other. You play in a computer mainframe against your fellow 2-D digital life forms (Darwinians) in a pixelated war for supremacy. There are six different mission types: domination, king of the hill, capture the statue, assault, rocket riot, and blitzkrieg. Each map has multiplayer support for up to four players. The graphics are intentionally eighties retro, and when four armies are in combat, the game provides some unique and stunning visions of war. Cheeky, oddly adorable, and very fun to play, Multiwinia is a strong RTS game that has recently been ported to the Mac (macworld.com/4769).



Portraiture 2.0

RATING: **PRICE:** \$200 **COMPANY:** Imagenomic **URL:** www.imagenomic.com
Portraiture 2.0, a Photoshop plug-in, makes professional-quality portrait retouching a simple job for anyone using Adobe Photoshop or Photoshop Elements. While good lighting, makeup, and skillful camera work are still essential for good portraits, Portraiture will add that last bit of professional oomph to your images. Portraiture works its effects by automatically generating a mask for your image, based on skin tone. The program also offers some basic image-editing controls, such as Warmth, Tint, Brightness, and Contrast. These tools allow you to improve the color rendering of skin tones, whiten teeth, and conceal stray hairs and eyelashes (macworld.com/4532).

SiteGrinder 2 Professional

RATING: **PRICE:** \$349 **COMPANY:** MediaLab **URL:** www.medialab.com
Graphic artists and designers who are comfortable with mocking up Web sites in Photoshop will love the SiteGrinder 2 Pro Photoshop plug-in. SiteGrinder

Find It Online

For expanded reviews, type the blue URL at the end of each summary into your browser's address bar.



A man with dark hair, wearing a light blue t-shirt, is sitting at a desk in a bright office. He is looking towards the camera with a smile. In front of him is a computer monitor displaying a website with various images and text. To his right, a large, tilted red and yellow sale tag is superimposed over the image. The tag has a red top section and a yellow bottom section, with a red string tied around it. The text on the tag is in bold, sans-serif fonts. The background shows a window with a view of greenery outside.

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creates sites by recognizing Photoshop's layer comps as pages and reading specific *hints* that you add to the layer name of each page element. You can easily create photo galleries with thumbnails and Flash-animated slide shows, or include audio and videos. SiteGrinder doesn't have a way to format visited links, or to add heading tags or anchors (macworld.com/4771).

TimeBridge

RATING: **PRICE:** free **COMPANY:** TimeBridge

URL: www.timebridge.com

TimeBridge is a Web-based application that makes it easy to schedule meetings. You click on a button to create a new meeting request, type in the e-mail

addresses of the attendees, suggest a few dates and time slots, and click on Send. Each participant selects his or her preferred meeting slot, and TimeBridge aggregates the responses and chooses the day and time that works best. TimeBridge has a few bugs when it comes to

Intuos4 M

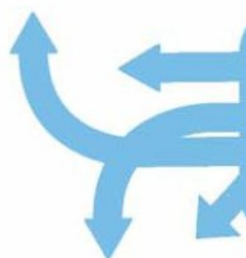
RATING: **PRICE:** \$349 **COMPANY:** Wacom

URL: www.wacom.com

With a drawing area that's 9³/₈ by 5³/₄ inches, the Intuos4 M tablet offers a whopping 2,048 levels of pressure sensitivity—great for artists working in Adobe Photoshop or an illustration program. The programmable hot keys feature illuminated OLED (organic light-emitting diode) minidisplays that electronically label each key, with either text or an icon, to indicate the function you've assigned to it. The cool-white ExpressKey displays, which float beneath the tablet's glossy black trim, instantly update to reflect different application-specific hot keys as you toggle from app to app. The Intuos4 M is one of the most ergonomic and easy-to-use pro-caliber tablets around (macworld.com/4768).



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BTKey Wireless Bluetooth Keyboard



Optimo
Portable 2.4 GHz Wireless Optical Mouse

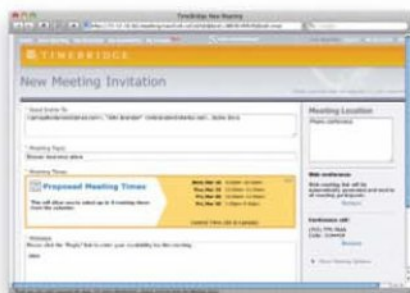


mHub
Ultra Slim Port 4-Port Hi-Speed USB2.0 Hub



mGlide
Portable 2.4GHz Wireless Optical Mouse

BTmouse
Bluetooth Wireless Laser 3-Button Mouse



syncing with iCal and Google Calendar, and it lacks support for Microsoft Entourage (macworld.com/4772).

HARDWARE

G-RAID Mini2 SSD

RATING: **PRICE:** \$2,499 (512GB) **COMPANY:**

G-Technology **URL:** www.g-technology.com

The G-RAID mini2 SSD is a portable RAID that uses a pair of solid-state drives (SSD). SSDs routinely suffer from slow write speeds, but the G-RAID mini2 SSD produced some of the fastest times we've seen in an external drive. Its

biggest drawback is its extremely high price. The drive has a price per gigabyte of \$4.88—by comparison, a typical 500GB hard drive has a price per gigabyte between 70 and 80 cents (macworld.com/4766).

G2210 22-Inch Widescreen Flat Panel Monitor

RATING: **PRICE:** \$239 **COMPANY:** Dell

URL: www.dell.com

This 22-inch backlit LED display is manufactured from recycled materials, and its cabling is free of PVC and other harmful chemicals. The G2210 has VGA and DVI connectors but omits HDMI and DisplayPort. When the monitor is switched on, a built-in ambient light sensor detects the level of brightness in the room and adjusts the screen accordingly. The G2210 displayed easy-to-read text and nice color, though on some screens we noticed some dullness in photos (macworld.com/4767).



PowerShot A1100 IS

RATING: **PRICE:** \$200 **COMPANY:** Canon

URL: www.usa.canon.com

Offering a nice feature set and very good image quality, the PowerShot A1100 IS is a great starter camera. The camera's 4x zoom lens offers a very nice range, from fairly wide to surprisingly telephoto (for a camera this small), and includes special mechanics that can counteract shake. The color output is very good, and the lens delivers sharp images that are free of any discernible distortion, vignetting, or chromatic aberration. The camera produces clean results when you're shooting at settings up to ISO 400 (macworld.com/4770).

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App Store Selections

iPhone and iPod touch software that's caught our eye

GAMES

The Oregon Trail 1.1.8

RATING: PRICE: \$6 COMPANY: Gameloft

URL: macworld.com/4750

This iPhone version of the educational game gets a cartoon makeover that distinguishes it from past editions while setting a fun, lighthearted tone. Its lengthy game play can tax the iPhone's battery, but The Oregon Trail makes excellent use of the phone's features (macworld.com/4751).—CHRIS HOLT



CHAT

Skype 1.0.3

RATING:

PRICE: free COMPANY: Skype Software

URL: macworld.com/4756

This mobile version of the voice-over-IP client delivers free voice and text chats, but with some limitations. You



can make Skype voice calls only over Wi-Fi, and audio quality can vary from call to call; for now, you must keep the app open to receive calls. Still, it's a fine, mostly no-cost way to extend your communication capabilities (macworld.com/4757).—JOHN BRANDON



SPORTS

MLB.com At Bat 2009 1.0.1

RATING:

PRICE: \$10 COMPANY: MLB Advanced Media

URL: macworld.com/4748

The 2008 edition of MLB.com At Bat had just about

anything a baseball fan could have asked for, except live game audio. That feature is the centerpiece of the 2009 version, and it improves upon a great offering for baseball fanatics (macworld.com/4749).—JASON SNELL

PHOTOGRAPHY

Fast Tap Camera 1.3

RATING: PRICE: \$1 COMPANY: Sonoso

URL: macworld.com/4752

Sonoso's utility lets you tap anywhere on the iPhone's screen to snap a photo. That's useful if you are taking a self-portrait. But the newfound capability slows down the save times for images (macworld.com/4753).—BEAU COLBURN



MUSIC

Radio Paradise 1.4

RATING: PRICE: free COMPANY: Stormy Productions

URL: macworld.com/4754

This slick Internet radio application provides an eclectic mix of streaming audio at three different bit rates—24 Kbps, 64 Kbps, and 128 Kbps—automatically choosing the best stream based on available bandwidth. The app's appealing Tunemark button lets you create a bookmark, e-mail a link with



information on a currently playing track, or buy that track from the iTunes Store (macworld.com/4755).—JEFFERY BATTERSBY

More Reviews

See more iPhone and iPod touch apps we've tested at iPhone Central (macworld.com/4164).

APPLICATION	DESCRIPTION	PRICE	RATING	FIND CODE *
ColorSplash 1.2 Hendrik Kueck	Image editor	\$2		4758
iStat 1.0 Bjango	iPhone statistics monitor	\$2		4759
Pace 1.6 Ron Forrester	Running and walking journal	\$5		4760
Reunion 1.0.1 Leister Productions	Genealogy-app companion	\$15		4761
Tumblr 1.0 Tumblr	Mobile micro-blogging client	free		4762

* Typing a find code after macworld.com in your browser's address field directs you to a product's review or overview. For example, macworld.com/4758 takes you to our review of ColorSplash.



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Top Products

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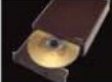
 PRINTERS Multifunction				
PRODUCT	RATING	PRICE	TYPE	FIND CODE
Pixma MX850 (pictured) www.canon.com	★★★★	\$299	ink-jet	3593
Photosmart C7280 www.hp.com	★★★★	\$199	ink-jet	3581

 SCANNERS Document and Flatbed				
PRODUCT	RATING	PRICE	TYPE	FIND CODE
ScanSnap S510M (pictured) www.fujitsu.com	★★★★	\$386	document	3321
Perfection V300 Photo www.epson.com	★★★★	\$99	flatbed	4071

 HARD DRIVES Desktop and Portable				
PRODUCT	RATING	PRICE	TYPE	FIND CODE
Mercury On-the-Go (pictured) www.macsales.com	★★★★	\$165	portable	4258
My Book Studio Edition www.westerndigital.com	★★★★	\$110	desktop	3295

 DIGITAL CAMERAS Point-and-Shoot				
PRODUCT	RATING	PRICE	TYPE	FIND CODE
EX-z250 (pictured) www.casio.com	★★★★	\$160	9.1-megapixel	4256
PowerShot SD880 IS www.canon.com	★★★★	\$228	10-megapixel	4257

 CAMCORDERS High Definition				
PRODUCT	RATING	PRICE	TYPE	FIND CODE
HDR-SR11 HandyCam www.sony.com (pictured)	★★★★	\$823	hard drive, Memory Stick	3731
Vixia Hv30 www.canon.com	★★★★	\$559	MiniDV	3708

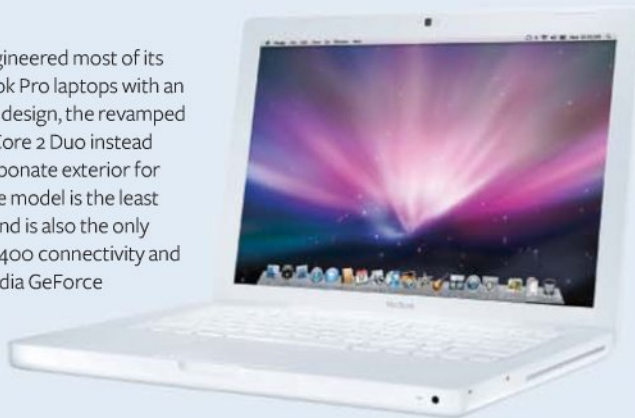
 DVD BURNERS Desktop and Portable				
PRODUCT	RATING	PRICE	TYPE	FIND CODE
Portable DVD±RW w/ LightScribe (pictured) www.lacie.com	★★★★	\$100	portable	3878
d2 DVD±RW w/ LightScribe www.lacie.com	★★★★	\$90	desktop	3900

Laptops: **MACBOOK 2GHZ (WHITE)**

RATING: ★★★★★ **PRICE:** \$989 **COMPANY:** Apple **URL:** www.apple.com **FIND CODE:** 4397

Why We Like It:

While Apple has reengineered most of its MacBook and MacBook Pro laptops with an all-aluminum unibody design, the revamped 2GHz MacBook Intel Core 2 Duo instead offers a white polycarbonate exterior for a retro look. This white model is the least expensive of the line and is also the only one to offer FireWire 400 connectivity and a matte screen. Its Nvidia GeForce 9400M graphics system makes it a surprisingly powerful model as well.




ALSO CONSIDER: **2.4GHz MacBook**; ★★★★★; \$1,299; macworld.com/4187 | **2.66GHz MacBook Pro**; ★★★★★; \$2,670; macworld.com/4490


Laptop Shopping Guide

- One of the major features that differentiates the various Mac laptops is connectivity. Users who need to transfer a lot of data quickly should turn to laptops that have FireWire ports.
- MacBook Pros offer higher-end features for the more professional user, such as faster connection types, faster processing, and more powerful graphics cards.
- People who use their laptop only for word processing and Internet connectivity may want to consider the more basic models of the MacBook or MacBook Air lines.

TOP PRODUCTS are those we've recently reviewed in a comparison of like products. As new products become available, we'll update this list. For longer reviews of these products and for other product recommendations, go to macworld.com/reviews. All prices are the best current prices taken from a PriceGrabber survey of retailers as of May 13, 2009. **FIND CODES:** In a browser's address field, typing in find codes after macworld.com/ quickly takes you to a product's review or overview. For example, you can find our review of the Apple MacBook 2GHz at macworld.com/4397.

 MONITORS Widescreen				
PRODUCT	RATING	PRICE	TYPE	FIND CODE
324 LCD (pictured) www.lacie.com	★★★★	\$899	24-inch display	3896
LP3065 www.hp.com	★★★★	\$1,077	30-inch display	2509
MultiSync 3090WQXI www.necdisplay.com	★★★★	\$2,173	30-inch display	3770



 DIGITAL CAMERAS SLR				
PRODUCT	RATING	PRICE	TYPE	FIND CODE
EOS Rebel XSi (pictured) www.canon.com	★★★★	\$570	12-megapixel	3898
D40 DSLR www.nikonusa.com	★★★★	\$710	6.1-megapixel	2498
D300 DSLR www.nikonusa.com	★★★★	\$1,725	12.3-megapixel	3434

 PRINTERS Laser				
PRODUCT	RATING	PRICE	TYPE	FIND CODE
C6150dn (pictured) www.okidata.com	★★★★	\$752	LED; color	3899
HL-4070CDW www.brother-usa.com	★★★★	\$349	PostScript compatible	3385
C544dn www.lexmark.com	★★★★	\$321	LED; color	4356

 PRINTERS Ink-Jet				
PRODUCT	RATING	PRICE	TYPE	FIND CODE
PictureMate Zoom PM 290 (pictured) www.epson.com	★★★★	\$161	compact; photo	3102
Deskjet D2545 www.hp.com	★★★★	\$59	inexpensive; general purpose	4067
Stylus Photo R1900 www.epson.com	★★★★	\$410	professional photo quality	3649

APPLE Macs						
PRODUCT	SPECS	RATING	PRICE	DISPLAY	SPEED-MARK 5*	FIND CODE
DESKTOP						
	iMac Intel Core 2 Duo/2.66GHz	★★★★	\$1,076	20 inches	256	4482
	Intel Core 2 Duo/2.66GHz	★★★★	\$1,400	24 inches	270	4483
	Intel Core 2 Duo/2.93GHz	★★★★	\$1,700	24 inches	297	4484
	Intel Core 2 Duo/3.06GHz	★★★★	\$2,119	24 inches	308	4485
	Mac mini Intel Core 2 Duo/2GHz (120GB hard drive)	★★★★	\$599	not included	189	4486
	Intel Core 2 Duo/2GHz (320GB hard drive)	★★★★	\$770	not included	202	4487
	Mac Pro Intel Xeon/quad-core 2.66GHz	★★★★	\$2,316	not included	348	4488
	Intel Xeon/two quad-core 2.26GHz	★★★★	\$3,299	not included	343	4503
PORTABLE						
	MacBook Intel Core 2 Duo/2GHz (white)	★★★★	\$989	13 inches	186	4397
	Intel Core 2 Duo/2GHz	★★★★	\$1,099	13 inches	195	4186
	Intel Core 2 Duo/2.4GHz	★★★★	\$1,299	13 inches	212	4187
	MacBook Air Intel Core 2 Duo/1.6GHz	★★★★	\$1,549	13 inches	153	4191
	Intel Core 2 Duo/1.86GHz	★★★★	\$2,149	13 inches	174	4192
	MacBook Pro Intel Core 2 Duo/2.4GHz	★★★★	\$1,699	15 inches	215	4188
	Intel Core 2 Duo/2.66GHz	★★★★	\$2,375	15 inches	235	4489
	Intel Core 2 Duo/2.66GHz	★★★★	\$2,670	17 inches	224	4490

* Speedmark 5 is Macworld Lab's standard test tool for benchmarking systems running Mac OS X 10.5 (Leopard). For information on Speedmark testing, go to www.macworld.com/speedmark.

APPLE iPods						
PRODUCT	SPECS	RATING	PRICE	DISPLAY	PERFORMANCE	FIND CODE
iPODS						
	iPod classic 120GB	★★★★	\$209	2.5-inch color	36 hours of music playback; 6 hours of video playback	3863
	8GB	★★★★	\$214	3.5-inch color	36 hours of music playback; 6 hours of video playback	3864
	iPod touch 16GB	★★★★	\$274	3.5-inch color	36 hours of music playback; 6 hours of video playback	3865
	32GB	★★★★	\$369	3.5-inch color	36 hours of music playback; 6 hours of video playback	3866
	8GB	★★★★	\$160	2-inch color	24 hours of music playback; 4 hours of video playback	3867
	iPod nano 16GB	★★★★	\$199	2-inch color	24 hours of music playback; 4 hours of video playback	3868
	4GB	★★★★	\$79	none	10 hours of music playback	4491
iPHONE						
	iPhone 3G 8GB	★★★★	\$199	3.5-inch color	5 hours of 3G Internet; 5 hours of 3G talk time	4184
	16GB	★★★★	\$299	3.5-inch color	5 hours of 3G Internet; 5 hours of 3G talk time	4185

Mac Gems

Discover great, low-cost Mac products **BY DAN FRAKES**



Better PDF Browsing PDF Browser Plugin gives you more options for navigating and viewing online PDFs.

WEB

PDF Browser Plugin 2.3

RATING: **PRICE:** free for noncommercial use
COMPANY: SchubertIt **URL:** www.schubert-it.com

Most modern Web browsers offer basic PDF-reading capabilities, and if you've installed Adobe software, you've likely got additional functionality thanks to Adobe's browser plug-in. But my favorite alternative is PDF Browser Plugin. Once you've installed it, clicking on a PDF link on a Web page loads the document in your browser window. But instead of just the basic commands—in the case of Safari, zoom, save, or open in Preview—you get a slew of additional features.

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For example, your browser now displays the PDF document's table of contents (if one exists) and lets you navigate sections. A new PDF toolbar lets you open the PDF in Preview or any other program; save or print; display the PDF as individual pages; and more.

PDF Browser Plugin also works with protected PDFs, letting you provide a document's password to view or print it; it displays annotations if a document contains them; and it allows you to insert text into forms right in your browser. One of my favorite features is split view, which lets you view two different parts of the current document simultaneously.

One feature I couldn't get to work was PDF Browser Plugin's custom print options, but my biggest annoyance is that you can't scroll through a PDF using your mouse's scroll wheel or your trackpad's scrolling gesture. Still, it's a great Web browser add-on.

PUBLISHING

CUPS-PDF 2.4.6.1

RATING: **PRICE:** free **COMPANY:** Codepoetry
URL: www.codepoetry.net

One of my favorite Mac OS X features is the capability to “print” to a PDF file via OS X's Print dialog box, but I wish it were more efficient. Saving a document as a PDF requires that I press ⌘-P, mouse down to the PDF button and click on it, choose Save As PDF from the resulting menu, navigate to the desired folder, and then press Return.

Codepoetry's CUPS-PDF is a virtual printer driver that lets you create a “printer” that will save documents as PDF files. Once you've set up this printer, your new PDF printer appears in the Printer pop-up menu in every Print dialog box. Choose it and click on Print to create a PDF of your document in a new CUPS-PDF folder on your desktop. If, like me, you save to PDF more than you print to paper, you can set your virtual printer as the default through the Print & Fax preference pane; this makes saving documents as PDF files as easy as pressing ⌘-P and then Return.

CUPS-PDF is also useful for converting documents to PDF format. If you place your CUPS-PDF printer (located in *youruserfolder/Library/Printers*) in the Dock, or create an alias of it on the



PDF Creator CUPS-PDF lets you create a virtual printer that saves files directly to PDF, saving you the multiple steps usually required.



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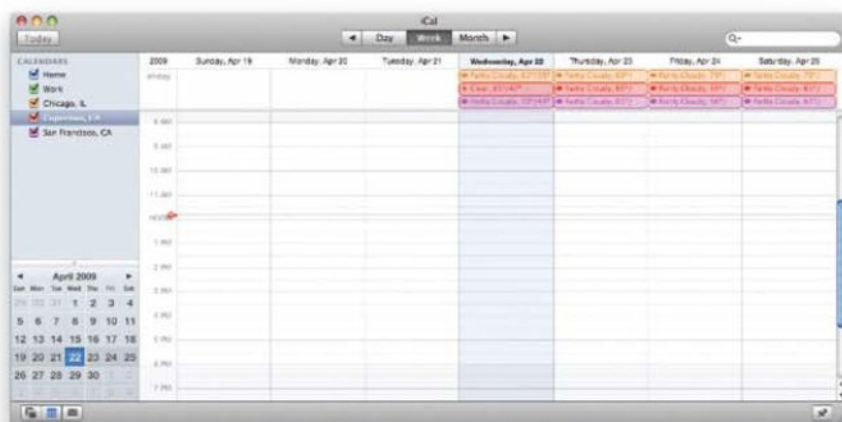
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Calendar Weather WeatherCal puts the weather on your calendar with ease.

desktop, you can drag most documents onto the printer icon to save a PDF version automatically in your CUPS-PDF folder.

The biggest drawback to CUPS-PDF is that the PDF files it creates are larger than those that OS X's built-in Save As PDF feature creates—sometimes twice as big. But for me, that difference is offset by the convenience of automatic PDF creation.

LIFESTYLE

WeatherCal 1.0

RATING:  **PRICE:** \$10 **COMPANY:** Bare Bones

Software **URL:** www.barebones.com

If you use OS X's iCal, or any calendar app that syncs with iCal, WeatherCal makes it a snap to add local weather to your calendar.

WeatherCal works as a System Preferences pane. It's easy to add or remove a city, and once you've added a city, WeatherCal creates a calendar in iCal for it. In that calendar, WeatherCal adds an "all-day" event for the current day and for each of the next five days; the name of each event is that day's forecast, taken from WeatherUnderground.com. An icon, such as a cloud, represents the day's conditions.

If you view the details for a weather event, you'll see a link that leads you to the city's full forecast and weather conditions on the Weather Underground site. WeatherCal checks for forecast information every hour, updating your calendar events with any changes; it deletes previous days' forecasts so that they don't clutter up your calendar. Because WeatherCal uses Leopard's CalendarStore database, you don't have to keep iCal running for such updates to occur, and you can immediately sync the changes WeatherCal makes to any devices or other Macs you've

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set up to sync with iCal. WeatherUnderground.com provides roughly similar functionality via iCal calendar subscriptions, but WeatherCal's approach offers better reliability and ease of use.

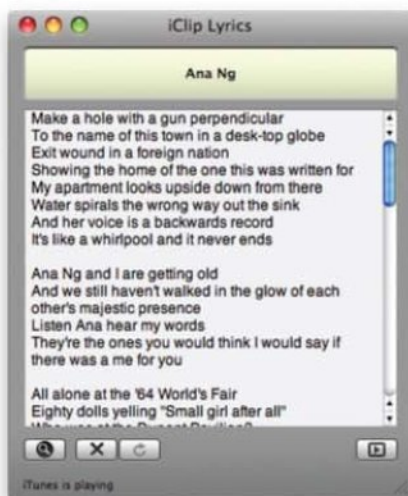
MUSIC

iClip Lyrics 1.3.3

RATING:  **PRICE:** free **COMPANY:** Luigi Cavalieri **URL:** www.1thdream.com/en

Adding lyrics to your iTunes music is a hassle: select the track, choose File ► Get Info, click on the Lyrics tab in the Info window, type or paste the lyrics into the large text field, and then click on OK. So instead, I turn to iClip Lyrics.

For each track that plays, iClip Lyrics shows the lyrics if they exist in iTunes; otherwise, it uses the track and artist names to search LyricWiki.org. If it finds lyrics, iClip Lyrics displays them and adds them to the current track's ID3 tags. If you leave iClip Lyrics running all



Lyrical Searches With iClip Lyrics, getting the lyrics to your favorite songs into iTunes is a breeze.

the time, you end up gradually adding lyrics for much of your music.

If LyricWiki doesn't have the lyrics, a click on the search button searches Google and opens a Clipboard drawer. If

you find your track's lyrics via the Google search, just select and copy the text; it's automatically pasted into the iClip Lyrics Clipboard drawer. Assuming the text is correct, a click on the Paste Lyrics button applies it to the current track.

For faster addition of lyrics, you can use the No Lyrics To Playlist 2.0 script from Doug's AppleScripts for iTunes (dougscripts.com/itunes/) to create a new iTunes playlist containing all tracks that don't have lyrics, and then use the Needle Drop script, from the same site, to play just a few seconds of each song in that playlist, letting iClip Lyrics do its thing all the while. Until Apple finally strikes a deal with the music industry to let iTunes grab lyrics for the tracks in your library, iClip Lyrics is a great tool to have in your music toolbox. ✕

Senior Editor **Dan Frakes** is always looking for great, low-cost products. Send him your comments and suggestions at macgems@macworld.com.



Apple Design Award
Best Mac OS X Leopard Application
2007 Runner-Up

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How to diagnose and fix common Mac problems without visiting an Apple Store

TROUBLE-SHOOT LIKE A GENIUS

You can count on it. Sometime, probably when you least expect it, something will go wrong with your Mac. If you can't figure out how to fix the problem yourself, you'll be forced to beg for help from a local computer genius—whether it's a friend or relative or, if you live near an Apple retail store, someone who dispenses advice from behind a counter.

But I'll let you in on a little secret: you, too, can be a Mac genius. Troubleshooting isn't magic. It's a skill that any experienced Mac user can cultivate. By arming yourself with the tools and tidbits that I've compiled in this article, you will in many cases be able to fix your computer by yourself rather than having to ask for help.

I'll show you how to diagnose and remedy common problems on your own, as well as figure out when matters have gotten beyond your capabilities. And in case you really do end up needing to take a trip to the Genius Bar, I'll also show you how to prepare so that you can maximize your results in a minimum of time.

By Ted Landau

ILLUSTRATIONS BY HUAN TRAN





QUICK FIXES

YOU SHOULD NEVER SKIP

One thing every good genius knows is that sometimes what looks like a complete computer meltdown actually has a simple fix. Here are a few tried-and-true remedies you shouldn't forget in the rush to try more-complicated and possibly unnecessary troubleshooting techniques.

Restart Yup, simply choose Restart from the Apple menu. It's amazing how often this can eradicate whatever was bothering your Mac. Always try it first.

You may be able to save time by instead quitting all the applications that you don't need to keep open. If the problem you're experiencing comes from your Mac's having too little free memory, this might be sufficient to get the gears turning again. Web browsers in particular can eat up a lot of memory.

Repair Your Disk If it doesn't appear that a single application is causing your troubles—for example, if all applications

crash on launch—try repairing the drive using Disk Utility (/Applications/Utilities). Open the utility, click on the First Aid tab, and then click on Repair Disk (see “First Aid for Failing Macs”).

Unfortunately, if the problem drive is your startup disk (which is almost always the case), you'll run into an immediate dilemma: the Repair Disk button will be dimmed and you won't be able to select it. To find out how to circumvent this obstacle, see “Repair Your Startup Disk.”

Make Sure Things Are Up-to-Date Does a particular program consistently crash whenever you try to perform a particular action, such as saving a file? If the symptom doesn't occur with any other applications, check to see whether there's a newer version of the problem software. Oftentimes, the new version fixes some bug (or some conflict with other software) that is causing the symptom.



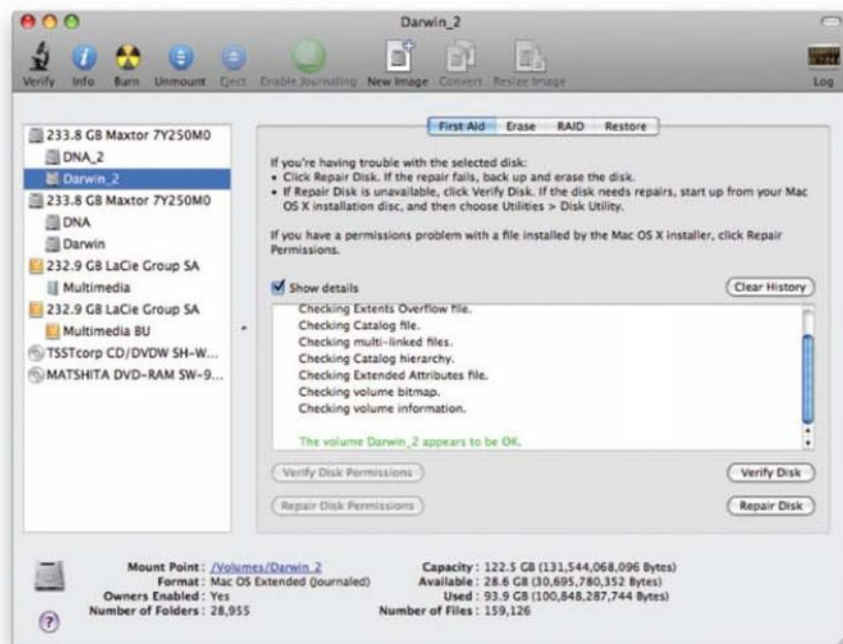
Many programs can now automatically check for updates upon launch. Take advantage of this option—if you see a dialog box asking whether you want to check for updates, accept the offer. Other software comes with a separate update utility that can launch on a schedule—say, once a week. For example, look for the Microsoft AutoUpdate program in your Applications folder if you want to check any of your Office programs right away or set up a schedule.

To check for updates from Apple, select Software Update from the Apple menu. You can set Software Update's preferences to alert you to new updates when they're available.

For a program that doesn't offer this sort of help, use your Web browser to check for an update, by going either to a site such as VersionTracker (www.versiontracker.com) or to the company's Web site.

Reinstall If the misbehaving software turns out to be the latest version, there's a chance your copy of it may be corrupted. In that case, it might help to reinstall the software, by either downloading it from the Web or pulling out your original CD.

Unfortunately, reinstalling won't fix problems involving a program's support files. For example, numerous programs place files in `youruserfolder/Library/Application Support`. Simply replacing



First Aid for Failing Macs Often you can solve seemingly complicated problems with simple techniques. For instance, use Disk Utility's First Aid feature to check whether a drive's directory is in working order.

the main program won't replace these support files. Sometimes even using an application's installer won't root out the problematic files.

If the program came with an uninstall utility, uninstall and then reinstall the app. Otherwise, you may need to search for support files (in Spotlight, search for items that contain the application's name) and remove them before you reinstall the software.

Do a Safe Boot If your Mac crashes when you turn it on, hold down the Shift key at startup until you see the words *Safe Boot* appear on screen. In Safe Boot mode, the Mac performs checks and

makes repairs, much as it does when you run Disk Utility's Repair Disk feature. It also deletes the dynamic loader shared cache, a known cause of some "blue screen" startup crashes.

Safe Boot may restore your Mac to its old self with the next normal restart—even if you do nothing else. It's at least worth a try. Even if your problem remains, a successful Safe Boot enables you to temporarily bypass the startup crash so that you can now do further troubleshooting—modifying or moving files as described in the remaining sections of this article. After you're done troubleshooting, restart your Mac normally.



THE BIGGEST TROUBLESHOOTING SHORTCUT

You've tried all the quick fixes, with no luck. How can you sidestep the complicated parts of the troubleshooting process and zero in on an easy solution? Search the Web. With a bit of luck and a dash of persistence, you will succeed most of the time.

Start with Google If you can type in the exact text of your error message or otherwise summarize your problem using a few keywords, you're especially likely to get helpful results using Google. Use quotes to enclose exact phrases; this reduces the number of unwanted results. For example, if you type in the error message "**the Preferences File Could not be opened. The end of file was reached. -39**", you'll get the useful Microsoft Entourage Help Page (macworld.com/4600), which tells you what to do if you have a damaged Identity database file. If you instead just type **Entourage -39**, you'll have to wade through a lot of information about HBO's *Entourage* series.

Try Support Sites If Google comes up empty, search the support sites for the products that are giving you trouble. For OS X in general, or for any Apple



products, there's no substitute for searching Apple Support (www.apple.com/support). The Discussions threads, for instance, often include reader tips for fixing problems that Apple may not yet have officially acknowledged.

The Apple Support site gives you a number of ways to home in on the

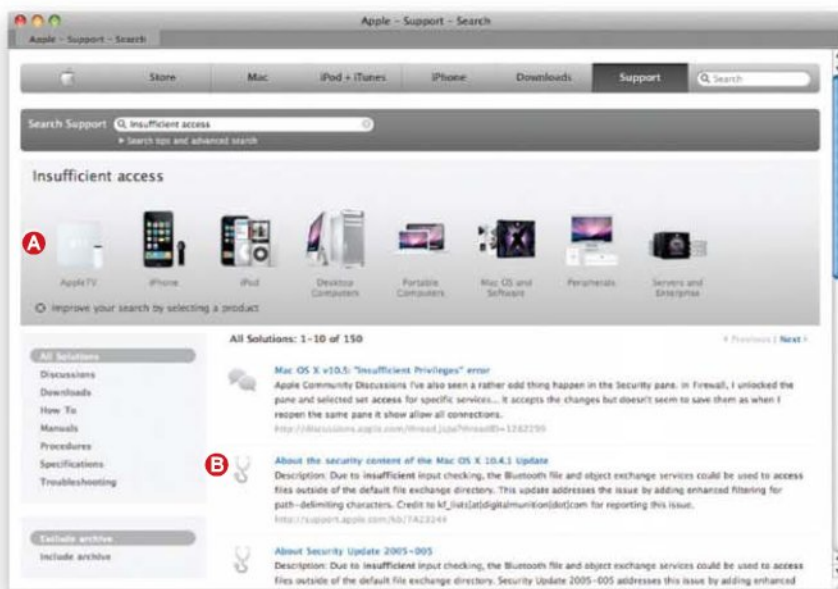
TED'S TOP TIPS

Here are the two things I'd recommend if you want to become your own Genius:

1 Expand Your Knowledge Sometimes your Mac's hardware or software isn't the problem. Rather, you just don't know enough about how the program or device works. As one example, here's a Finder "problem" that often perplexes users: when you insert a CD, the disc's icon does not appear on the desktop. What's going on? Often the solution is simple—as in this case. Navigate to Finder ► Preferences, click on General, and enable the option to show CDs, DVDs, and iPods. Try searching your Mac's or the program's help files to find these sorts of answers.

2 Restart, Unplug, Replug Restarting your Mac can be a cure for a wide range of symptoms. The same principle applies to any other Mac hardware: a good first troubleshooting step is to unplug the component and then plug it back in. This is typically the equivalent of a restart for that device. For example, for any USB or FireWire device (such as a Web cam or an EyeTV), disconnect it from its USB or FireWire port, and then reconnect it. If that doesn't fix things, and the device is connected to AC power, disconnect and reconnect its power source. As you are doing this, you can check in with System Profiler (/Applications/Utilities). If you don't see the device listed, it means the Mac is currently unaware that the device is connected. After each unplug and replug, select Refresh (⌘-R) from System Profiler's View menu to see whether the device appears. It usually will. If not, you may have a dead port, a bad cable, or a defective peripheral device.





Find Answers with Apple Support Looking for help? The Web might hold the answer. The Apple Support site lets you search using Boolean search operators such as AND, NOT, and OR. To drill down further, you can limit your search to a certain product family **A**. The site also gives you visual clues about what sorts of information you've uncovered. For instance, speech bubbles indicate information from the user forums, while a stethoscope icon indicates troubleshooting documents **B**.

answers you seek. For example, like most search engines, it allows you to use Boolean operators. Include the word **AND** when you want to search for documents that include both of your search terms—**macbook AND battery**. Likewise, use **OR** to find either of two terms and **NOT** to exclude a certain term. Enclose specific terms with quotation marks. Also take advantage of the site's

ability to limit your search to certain products. After you type in your search string, you may see a blue circle with a plus sign (+) in it next to the words "Improve your search by selecting a product." Click on this to reveal images of Apple's product line. Choose one to limit your search to just that product.

You may also find it useful to familiarize yourself with the icons

Apple employs to show what sorts of articles you've uncovered with your search (macworld.com/4601). For instance, if one of your results has a stethoscope icon next to it, it's a troubleshooting document (see "Find Answers with Apple Support").

Be Prepared for Some Frustration Not every fix you find online will actually work, at least not for your particular variation of the problem. And don't assume that just because a user posting says you must do something extreme, such as erase your hard drive, it's absolutely necessary. Less radical solutions may exist. Read through several postings on a subject before deciding on a course of action. Start with the simplest, least time-consuming solution, especially if there appears to be a consensus that it works.

Using the Web, you'll find solutions that you would never discover on your own, no matter how many hours you spend on do-it-yourself troubleshooting. For example, an Apple support article (macworld.com/4602) describes what to do if the Finder refuses to let you rename a file, claiming that you don't have "sufficient access." Part of Apple's solution requires that you enter the following command in Terminal (/Applications/Utilities) and press Return: **sudo chmod -RN ~**. Unless you're experienced with Unix (and perhaps not even then), this isn't something you'd think to do on your own.

REPAIR YOUR STARTUP DISK

Disk Utility's First Aid feature represents one of the oldest and most helpful repair utilities available for your Mac. But before you launch the application, a word of advice: First Aid cannot repair an active startup drive. That's why you won't be able to click on the Repair Disk button when you select your startup drive for repair. There are several ways to deal with this issue.

Click on Verify Disk The Verify Disk button usually works even if Repair Disk doesn't. Click on it if the option's available. If

the results say that everything is OK, you can bypass Repair Disk. Unfortunately, using Verify Disk for the startup drive is a bit buggy; you may find that the program stalls and never gives you any results.

Start Up from Another Drive Start up from the install DVD that came with your Mac (or a more recent version, if you've purchased one). Select Utilities ▶ Disk Utility. From here, you can choose Repair Disk for your normal startup drive. Alternatively, you can start up from a secondary bootable drive if you have one with Disk Utility installed.



If First Aid found problems and successfully repaired them, it should automatically run a second time. Afterward it should report that all is OK. Keep running Disk Utility until the results state that no repairs

are needed or until it claims to be unable to fix the problem.

Use Single-User Mode If you can't locate an install DVD and you don't have a second bootable drive, you can attempt to start up from your default drive in single-user mode.

To do so, hold down **⌘-S** at startup. If all goes as expected, the Mac enters a command-line mode that



TRACKING DOWN THE SOURCE OF TROUBLE

If the Web fails you and you're still not ready to quit, it's time to focus on finding the cause of the problem instead of just getting rid of the symptoms. With any luck, what you find may eventually point the way to a solution. At the very least, you'll gather diagnostic information that may prove valuable if and when you wind up at the Genius Bar.

Use a Troubleshooting Account When your computer is running smoothly, it's a very good idea to set up a separate troubleshooting account using the Accounts preference pane. Leave this account untouched and unused until things start to go awry (see "Try a Different Account").

Suppose an application keeps crashing on launch. Log in to your troubleshooting account by selecting Log Out *username* from the Apple menu and then selecting the account from your login screen. Launch the troublesome application. Does it launch successfully now? If so, you've discovered a critical piece of information. The cause of the crash is almost certainly some file within your Home

directory—the folder that holds all the files for your usual user account. (Your Home directory is labeled with a house icon and your user name.) You can move on to the next troubleshooting step.

Know When to Quit On the other hand, if you use a different account and the crash still occurs, you've learned that the source of the problem is probably outside your Home directory. As you've

presumably already tried reinstalling the application to no avail, the problem is most likely in either the /System/Library or the /Library folder—or perhaps one of the invisible Unix folders. Fixing these types of problems can be tricky. If you're feeling intrepid, one of OS X's troubleshooting utilities may help (see "Apple's Advanced Troubleshooting Utilities"). For many people, though, a problem of this type merits a visit to the Genius Bar.



Try a Different Account To see if the source of a problem extends beyond your Home directory, log in to a troubleshooting account (such as the Test Case one shown here).

looks as if you're running an odd version of Terminal. Happily, you don't need to know any Unix to get the job done. All you have to do is type `/sbin/fsck -fy`. The resulting output will be similar to what you see when running Repair Disk from Disk Utility. If the utility reports that your drive is OK, or that it successfully made repairs, type `reboot` and you're back in business.

Kristofer Widholm's free AppleJack (🔧🔧🔧; macworld.com/4249) makes single-user mode a bit more user-friendly. If you had the foresight to install it, type `applejack` at the prompt. From the menu of options that appears, select **repair disks**. Its other menu choices offer additional repair options.

Try Safe Boot When you hold down the Shift key at startup, your Mac does a Safe Boot. The directory check this routine performs is essentially the same as running Repair Disk, except that you don't get any feedback as to the results. That means you can't confirm whether your Mac needed repairs or whether repairs were successfully made. Still, as long as performing a Safe Boot cures your Mac, that probably doesn't matter.

If Nothing Works If one of the utilities reports a problem but can't repair it, use a more robust repair program, such as Alsoft's \$100 DiskWarrior 4 (🔧🔧🔧🔧; macworld.com/2503) or Micromat's \$98 TechTool Pro 5 (🔧🔧🔧🔧; macworld.com/4606). If this fails, reformat your drive and

restore from backup. If you can't reformat the drive, you need to replace it.

Skip Repairing Permissions Disk First Aid includes an option to Repair Disk Permissions. This is a different and entirely separate procedure from Repair Disk. Essentially, Repair Disk Permissions returns to their default values the Unix permissions that Mac OS X installs for all files. This operation can remedy cases where you can't open, move, or delete files because of insufficient authorization. Otherwise, it will likely have no beneficial effect. I rarely bother with it. (To learn more about exactly what repairing permissions does, see "Repairing Permissions: What You Need to Know" at macworld.com/3563.)



PROBLEMS YOU CAN USUALLY SOLVE YOURSELF

If you've confirmed that the problem is within your Home directory, you may be able to fix things on your own. Here are several common sources of trouble and ways to deal with them.

Root Out Corrupted Preferences Files

To find the preferences file for an application, look in *youruserfolder/Library/Preferences*. Once you've opened this folder, press \mathbb{C} -F and then limit your search to this folder by clicking on Preferences in the Search bar. Type the name of your program in the Search field. Look for a file with a name in the format *com.vendorname.programname.plist*. For example, for iTunes you'll see one named *com.apple.iTunes.plist* (see "Search for Troubled Preferences").

Drag this file outside its folder and relaunch the application. If the crash disappears, congratulations—you've found the culprit. Delete the .plist file you just removed.

You may next need to redo any custom preferences you set up for the application. If the crash still occurs, return the apparently OK file to the Preferences folder. If additional preferences files include the name of the application (as is the case with iTunes), you can try removing them next, one by one, to see if that has any effect on the crash.



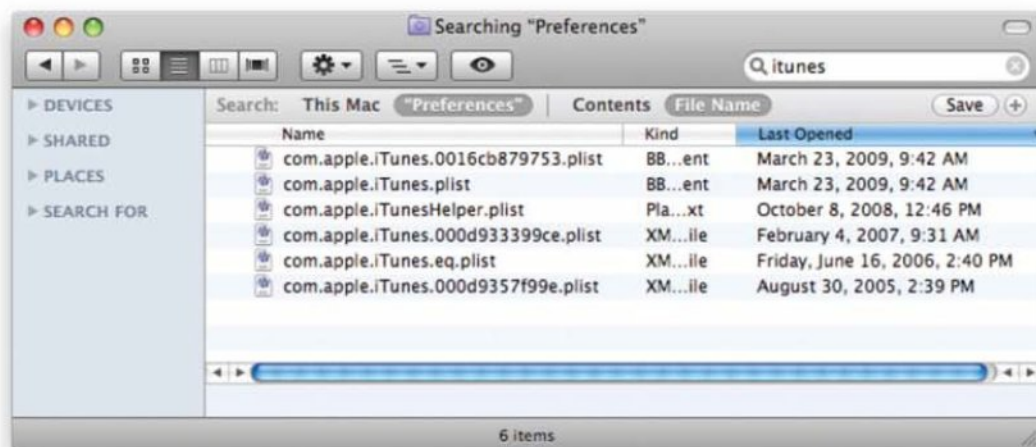
Dump Corrupted Cache Files Go to the Cache folder in your Library folder. Again, check for folders or files with the name of the crashing application. If you find them, delete them. If you can launch the application, a faster way to accomplish this task is to use the Empty Cache command that's built into some applications. For example, in Apple's Safari, select the Empty Cache command from the Safari menu.

Purge Problematic Plug-ins It's possible that there's a conflict between your crashing application and some third-party plug-in designed to work with it. For example, if you use Safari plug-ins, you'll find them inside *youruserfolder/Library/Internet Plug-ins*. For Mail plug-ins, check *youruserfolder/Library/Mail/Bundles*.

Remove plug-ins from their folder to see if this fixes the problem. If it does, check for updated versions of those plug-ins. Otherwise, determine which particular plug-in is the culprit and stop using it until there is an update.

Rebuild the Program's Database If your program uses a database or library, the problem may be a corrupted database. Many programs of this type offer a way to rebuild the database. For instance, with iPhoto, hold down the \mathbb{C} -Option keys when launching and select Rebuild The iPhoto Library Database From Automatic Backup in the dialog box that appears.

If any of the other rebuild options seem relevant to your symptoms, try them as well. Similarly, hold down the Option key when you launch Microsoft Entourage to access the Database Utility. For iTunes, it's a little bit more complicated; see this Apple support article for details (macworld.com/4603). For other programs, search the



Search for Troubled Preferences

If an application is behaving oddly, search for its preferences (.plist) file and remove it from the Preferences folder. This can provide an instant cure.

help info or read the documentation to find out whether a simple database-rebuilding procedure exists.

Check Your Login Items If your Mac is crashing at the end of the startup procedure while the desktop is loading, one of your login items may be to blame. Open System Preferences and choose the Accounts preference pane. From here, select an account, and click on Login Items to see the list.

The easiest way to deal with login-item problems is to install Marcel Bresink's free TinkerTool ([macworld.com/1214](http://www.macworld.com/1214)). Using this utility, you can easily deactivate and reactivate login items via the simple interface (see "Check Login Items"). If you log out and back in after each deactivation, you'll eventually determine which, if any, login item is the source of your trouble.



Check Login Items If your problems appear during or immediately after logging in, a login item may be the culprit. To find out, use TinkerTool to deactivate each item in turn and see whether any of them is the source of trouble.

Fix Your Keychain If programs inexplicably reject your passwords or you're having a problem that seems to be password related, launch the Keychain

Access utility (/Applications/Utilities). From the Keychain Access menu, select Keychain First Aid and try to repair the malfunctioning keychain.

APPLE'S ADVANCED TROUBLESHOOTING UTILITIES

If you're *determined* to find the cause of whatever ails your Mac before you throw in the towel and head over to the Genius Bar, Apple offers numerous diagnostic utilities. Most of them are located in the /Applications/Utilities folder. Here are the ones that I turn to the most:

Network Preference Pane and Network Utility If you're having trouble with an Internet connection, your first stop should be the Network preference pane. Click on the Assist Me button. From the dialog box that appears, select Diagnostics. If you still need more help and you have sufficient technical skills, try Network Utility. See "Inside Network Utility" ([macworld.com/4607](http://www.macworld.com/4607)) for a guide to its most useful features.

Activity Monitor When you're wrestling with systemwide problems, such as your Mac slowing down, Activity Monitor is the first place to turn. This program lists all your open processes, including applications as well as those behind-the-scenes activities that you don't see in the Finder.



Start by checking Activity Monitor's CPU column. If one application is consistently showing an especially high percentage (anything over 30 percent would certainly qualify), it may be the source of your problem. If it's an application you know you can safely quit, highlight it and click on Quit Process. Otherwise, if you don't want to chance quitting something that's unfamiliar to you, restart your Mac. For more information, see "Monitor Misbehaving Macs" ([macworld.com/3157](http://www.macworld.com/3157)).

Console You can't fix anything with Console, but with a little determination you can use it to learn what needs fixing. Check the (admittedly arcane) Console and System logs. Here you might see the name of an open application, together with some error message that sounds as though it could be related to your symptoms. Even if the mentioned application doesn't appear to be related, quit it (especially if the timing of the message concurred with the symptom's appearance). If the problem goes away, you now know where to focus

your energy as you do further troubleshooting. For more information, see "Tracking Down Trouble with the Console" ([macworld.com/3302](http://www.macworld.com/3302)).

System Profiler The simplest and most straightforward utility of the lot, System Profiler provides a wealth of detail about the status of your hardware and software. Want to do a quick check to see if your Mac's RAM is installed properly? Need to know whether you're running the latest version of your printer's driver? Want to find out who manufactured your DVD drive and whether it can read +R DL (double-layer) discs? System Profiler can answer all of this and more. This utility also lists the serial numbers and firmware numbers of your hardware components—from the Mac itself to USB and FireWire peripherals. These numbers can often assist a Genius in diagnosing your problem. If you're not bringing all your devices with you, jot down the serial numbers for hardware you suspect may be related to your problem.



HOW TO MAKE THE MOST OF THE GENIUS BAR

At some point, if you work your way through these suggested fixes without success, you'll exhaust your patience. The time has arrived for a trip to the Genius Bar. Here are a few suggestions for getting good results:

Bring Apple Problems to Apple Not surprisingly, the Genius Bar is best suited for problems with Apple products. Geniuses are less likely to help—and may even refuse to do so—with problems involving third-party hardware and software. If you know your problem is with Adobe Photoshop or a Canon printer, for example, you're usually better off contacting the makers of those products. If in doubt, you can always let the Genius sort out whom to ask for help.

Make an Appointment Don't drop in at an Apple Store unannounced unless you're prepared to wait several hours. You'll be much better off if you make an appointment via Apple's Web site (macworld.com/4604). Arrive a few minutes early and check in with the concierge. In most cases, they'll call you up within minutes of your appointment.

Check Your Warranty Apple products generally come with a one-year warranty. If you purchase AppleCare ([macworld](http://macworld.com/4605)



[.com/4605](http://macworld.com/4605)), that extends it for another two years. For a product that's still under warranty, there's a good chance that Apple won't charge you for repair or replacement. Occasionally, the company may offer a free repair or replacement even if the warranty has expired.

If you expect to be paying for any repairs, you may face some difficult decisions. Many repairs cost almost as much as a replacement. Would you

rather spend \$800 to fix your three-year-old MacBook or get a new one for \$1,000? Give this some thought before your visit.

Bring in the Hardware If possible, have on hand *all* the hardware required to demonstrate your problem. At the least, have the model names and serial numbers of the additional products.

Be Prepared to Leave Everything If it turns out that your Mac needs a repair, you'll probably have to leave it with Apple. Don't even make an appointment for the Genius Bar until you know you can do without your computer for a few days. And back up the drive *before* you take off for the store.

The Bottom Line

Make an effort to solve problems on your own, and you'll often save yourself the time and hassle of a visit to the Genius Bar. If a trip does become necessary, prepare in advance and you'll likely go home smiling—with a Mac that's working again. ✕

Senior Contributor **Ted Landau** is also the author of *Take Control of Your iPhone* (www.takecontrolbooks.com).

BEYOND THE GENIUS BAR

The Genius Bar isn't the only place you can turn for help. Whether you lack an Apple Store in your town or you're just not ready to jump in the car, you have options:

Try the Telephone You can still find old-fashioned telephone support at 800/275-2273. It's free for 90 days for most Apple products, and for two years if you purchased AppleCare. You can avoid waiting on hold by placing your phone request on the Apple Expert page (macworld.com/4608).

Choose Online Chat Apple offers online chat help for a few products, notably MobileMe (macworld.com/4609).

Check Repair Options To find out about your warranty status and what repair options are available for any Apple product, check out Apple's Online Service Assistant (macworld.com/4611).

Learn More about Your Mac If what you need is general tutorial help rather than a fix for a specific problem, the Apple Store can still be of value. Skip the Genius Bar and instead select one of the many free workshops, from an iLife '09 introduction to a session about using Final Cut Pro. Each store maintains its own schedule. Or, for

more personal help, spend \$99 and get a year's worth of training sessions via Apple's One-to-One program (macworld.com/4612). You'll find details about what's going on at the store nearest you by visiting its Web site (such as this page for the San Francisco store: macworld.com/4613).

Find an Apple Authorized Service Provider Lastly, you may want to consider bypassing Apple altogether and heading to an Apple Authorized Service Provider (macworld.com/4614). These providers may be more conveniently located than the nearest Apple Store. They are also typically less expensive and not as busy (so you are more likely to get help as a drop-in visitor).

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PCConnection

"The price tag on the new UPS is \$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.



Is your connection
stuck in the slow
lane? Here's how to
kick it into gear.

Speed Up the Internet

ILLUSTRATIONS BY HARRY CAMPBELL



Is your broadband Internet connection fast enough? Is it reliable? Is its price right? For many, at some point the answer to at least one of those questions is no.

When that's the case, you've got two choices: fix what's wrong with your current connection, or ditch it for a new one.

If you decide to ditch, there is good news: In the past year, consumer broadband plans with downstream data rates as high as 101 megabits per second (Mbps) have become common in populated areas of the United States (albeit at \$100 to \$165 per month). And services running at 6 to 15 Mbps have become both more affordable and more widely available in urban, suburban, and even some rural areas.

Whether you switch to a new Internet service provider (ISP) or stick with the service you've got, there are several things you can do to make the most of that connection. Specifically, you can make sure your local network, your router and modem, and the line between your home and your Internet provider are all running as fast as possible.

In the pages that follow, we'll tell you how to troubleshoot your Net connection and, if that doesn't help enough, how to find a new broadband service that's fast and reliable, without breaking your budget.

BY GLENN FLEISHMAN

Troubleshooting Your Broadband Connection



Your Internet service provider tells you that your service should provide “up to” 8 Mbps downstream. But an online speed test says you’re getting 1 Mbps. Who’s to blame here?

To figure that out, you have to look at four components of your Internet connection: your local area network (LAN), the gateway (typically a router)

that connects your LAN to your broadband modem, the modem itself, and the wide area network (WAN) that connects that modem to your ISP.

The Local Network

Because you control your own LAN, it’s a good place to start troubleshooting a problem with your broadband. (In addition to following this article’s

advice, you can consult some of our previous networking how-to coverage: “Troubleshooting AirPort Interference”

Speakeasy There are plenty of ways to test the speed of your Net connection; Speakeasy is one of the most popular testers. Most will test both the downstream and upstream speed.

Testing Internet Speed

» To test whether you’re getting the speed your ISP has promised, you can use one of many Web-based speed testers. Broadband DSLReports.com has a complete list (www.dslreports.com/speedtest). (If you create a free account at the site, you can store your test results there.)

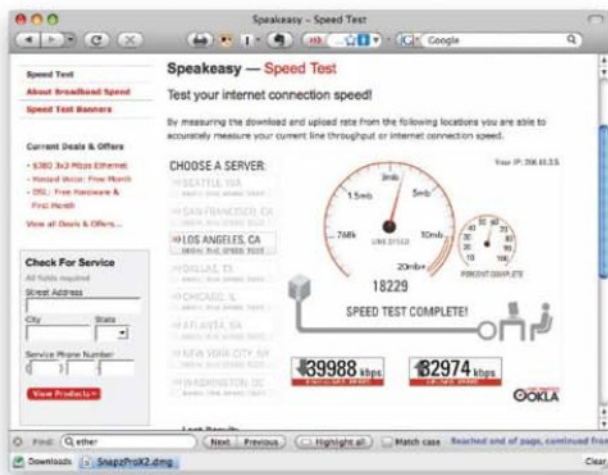
Speed testers download and upload one or more files—often a series of files that start small and increase in size—to test both throughput and latency. (Think of throughput as the amount of water a pipe can hold; latency is how long it takes for water to come out after you turn on the faucet.)

To use a speed tester correctly, make sure that nothing else is happening on your network—no automated backups over the LAN or Internet, no file downloads, no streaming video or even e-mail checking. If at all possible, plug the computer directly into your broadband modem.

Many ISPs offer their own speed testers. Even those that don’t should take the numbers you get from a good tester seriously. Some ISPs will even perform tests of their own by connecting to your modem remotely.

[macworld.com/4861] and “Improving AirPort’s Range” [macworld.com/3857].)

Upgrade Your Switches An Ethernet switch is like a phone exchange; data traffic from your computers and other devices is routed through the switch to its destination. If you’ve got a lot of local traffic or a fast broadband connection, an older switch can slow you down.



First, make sure all your switches support Gigabit Ethernet. If you have an AirPort Extreme base station, that means making sure it was released sometime after September 2007. All Time Capsules support Gigabit Ethernet. If your Ethernet switch doesn't, upgrading is relatively inexpensive: about \$40 to \$50 for a five-port switch.

Watch the switch to figure out whether your network is working at Gigabit Ethernet rates. Almost all switches have a color LED that indicates the Ethernet link speed: it'll show orange or yellow for 10 or 100 Mbps, and green for 1 Gbps. If you expect Gigabit speed but see orange or yellow, you need to check the cable (as described in the next section).

Some switches also have lights that indicate collisions on the network. Ethernet collisions occur when multiple devices start "talking" at the same time. When such a light flickers, that's also an indication of cabling problems.

Check Your Cables Ethernet cables are often the weakest link in the network chain.

To begin with, make sure you have the right cables. Gigabit Ethernet requires Category 5E cable (for short runs) or Category 6 (for long runs). Most cables have their type printed repeatedly in small letters along their length. Neither type of cable is expensive: a 14-foot Category 6 cable is \$2.69 at Cyberguys.com (www.cyberguys.com), for instance. If you have the wrong cable, replace it.

Ethernet cables can also be surprisingly fragile, especially after years of use. If you suspect a cable problem, inspect your cables for bends or kinks. An Ethernet line should never be folded over itself; if you coil it, make sure the loops are several inches in diameter. The insulation should be smooth and rounded, with no twist marks or stretching. If you

What Does 'Broadband' Really Mean?

Time to Download (hours:minutes:seconds)

CONNECTION SPEED (Mbps) *	CASINO ROYALE (SOUNDTRACK, 151MB)	CASINO ROYALE (SD MOVIE, 2.01GB)	CASINO ROYALE (HD MOVIE, 4.68GB)
100	0:00:12	0:02:41	0:06:14
50	0:00:24	0:05:22	0:12:29
20	0:01:00	0:13:24	0:31:12
10	0:02:01	0:26:48	1:02:24
3	0:06:43	1:29:20	3:28:00
1	0:20:08	4:28:00	10:24:00

* As with all networking specs, speeds are variable. Service that's supposed to be "up to" can deliver far less or, in some cases, more than that.

see these signs of wear, replace the cable. And if you're storing Ethernet cable, don't coil it tightly. You should especially avoid "ribbon wrapping" a cable—tightly wrapping a loose end of a coiled cable around the middle of the coil to keep it together. Rather, you should roll cable loosely, letting it fall into a loop.

You can use your Ethernet switch to test your wires: First check the switch's activity lights when a cable you know to be good is connecting the computer and the switch. Then connect the cable you want to test, and check the lights again. If the suspect cable causes the switch's status light to change color when data is flowing, ditch the cable.

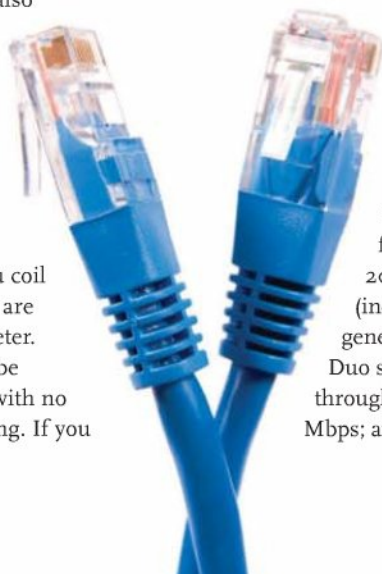
Make Sure You're Using 802.11n The most common cause of problems with wireless networks is mixing older Wi-Fi equipment with more-modern hardware.

course, even slower. (*Net throughput* is the amount of real data—such as the bytes in a digital image—that gets through, as opposed to *raw rate throughput*, which includes the bandwidth consumed by error correction, signaling data, and other network overhead.)

So even if you have a nice, new 802.11n gateway, any 802.11g or 802.11b equipment on your network can slow down your Net connection. If the connection isn't that fast to start with (say 10 Mbps or slower), this older equipment may not affect performance. But if your broadband connection is 10 Mbps or faster, you'll want to replace older Wi-Fi equipment.

Apple has made that easier by enabling its newest AirPort base stations to use two wireless bands (2.4GHz and 5GHz) at the same time. This allows you to segment your network into fast and

Ethernet cables can be surprisingly fragile. If you suspect a cable problem, inspect your cables for bends or kinks.



The latest 802.11n equipment has a net throughput of 30 to 150 Mbps; 802.11g (which was used in AirPort Extreme hardware from 2003 to mid-2006) and 802.11a (included in first-generation Intel Core Duo systems) have a net throughput of about 25 Mbps; and 802.11b is, of

slow sections: your 802.11g and 802.11b hardware can use the 2.4GHz band, while your faster equipment can communicate over the 5GHz channel. (See "New AirPort, Old Network" at macworld.com/4862 for details on setting this up with older gear and making sure adapters don't automatically switch between the two bands.)

You can upgrade older Macs with 802.11n adapters. These adapters work only in the 2.4GHz band, but you'll still boost your network speed. Newer Technology (www.newertech.com) has the least-expen-

sive 802.11n adapters, at \$50 each; these USB, PC Card, and PCI Card adapters work with OS X 10.3.9 and later.

Speed-Test Your Wireless Network

Interference can also slow down your wireless network. If a computer or another device is connected to a nearby base station but the data rate is less than the maximum (11 Mbps for 802.11b, 54 Mbps for 802.11g, 130 Mbps for 802.11n using the 2.4GHz band, and 270 Mbps for 802.11n using 5GHz with wide channels), interference may be the culprit.

To find out how quickly a Wi-Fi adapter is connecting to a base station, launch AirPort Utility, select your base station, and click on Manual Setup. Then select the Advanced tab, and click on the Logs & Statistics button. In the Wireless Clients tab, you should see the unique MAC (Media Access Control) address of each adapter and the speed and standard that it's using to connect.

To identify which client is which, click on the DHCP Clients tab, which shows the Bonjour name or the DHCP Client ID for each. Alternatively, you can open the adapter settings in the Network preference pane, click on the Advanced button, and then click on TCP/IP. The AirPort ID is the MAC address that you'll see in the list. (You can also use this method to test how fast your network works with a given laptop or mobile device at various places in a home or an office.)

If your gateway is handing out private addresses to your local network, that might be a bottleneck.



The Gateway

The second Internet-connection component that can slow down your Internet connection is the gateway. Typically, that's a router, such as an AirPort base station, connected to your broadband modem.

Double-Check Your NAT If your service is 30 Mbps or faster, and your gateway is configured to hand out private network addresses to your local network, that gateway might become a bottleneck for data.

The problem is that network address translation (NAT), which lets multiple devices on a local network share a single gateway IP address, requires constant computation. Every hunk of data passing in or out needs to have the addresses rewritten. If that data is coming in at high speeds, your gateway's NAT may not be able to keep up.

If you have a superfast Internet account, the workaround is to pay for static IP addresses from your ISP and manually assign one to each of your Macs. You can then turn off NAT in your gateway.

Disable WDS If you connect multiple base stations via Wi-Fi using the Wireless Distribution System (WDS)—in Apple base stations released starting in 2007, this functionality is called Extend A Wireless Network—you could be shortchanging your bandwidth. When WDS is turned on, each byte of data sent has to be retransmitted for each base station. So if you have two base stations, your network's bandwidth is cut in half; if you have three, it's cut in thirds; and

The Neighborhood Problem

Fully up-to-date cable operators can usually deliver consistent bandwidth. That's because the signal path goes straight from a fiber-backed node near your home to your cable modem. DSL providers aren't quite so lucky.

DSL providers pass the connection from your modem to their central office through a DSL access multiplexer (DSLAM). Typically, a DSLAM consolidates connections from dozens to hundreds of accounts, combines all that traffic, and passes it off to a higher-level network (almost always over fiber-optic links).

Older DSLAM hardware can become congested, so if there's a lot of traffic among customers connected to one DSLAM, everyone may experience a slowdown.

I experienced this several times in the years I had Qwest DSL service. My 3-Mbps service would often drop to 1 Mbps in the evening. I would call Qwest; then a customer rep would apologize, put me on hold for a bit, and return to say a technician had put me on a less congested leg of the network. Sure enough, I'd test my speed and find I was back at nearly 3 Mbps—for a few weeks, at least.

Eventually, I moved to cable.

so on. Disabling WDS and instead using Ethernet or powerline networking to connect your base stations should restore your full speed.

The Modem

The biggest problem with modems is that they get old.

Make Sure Your Modem Is Modern

If you haven't bought a broadband modem or received a new one from your ISP within the last three years, call your ISP to make sure the one you have is up-to-date enough to handle your connection.



If you haven't received a new modem from your ISP in 3 years, call to make sure the device can handle your connection.

Some early DSL modems still in use don't support the faster speeds of newer DSL lines—their slower CPUs can throttle downloads. Newer hardware can work faster.

Similarly, older cable modems that support the DOCSIS 1.0 standard won't be able to keep up with networks that encode data with DOCSIS 2.0 (or, as is increasingly the case, DOCSIS 3.0). Check your cable modem's manual to see which standard is in use.

Your ISP might swap your old modem for a new one at no cost. If you're renting the modem, you should (politely) demand that upgrade. If your initial contract term is up, you can often renew and get a new modem at no cost. If you're within a contract term, suggest that you're thinking of switching providers; you could very well get a new modem in response.

Check Your Connections Because a broadband modem has one input for a phone line or a coaxial cable, a bad hunk of cable or a wobbly plug can mean inconsistent service, with frequent drops or slowdowns.

Watch the Lights As with your gateway, keep an eye on your modem's status lights if the network slows down. One DSL modem I had crashed every time a Mac connected to its Web interface, but I'd never have known that if I hadn't been watching its status lights. If something like that happens, call your ISP to start troubleshooting. (Mine was unable to solve the problem; I ended up switching ISPs.)

The Wide Area Network

If you've checked your local network, gateway, and modem, and they all seem to be up to snuff, you should check one more potential source of Internet slowdowns: the wires between your modem and the Internet.

Again, Check Your Cable The cable from the back of your broadband modem to the nearest phone or cable wall jack can suffer from the same problems as any Ethernet cabling on your local network. Check it for bends and kinks, and make sure the insulation shows no signs of wear. If it does, replace it. With coaxial cable, make sure the hard-to-turn hexagonal nut around the connector is as tight as it can be. To be sure, lift the cable to release tension while turning the nut.

Call Your ISP If you suspect that the line outside your house is causing connection problems, call your ISP and ask for a line test. Such tests aren't as useful as they might be: they can detect only whether your modem is responding. (If you have DSL, your provider may also be able to check the impedance on the line and use that to figure out if it is achieving the proper signal-to-noise ratio for your line speed.)

Watch the Weather A *demarcation point* is where the wire from your house meets a connection from a utility pole or a buried line. That connection is typically exposed to the elements. If your bandwidth sags when the wind blows, call your ISP for a service call to check the wire. When service is erratic, calling your ISP is especially useful; a technician may be able to test the line and witness a problem. (Keep in mind that if the ISP doesn't find a problem, you may have to pay for a service call.)

Call an Electrician If you're certain that there's a problem between your modem and the Internet, but you're also certain that the problem doesn't lie between your modem and the wall jack or between your house and the ISP, you may have a problem inside your walls. (For example, I once had a wasps' nest in an exterior wall, and the insects ate the insulation on the cable coming into the house.) Indoor wiring is your

responsibility; if you're sure that's where the problem lies, you'll have to either hire a professional (in some states, that means an electrician) or pull some new wire yourself.

Broadband Glossary

3G Existing cellular data network.

4G Next-generation cellular data network: WiMax is already available in some U.S. cities and in parts of South Korea; LTE will begin to be rolled out in late 2009 or in 2010.

cable Using existing cable television wiring, runs broadband signals over unused local channels. Current DOCSIS 2.0 technology can theoretically deliver download speeds up to 40 Mbps; DOCSIS 3.0 ups that to 100–200 Mbps.

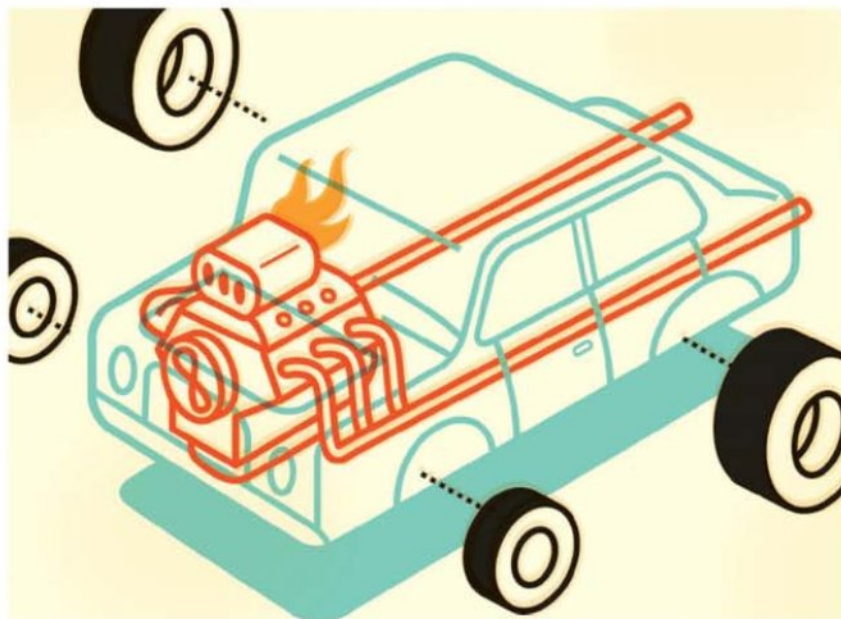
ADSL Uses existing telephone wiring to deliver Internet signals. Theoretically capable of download speeds up to 24 Mbps, maximum speeds in the 6 to 7 Mbps range are more common.

fiber Fiber-optic cable, which contains bundles of thin strands of glass that can stretch over hundreds or thousands of miles, carrying laser-driven optical signals at extremely high speeds.

fiber to the home (FTTH) Fiber lines running from a telephone company's network center to neighborhood nodes and then to boxes in people's homes.

fiber to the node (FTTN) Fiber lines running from a telephone company's network center to neighborhood nodes; from there, Internet signals travel over very high-data-rate DSL wiring to people's homes.

Upgrading Your Broadband



If you've done everything you can to improve your Internet connection, but it still isn't fast enough, perhaps it's time to get a new one.

The key to choosing a new broadband ISP is ignoring the come-ons and knowing what you'll have to live with after the honeymoon. That means research. And the best sources are other people: Which broadband provider do they use? Do they like the service?

Karl Bode, who runs Broadband DSLReports.com (www.dslreports.com), a site that provides user reviews of both cable and DSL providers, says, "I think other customers are the only truly honest source of information broadband customers have when shopping for a carrier."

User reviews are one of your best tools in picking a new broadband service. Another is a general knowledge of the advantages and disadvantages of the various types of broadband technology. Here's a short summary of the pros and cons of each broadband technology today.

DSL

DSL is generally slower than cable. And while DSL providers advertise speeds as high as 8 Mbps, the speed you actually get will depend on how far you are from the central office. DSL's one advantage is that its prices are generally lower than those of other options.

While many companies offer DSL, only local telephone companies own the wires that connect to people's homes. So DSL service from anyone else—Earth-Link, Speakeasy, or other resellers—will often cost much more than if you'd just signed up with your local telco. Resolving technical issues can also be more difficult with resellers, because they don't own the wires.

Cable

Cable has come a long way since its relatively rough start. Many cable operators now have fiber connections to neighborhood distribution points (with coaxial cables making the short run from there to people's homes); this allows for high

Switching ISPs

Whatever the reason you're switching ISPs, the actual switch can be tricky:

E-mail Address You can't take it with you. So if you're thinking of switching ISPs, it can help to move your e-mail to an ISP-independent service like Yahoo, Gmail, or Apple's MobileMe first. Or you could register your own domain name with a third party, and then use that address when you switch. In any case, it can help to send out a form message to friends, relatives, and colleagues well in advance, to let them know your new address and that communications could be disrupted for a bit.

Overlapping Service I recommend having the new service installed before the old is removed, at least for a few weeks. If that's not possible—such as when you're changing DSL providers—make sure you make the change when you have access to alternative sources of high-speed Internet, in case of problems.

Equipment Rental Confirm which broadband hardware you bought and which hardware you're renting from the provider. Some providers charge hefty fees—up to \$150—for ancient modems if you fail to return them, and they may not explicitly tell you to do so.

speeds. The latest cable data technology—DOCSIS 3.0—is rolling out now, boosting minimum speeds in many markets to 12 Mbps; top rates could pass 200 Mbps.

Cable is also widely available, and the price relative to throughput is low. Cable operators aren't legally required to resell access to their networks, so there are few third-party vendors; when you have a problem, you'll be dealing with the people who own the connection.

Fiber

Fiber offers the potential for superfast Internet connections. But it's not yet widely available.

Two fiber technologies are currently in use: *fiber to the node* (FTTN) means telephone companies run fiber to central neighborhood locations, and then run special DSL connections from there to homes; it's the technology AT&T and Qwest offer. *Fiber to the home* (FTTH) means the fiber goes directly into homes; Verizon is the only major vendor offering it.

Current FTTN speeds range from about 1.5 to 25 Mbps, with prices generally in the same range as cable. FTTH is faster—10 to 50 Mbps down-

stream, and 1-Gbps rates are on the way; FTTH is significantly faster upstream than FTTN. Again, prices tend to be similar to cable prices.

Wireless

Wireless is a catchall term for many kinds of services. The most popular is satellite Internet. Because its speeds are low and its prices comparatively high, I can't recommend it unless it's your only choice.

Sprint Nextel and Clearwire recently merged their separate efforts in fixed

wireless; the resulting service (also called Clearwire) has launched only in Baltimore and in Portland, Oregon, so far; it offers download speeds between 1 and 6 Mbps for home users. The company plans to expand to dozens of major cities in 2009 and 2010.

There are also many 3G data plans available from cellular carriers, which require that you install a dongle in your Mac. These, too, tend to be comparatively expensive for the speed they provide, but they do have the advantage of being entirely portable; they're worth considering if you're on the road much of the time. ❌

Glenn Fleishman is the author of several *Take Control* e-books on networking (takecontrolbooks.com) and is a frequent contributor to *Macworld*.

Broadband Compared

A sampling of who supplies what, and for how much

PROVIDER	TYPE	DOWNSTREAM (Mbps)	UPSTREAM (Mbps)	PRICE PER MONTH	FIND CODE *
Cablevision	cable	15.0	2.0	\$50	4863
		30.0	5.0	\$65	
Comcast	cable	15.0	3.0	\$43	4864
		20.0	4.0	\$53	
		30.0	5.0	\$63	
		50.0	10.0	\$140	
AT&T	DSL	0.8	0.4	\$20	4865
		1.5	0.4	\$25	
		3.0	0.5	\$30	
		6.0	0.8	\$35	
Qwest	DSL	1.5	0.9	\$53	4866
		7.0	0.9	\$63	
Verizon	DSL	1.0	0.4	\$20	4867
		3.0	0.8	\$30	
		7.0	0.8	\$43	
Verizon	FTTH	10.0	1.0	\$60	4867
		20.0	5.0	\$70	
		20.0	20.0	\$78	
		50.0	20.0	\$165	
AT&T	FTTN	1.5	1.0	\$25	4868
		3.0	1.0	\$30	
		6.0	1.0	\$35	
		10.0	1.5	\$55	
		18.0	1.5	\$65	
Qwest	FTTN	12.0	0.9	\$52	4869
		20.0	0.9	\$65	
Clearwire	fixed wireless	0.8	0.1	\$20	4870
		3.0	0.4	\$30	
		6.0	0.5	\$40	
Hughes	satellite	1.0	0.1	\$60	4871
		1.6	0.3	\$80	
		3.0	0.3	\$190	
Various	3G wireless	1.4–1.7	800 Kbps–1.2 Mbps	\$60	N/A

N/A = not applicable. * Typing a find code after macworld.com in your browser's address field will take you to more information about a listed service.

The Triple and Quadruple Play

Should you put all your phone, data, and TV dollars in one pot? Providers would love it if you would, by choosing one of their triple plays, which deliver all three services over one wire or cable, with one monthly bill. There are quadruple plays, too, which add wireless phone, mobile data, or mobile TV.

Are triple-play services a good deal? It depends on how much you're paying now. For example, my wife and I were paying \$64 per month for satellite TV service, \$50 for Qwest broadband, and \$40 for Qwest local calling. We paid an additional \$15 per month for long-distance calls. That's a total of roughly \$170 per month.

A similar package from Comcast—with four times the broadband speed, unlimited calling, and HD video—would have cost us \$130 per month. So we could have saved some money.

Ultimately, though, we chose to save even more: we dropped our TV entirely, kept a home phone line without voice mail, and switched to Comcast's cable broadband, for a new total of about \$90 per month.



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Mini Media HUB

Turn your Mac
mini into your
entertainment
headquarters

By Christopher Breen

Nearly three years ago, I got a bright idea: turn a spare 1.66GHz Intel Core Duo Mac mini into a media center, one that could play music, record and play TV programs, act as a radio, and play DVDs.

While I was ultimately successful in my quest (see “My Multimedia Mac Mini” [macworld.com/2284] for the gory details), it took some doing and the results weren’t terribly family-friendly. When I gave my wife a

tour of our new media center, she pointedly remarked, “Let me know when our old stuff is back,” and left the room.

And it wasn’t long before the old stuff was back. It was simply easier to use our satellite receiver, TiVo, AV receiver, and DVD player (and, later, an Apple TV) than to try to make the mini replicate them.

But things have changed in the past three years. For one thing, video-on-demand is much more common.

You can buy or rent movies and TV shows from the iTunes Store. NetFlix (www.netflix.com) lets you stream some TV shows and movies. Content from major television networks and terrestrial radio is streaming over the Internet. Free media-center software has appeared that makes it easier to watch that content. Apple's Front Row is more robust than it once was. And, with an iPhone or iPod touch in hand, you can easily control a Mac from the couch—no more Bluetooth keyboards and mice or limited Apple Remotes.

The Mac mini itself (www.apple.com/macmini; [macworld.com/4486](http://www.macworld.com/4486)) has also improved. With its faster CPU and graphics card, it's powerful enough to manage media. It also offers plenty of connectivity (five USB 2.0 ports, a single FireWire 800 port, a mini-DVI port, a Mini DisplayPort connector, 802.11n wireless networking, Bluetooth, and Gigabit Ethernet).

Given all these changes, I began to think: Would it be easier now to build and use a Mac mini-based media center? Was now the time to replace most of my AV components with a mini? I set to work to find out.



Upgrading the Hardware

I started with the mini's hardware. At \$599, the least-expensive Mac mini is a capable computer, but has two obvious weaknesses: its RAM is too meager and its hard drive is too small (120GB) and too slow (5,400 rpm). Those drawbacks would hamper the mini as a media server for a couple of reasons.

For one thing, the current mini's graphics card—while faster than its predecessor—still shares the on-board RAM. The \$599 mini comes with 1GB of RAM, and the GeForce 9400M gobbles up 128MB of that; put 2GB in the mini and 256MB will be used for video. Figuring that a media center would require that 256MB, and that RAM is inexpensive these days, I bought 4GB of RAM (the maximum the mini can hold) from Crucial for \$68 (www.crucial.com).

Then I addressed the hard-drive issue. In the course of his Mac mini review (www.macworld.com/4499), my colleague Dan Frakes observed that the mini runs faster when booted from an external FireWire drive. A trip to Fry's Electronics netted me a 1TB, 7,200-rpm Seagate FreeAgent hard drive ([freeagent.seagate.com/en-us](http://www.freeagent.seagate.com/en-us)), with a FireWire 800 interface, for \$135 (on sale).

My new hardware in hand, I grabbed a couple of putty knives and a Phillips #0 screwdriver and had the old RAM out and the new RAM in within half an hour. (For guidance, I watched Other World Computing's Mac mini RAM installation video [[macworld.com/4847](http://www.macworld.com/4847)]; if you prefer still pictures, iFixit.com offers a thorough upgrade guide [[macworld.com/4848](http://www.macworld.com/4848)].)

Once the mini was back in one piece, I connected the Seagate hard drive to the computer, booted the mini from the internal drive, formatted it with Apple's Disk Utility, and cloned the internal drive to the Seagate drive with Mike Bombich's free Carbon Copy Cloner ([bombich.com](http://www.bombich.com); [macworld.com/3156](http://www.macworld.com/3156)). With that

done, I used the Startup Disk system preference to designate the fast Seagate drive as my startup disk.

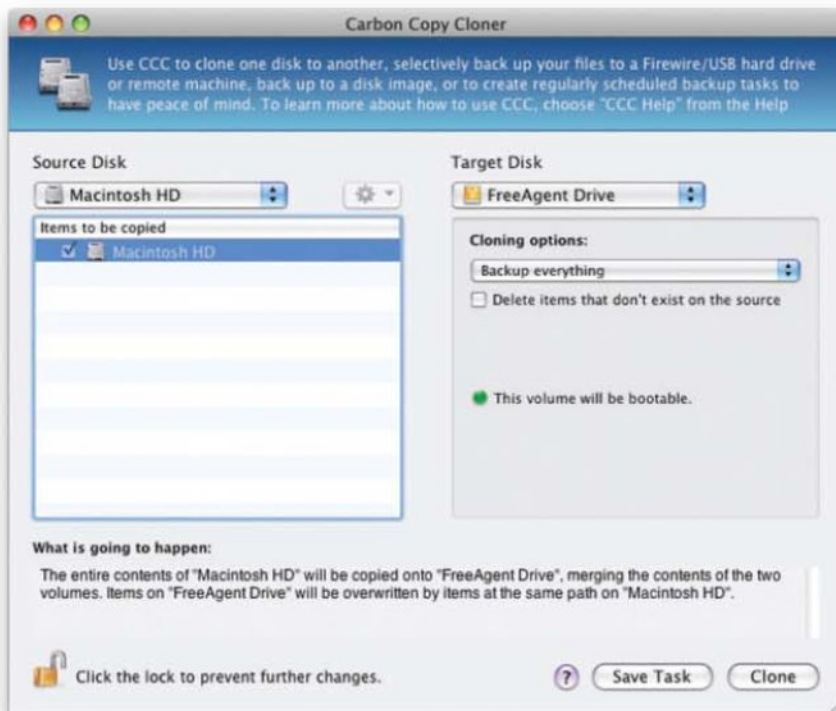


Making the Connections

My strategy when it came to connecting my Mac mini to my home entertainment hardware was to integrate my old equipment when it made sense, and replace that equipment when it didn't.

Audio The Mac mini supports 5.1 Dolby surround-sound audio via its sound output port (which can operate as both an analog and a digital audio output). To get digital audio out of the mini, you need a Toslink cable that includes a mini-jack adapter. Attach the adapter to one end of the cable, plug the adapter into the Mac, and plug the other end of the cable into an AV receiver's optical audio input.

I used XtremeMac's \$20 2-meter Toslink audio cable ([macworld.com/4849](http://www.macworld.com/4849)) for this purpose, plugging it into an optical input on my Onkyo TX-SR606 AV receiver ([macworld.com/4850](http://www.macworld.com/4850)).



Clone the Drive Using a utility like Mike Bombich's Carbon Copy Cloner, you can clone the Mac mini's relatively slow internal drive to a faster external one, thereby increasing the mini's overall speed.

Network Although the Mac mini houses an 802.11n AirPort card, I wanted the fastest network connection I could get for streaming content from the Mac Pro on which I store the bulk of my media files. I already have a Gigabit Ethernet switch for the Apple TV that sits next to my TV; I simply cabled the mini's Ethernet port to it.

Temporary Input I pulled an old Apple keyboard and Mighty Mouse from my collection of peripherals and plugged them into the mini. I didn't intend to leave them plugged in permanently, but rather to use them just while I configured the mini. Once that was done, I planned to switch to input tools I could use from the couch (see "Remote Controls").



Hiding the Computer

The downfall of my first media Mac mini experiment was that I operated it just as I would any other Mac: I'd mouse around, launch applications, and so on. That was fine for me, but my daughter and wife were less willing to manage multiple apps just to be entertained. This time, I swore to make my media server's software interface feel less like a computer.

Apple's Front Row seemed like a good way to do so. Its interface is simple, yet it provides access to the mini's entire iTunes library (including music, music videos, TV shows, movies, photos, and podcasts), media stored on other Macs attached to our home network (including iPhoto libraries), and DVDs in the mini's media drive.

The first step was to make Front Row the mini's default interface. I did so by opening the Accounts system preference, choosing the administrator account, opening the Login Items tab, clicking on the plus-sign (+) button, and selecting the Start Front Row application, which you'll find in the Applications folder.

Now when I log in to the mini, Front Row appears without any input from me.

Beyond Front Row

Front Row is fine for managing local and networked content, but it's not so good for video streamed across the Web. Thankfully, a handful of third-party media center applications—including XBMC (xbmc.org), Plex (macworld.com/4853), and Boxee (macworld.com/4854)—can present these streams in a unified and friendly interface.

Of the three, Boxee is the roughest looking but it's also the best implementation. That said, Plex and XBMC are quite good, and all of them are updated routinely. Boxee may get my approving nod today, but tomorrow it could be Plex or XBMC. It's worth your while to check out each one and compare them occasionally to see what new features their developers have added.

In addition to video, Boxee offers audio streams, including BBC, last.fm, NPR (podcasts), Pandora, RadioTime, and ShoutCast. With Boxee installed on my Mac mini, I had one of the most powerful and far-reaching radios on the planet.

In addition to playing Internet content, Boxee can play unprotected video, music, and slide shows on your Mac and any other Macs connected to your local network. (It can't play movies and TV shows or protected music you've obtained from the iTunes Store.) My one complaint: adding networked volumes to Boxee isn't nearly as easy as doing the same in Front Row.



Boxee With Boxee, you can stream video from all kinds of sources over the Internet—and, potentially, from there to your Mac mini media server.

If I need to get out of Front Row and into the regular Mac interface, I just use a remote control or press Escape on an attached keyboard.

Sharing iTunes

To access media on other Macs on my network, I had to make sure that iTunes sharing was turned on.

That meant going to each of my networked Macs and opening iTunes' preferences (iTunes ► Preferences). I then clicked on the Sharing tab and enabled the Share My Library On My Local Network option.

To play that shared iTunes media on the Mac mini, I'd launch Front Row, navigate to the Sources screen, and choose the networked Mac. iTunes must be kept

running on the networked Macs for their libraries to be visible to Front Row; file sharing (in the Sharing preference pane) doesn't have to be turned on.

One downside here: Front Row doesn't give you any easy way to search for content. Playlists can help.

One way I found to make my library more navigable from Front Row was to create some smart playlists that group all my artists alphabetically. I created one such playlist using the following criteria:

Match Any Of The Following Rules:

Artist Starts With A
Artist Starts With B
Artist Starts With C

I named this playlist "A – C." I then created more playlists to divide the rest of the alphabet into digestible chunks. Those playlists show up in Front Row and make it easy to find the artists I want.

Remote Controls

I was hoping to find one remote control to control everything—my Mac mini, my TV, and my AV equipment. Unfortunately, there is no such beast.

I could have used Apple's own remote control to control the Mac mini. But it can't supply the keyboard and mouse input that many media apps require. A Bluetooth keyboard and mouse would be too bulky. I found one potential solution: my iPhone plus a remote-control app.

Apple's free **Remote** app is one good alternative. Pair your iPhone (or iPod touch) with the mini's copy of iTunes, and you can control playback. To make the video experience more seamless, I could open iTunes ► Preferences on the mini, click on the Playback tab, and choose Full Screen from the Play Movies And TV Shows pop-up menu.

But Remote does nothing for the rest of the Mac. For general-purpose input and mousing, I tried RPA Technology's \$6 **Air Mouse Pro** (★★★★; macworld.com/4856). It can do all the mousing, typing, and scrolling most media apps require. Unfortunately, it doesn't work with Boxee, Front Row, or Plex.

For Boxee, I could have used the free **Boxee Remote** (macworld.com/4857) iPhone app. It offers two ways to control Boxee. The first is a four-way arrow pad with a central OK button and a Back button. The arrow pad corresponds to the Mac keyboard's four arrow keys, the OK button equals the Mac's Return key, and the Back button is the Mac's Escape key. You can also manage Boxee with a Gesture control—a large Boxee icon that you drag around the iPhone's screen to highlight and activate objects.

Evan Schoenberg's \$1 **Rowmote** (★★★★½; macworld.com/4873) can launch and control Boxee, as well as a host of other Mac applications, including Front Row, DVD Player, iTunes, iPhoto, Keynote, PowerPoint, Plex, and VLC. It mimics Apple's remote with its four directional buttons, as well as Play/Pause and Menu buttons. Unlike Apple's remote, it'll let you pick the applications you want to control.

You could also remotely control your Mac mini (from the couch, from another room in the house, or across the Internet) by implementing screen sharing, Back to My Mac, or a Virtual Network Computing (VNC) application such as Patrick Stein's free **JollysFastVNC** (macworld.com/3776). VNC apps allow you to see the mini's screen and control the mini's functions from any other Mac. There are plenty of VNC applications for the iPhone and iPod touch, including Jugaari's \$25 **Jaadu VNC** (macworld.com/4859), ReadPixel's \$7 **RemoteTap** (★★★★; macworld.com/4333), and Jan Frydendal's \$6 **Mocha VNC** (macworld.com/3829).

Still, while these apps might let me control the Mac mini from my couch, none would also control my TV or AV receiver. For that, I turned to Logitech's \$250 **Harmony 880 Advanced Universal Remote** (macworld.com/4860). It's relatively easy to program and update, it handles every bit of gear I own, it doesn't require batteries (it has a rechargeable battery and charging station), and it makes sense to my family. Best of all, it can mimic the Apple remote's functions, so it works for many—but not all—of my mini's media apps.



Rowmote With an interface like that of the Apple remote, Rowmote can launch and control a whole host of Mac applications.



Air Mouse The Air Mouse Pro iPhone app gives you a good general-purpose remote control that'll let you mouse, click, type, and scroll, as well as control Safari and iTunes.



Sharing iPhoto

Sharing photos from iPhoto is similar to sharing media from iTunes: you open iPhoto's preferences, click on the Sharing tab, and enable the Share My Photos option. Again, you can select your entire iPhoto library or just certain albums.

To view shared photo libraries on my Mac mini, however, I didn't use Front Row's Sources screen. Instead, with the mini as the source, I'd choose Photos ► Shared Photos. In the resulting Shared Photos screen, I'd see a list of all my networked Macs that had iPhoto open and sharing switched on.

On the same Shared Photos screen, there is a Slideshow Settings command. Choose it and press Return, and you see the options for displaying your pictures in Front Row: Time Per Slide, Music, Repeat, Shuffle Photos, Shuffle Music, Ken Burns Effect, and Transitions.

If you've configured the Sharing tab in the programs to require a password, Front Row will prompt you to enter it with the on-screen keyboard, which you navigate with a remote control or a keyboard's arrow and Return keys. You may need to restart iTunes or iPhoto before you're prompted for a password.



Ripping DVDs

I also needed access to other video sources, including DVDs I own, live television broadcasts, and content streamed across the Internet.

We've covered the processes of ripping DVDs (macworld.com/4852) and converting video for any device (macworld.com/4566) before, and those instructions apply to the Mac mini as well.

The mini is not a fast ripper. While I can rip the main feature of a commercial DVD with HandBrake (★★★★½; macworld.com/3651) in about an hour with my dual-core Mac Pro and its two 2.66GHz processors, the Mac mini takes three to four times as long to do the same.



TV-Friendly Playlists Create playlists that group the artists in your library into smaller, more manageable chunks (above); that'll make it easier to find them in Front Row (right).



Other tools might do the job more quickly, but HandBrake is simpler: insert the disc, choose the output format (I prefer the Apple TV format so that I can later access my movies from the set-top box in my office), select the main feature, click on Start, and go away for a few hours.



Playing the Radio

Terrestrial radio stations are increasingly streaming their content on the Web and Internet-only radio is thriving. I was able to find that content easily using iTunes itself: after selecting Radio from iTunes' Source list, I found 28 radio categories, including Alternative, Blues, Classic Rock, Jazz, Latino, Public, Sports Radio, and Talk/Spoken Word. Within those categories, I could choose from more than 3,800 streams.

But because I was trying to stay away from the OS X interface whenever possible, I wanted to play those streams without using iTunes. So I created a playlist called Radio and dragged the stations I like into it. That way, when I wanted to listen to one, I could invoke Front Row, choose Music, select Playlists, and choose my Radio playlist. I could then choose the stream I wanted, and it would play through Front Row.

I didn't find all the stations I wanted in iTunes, though. So using Google, I'd look up a missing station's Web site. Many stations stream their content;

there's a fair-to-middling chance that when you click on a station's Listen Live link, the station will appear in iTunes' main window as an MPEG audio stream. You can copy it to your Radio playlist.

In cases where that didn't work, I had to abandon Front Row and use a Web browser to go to RadioTime (radiotime.com), which streams more than 60,000 stations from around the globe. To enhance my RadioTime experience, I could use Rogue Amoeba's \$32 Radio-Shift (www.rogueamoeba.com) and not only tune in to live streams, but also schedule recordings. Those recordings are copied to an iTunes playlist, making them available in Front Row.



Over-the-Air TV

Given the wealth of online TV streaming (go to macworld.com/4851 for more on that), I was hoping that the Mac mini might also let me get rid of my satellite dish. The one thing I wasn't sure about was local over-the-air programming, which isn't always available online.

One solution to that problem is Elgato's \$150 EyeTV Hybrid television tuner (🔗🔗🔗; macworld.com/2312). With this USB dongle plugged into my mini, I was able to pick up over-the-air TV channels. Coupling the Hybrid with the EyeTV software, I could record programs. The latest EyeTV Hybrid also allows me to receive and record over-the-air FM radio broadcasts.

The Bottom Line

The total cost of the hardware and software for my Mac mini media server was about \$1,500. But I could have skipped some of the niceties—the universal remote, the EyeTV, and so on. You could build a perfectly fine media center for far less.

The upgrade took me about a day. That evening, my mini was doing most of what I wanted it to. With iPhone in hand, I could play music, videos, and podcasts; watch slide shows; access Hulu and Netflix; and purchase and rent iTunes content from the couch without much bother. I was confident I could do without my DVD player, my receiver's radio, and much of the content currently offered by my satellite TV provider.

My wife and daughter didn't share my confidence. While our Apple TV acts largely as an adjunct to iTunes—no Netflix, no Hulu, no Comedy Central, no PBS, no Pandora, and so on—it's a device they're comfortable with. For them the bottom line is, "Is this new thing as transparent and easy to use as our old thing?"

In this case, their answer is "No." As the family geek, however, my answer is "Gimme that remote. This thing rocks!" 🍷

Senior Editor **Christopher Breen** blogs regularly about the digital lifestyle at Macworld's Playlist blog (macworld.com/4872). Follow him on Twitter at @BodyofBreen.

Trouble-Free Mac Tech Support

Help your less-technical friends (without going crazy) **BY CHRISTOPHER BREEN**

Tired of being the person your friends, relatives, and coworkers run to when they're faced with a Mac problem? Providing help can be gratifying, but repeated requests can be frustrating: once you demonstrate your technical prowess, you quickly become the go-to person whenever someone's Mac hiccups or burps. You'll probably never be completely free of some tech-support duties, but with these setup and maintenance tips, you can cut down on the number of calls you receive.

Use Accounts to Minimize Hassle

If you think you're going to spend a lot of time maintaining someone else's Mac, create an administrator account for yourself. This gives you the power to put things right if necessary, and it lets you set up a limited account for the Mac's primary user, which can help prevent that person from messing up the computer. OS X 10.5 (Leopard) provides two options for limiting users—standard accounts and managed accounts.

Standard Accounts A standard account limits users to creating folders and saving files in certain areas of the Home folder (so they can save files to the Documents folder but not to, say, the root level of the hard drive or the Home folder's Library folder). Standard users can access programs, but they aren't allowed to install software or use potentially dangerous preference panes, such as Sharing and Network, both of which require an administrator's name and password for access. This type of account is particularly



good for Windows switchers, who are familiar with computers but may get lost in a new interface.

To set up a standard account in Leopard, go to the Accounts preference pane, click on the lock, enter your password, click on the plus-sign (+) button to add a user, and choose Standard from the New Account pop-up menu. Depending on the user's skill level, you may want to simplify the interface. One way to do that is to remove extraneous items from the Dock. For example, if that person is never going to rock out with Apple's GarageBand, drag the GarageBand icon out of the Dock to remove it. You can also drag

Dock items around to reorder them more logically. For instance, put frequently used applications on the left and other programs farther down the line. Or you can create aliases of the most-used applications (Control-click on a program icon and select Make Alias) and place them on the desktop.

If you fear that a user will accidentally venture into potentially dangerous areas of the startup volume, go to Finder ► Preferences, select the General tab, and disable the ability to view hard disks on the desktop. Likewise, click on the Sidebar tab and disable the Computer, Hard Disks, and External Disks options. Moving these items out of the way makes them harder to stumble upon.

Managed Accounts Though generally employed by parents to limit a kid's Mac usage, managed accounts (accounts that have OS X's parental controls applied to them) can also be helpful for inexperienced users.

To set up a managed account in Leopard, follow the preceding instructions for creating a new account, but this time choose Managed With Parental Controls from the New Account pop-up menu. Once you've created the account, click on the Open Parental Controls button (you can later access these options directly from the Parental Controls preference pane).

The Simple Finder feature is great for new users because it unclutters the interface and prevents users from touching things that might get them into trouble. For instance, it removes the hard-drive

icon from the desktop, simplifies menus, and provides a stripped-down Dock that contains only the Trash and three folders—My Applications, Documents, and Shared. To enable the Simple Finder in Leopard, go to the Parental Controls preference pane's System tab.

You can also choose which applications a person is allowed to use. Access these controls at the bottom of the System tab (see "Simplify the View"). If you're creating this account for an adult, you needn't worry about filtering content, mail, and chat identities or creating time limits.

Preempt Internet Issues

Many new Mac users buy computers primarily to surf the Web and check e-mail. This can lead to late-night calls that start with "I can't get onto the Internet!" or "My e-mail's not working!" Here how to keep these calls at bay.

Tweak Mail E-mail problems and questions are inevitable. But if you carefully configure Apple's Mail, you may save yourself some troubleshooting work down the line.

Start by signing users up for a free Gmail account (mail.google.com)—not so that Gmail will be their primary e-mail service, but to take advantage of Gmail's

outgoing mail (SMTP) server. This can be helpful if a user is on the road with a laptop. Some Wi-Fi services prevent the primary account's SMTP port from sending mail. However, Gmail's SMTP server supports multiple SMTP ports, including those that are supposed to work in this type of situation. By default, Leopard's Mail will attempt to send from the primary SMTP server first; if that fails, it tries other SMTP servers you've configured on the Mac.

It's easy to configure a Gmail account. Just choose File ► Add Account, and then enter the person's name, Gmail address, and password in the Add Account window. With the Automatically Set Up Account option enabled, Mail will fill in the POP and SMTP server settings.

To help prevent junk e-mail from overwhelming the user and to ensure that it's moved to its own Junk folder, open Mail ► Preferences, click on the Junk Mail tab, select the Enable Junk Mail Filtering option, and then select the Move It To The Junk Mailbox option. Make sure the Filter Junk Mail Before Applying My Rules option is selected.

Take Screenshots At some point you'll likely have to reconfigure your newbie friend's Internet and network connec-

tions. Recording the information you need to do that is vital, as inexperienced users interpret the question "What's your ISP's subnet mask address?" as "Hummmity, pim-pom, splatley foo?" (In other words, they have no idea.)

So take screenshots of important windows (⌘-Shift-3). I find it easiest to print out one copy for the person I'm helping and another for myself. (I stick mine on my bulletin board.) You might

Back Them Up

TIP As a seasoned Mac expert, you understand the value of a backup. When you set up someone's new Mac, be sure to add an external hard drive and then configure Leopard's Time Machine for that drive. When you first plug in the drive, the Mac will prompt you to use it for a Time Machine backup. Go to the Time Machine preference pane to configure that drive or to choose a different backup drive. If you need to remotely recover something from the drive, you can use iChat's screen-sharing feature to control Time Machine.

prefer to keep an electronic record for yourself. In Leopard, navigate to the Network preference pane, select the computer's connection type (Ethernet or AirPort, for example), and take a screenshot. Click on the Advanced button, go to the TCP/IP tab, and take another screenshot. You should also take screenshots of the user's e-mail settings, which you can find under the Accounts tab of Mail's Preferences.

Similarly, if the person you're helping has a wireless router such as an AirPort Extreme Base Station, save a configuration file that you can reload later if necessary. To do this, open AirPort Utility, double-click on the base station to bring up the settings, and then choose File ► Save A Copy As. You might also want to click on the Settings window's Internet tab and take some screenshots of the Internet Connection and DHCP tabs.

Deal with Passwords Between banking, bills, e-commerce, and social networking sites, Web users have to create and recall many passwords. Help them by devising a system for storing and retrieving passwords.

It's a good idea to write down e-mail, iTunes, and emergency administrator passwords and ask the user to tuck them away in a safe spot where you both can find them later. For Web passwords, Safari will save some login



Simplify the View You can use parental controls to simplify a Mac for any new user, not just a child.

names and passwords in a keychain if you tell it to, but it won't always prompt you to save them. Instead, consider Agile Web Solutions' \$40 1Password (1password.com; macworld.com/3801), an invaluable and easy-to-use tool that allows you to save and retrieve passwords. You can also use it to autofill credit card information.

Take Control from Afar

Regardless of how foolproof you believe you've made a Mac, you're going to get calls for help. And unless you have a real fondness for the scenery on the drive over to your cousin Norbert's house, it's a good idea to configure his Mac so that you can connect to it and control it remotely. Leopard makes this possible (and easy), thanks to Apple's instant-messaging client, iChat, which takes advantage of the OS's screen-sharing capabilities. Here are the steps:

Sign Up with AIM AIM is AOL's free iChat-compatible service. Go to the AIM Web site (macworld.com/4621) and register Norbert for an account.

Add AIM Account to iChat Launch iChat. In the Account Setup window, choose AIM Account from the Account Type pop-up menu, and then enter the screen name and password in the appropriate fields. Click on Done.

Add Yourself as a Buddy In iChat, choose Buddies ► Add Buddy; in the sheet that appears, enter your AIM or

MobileMe account name, as well as your first and last name.

Turn On Screen Sharing In iChat, choose Video ► Screen Sharing Enabled. It's not necessary to turn on screen

sharing in the Sharing preference pane if you're viewing this Mac's screen via iChat.

Add the Buddy to Your iChat On your Mac, add Norbert as a buddy.

Start Sharing The next time Norbert has a problem, ask him to launch iChat. Select his screen name in your Buddy list, click on the Start Screen Sharing button at the bottom of the window (the overlapping screen icon), and select Ask To Share *nameofuser's* Screen. When the request appears on Norbert's screen, tell him to click on the window and then on the Accept button. His screen should now show up on your computer; tell him to let go of the mouse so you can take control and try to resolve the problem (see "Troubleshoot Remotely"). It couldn't be easier than that. ☒

Senior Editor **Christopher Breen's** friends and relatives always thank him when he helps them with their computing problems.

Help Them Help Themselves

Configuring a new user's Mac to make it easy to troubleshoot is a good first step. But it's also important to offer newbies some instruction.

Give an Overview Start by going through the basics of using the Mac, such as how to open a window; what the red, yellow, and green window buttons do; how the user folder is organized; and how to access items in that folder (particularly the Downloads folder). You can then demonstrate other tasks, such as throwing away a file and emptying the Trash; inserting and ejecting a CD or DVD; cutting, copying, and pasting; launching an application; using the Dock; sending and receiving e-mail; surfing the Web; and syncing an iPod or iPhone.

Show Off Spotlight New Mac users need to know how to find files. Make it into a game by creating a file, tucking it away in a location that Spotlight can search (anywhere except the System folder or a Library folder), and asking the new user to find it with Spotlight (by clicking on the magnifying-glass icon in the menu bar). Point out how Spotlight shows the most-relevant files, whereas Search (⌘-F) displays all results. Show newbies around the Search interface, demonstrating how they can use the parameters at the top to select certain locations, as well as search by content or file name.

Introduce Help Open TextEdit, click on the Help menu, type **font**, and choose one of the font commands (such as Font ► Underline) to demonstrate how Leopard can point to any selected command; all you need to do is type the command into the Help field. To show off an actual help file, type **Color Text** into the Help field and choose Changing Font Type, Style, Color, And Size from the menu that appears.

Warn Them about the Internet New computer users need to be aware of online threats—particularly phishing e-mails. Instruct them never to provide bank account, social security, credit card, birth date, or driver's license information when it's requested online. Tell them they can verify a message's legitimacy by calling the institution at the number provided in the phone book or on the back of a credit card, rather than the contact information enclosed in the e-mail message.



Troubleshoot Remotely Here we see a remote user's Mac (with our Mac's screen in the bottom-left corner) through iChat's screen-sharing interface.

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Working with Places

Get the most out of the new mapping features in iPhoto '09 **BY DERRICK STORY**

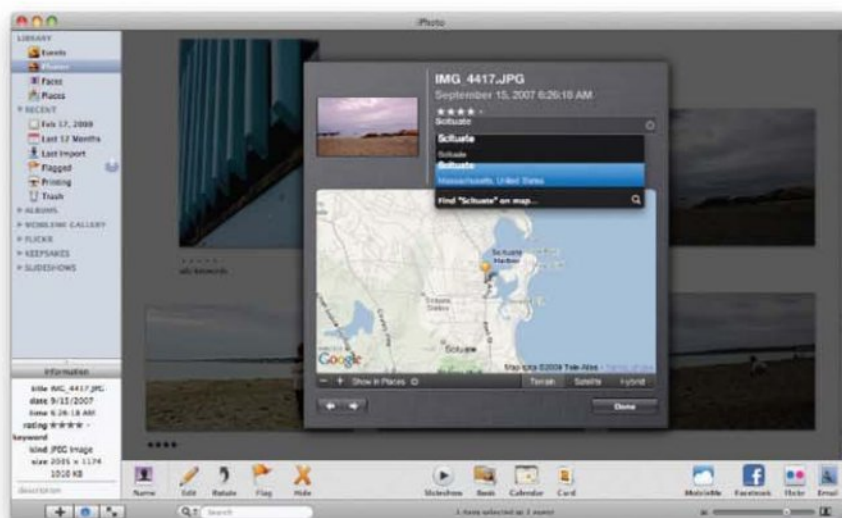
With the Places feature in iPhoto '09 ([macworld.com/4319](http://www.macworld.com/4319)), you can search your photos based on where you were when you snapped the shutter. Places takes advantage of geodata—longitude and latitude coordinates embedded in a photo's metadata. If you've been geotagging your images using GPS hardware or an iPhone, iPhoto reads that data automatically. But for the rest of us, the beauty of Places is that it lets us quickly add location data by hand.

Adding Location Data

To add geodata to a photo, position your mouse over the image's thumbnail and then click on the *i* icon that appears in the lower right corner. This opens the Photo Info pane. Click inside the Photo Place field and type the city or state where the image was captured. iPhoto should offer at least one location in the list below the search field, and display a Google map with a yellow pin for your location. If the pin is in the appropriate spot, click on the Done button.

If the pin isn't in the right place, you can refine its position. Return to the Photo Place field and choose Find On Map from the pop-up menu. This opens the Edit My Places window. From here you can enter a specific address or use additional search terms. Select a search result to see its location on the map. You can now drag the yellow pin to a more precise location—say, to mark exactly where you were sitting in the park.

Once you have the pin positioned, you might want to refine the name you use for the location in the list—for example, you could label your home address as



Mark Your Spot Start typing the name of a city in the Photo Info pane, and iPhoto will suggest potential matches and mark them on the map.

“Home.” Just click on its name, type your description, and then press return. Doing this for places you frequent will save you time later, as you'll be able to locate them by searching for your custom label rather than typing an address.

If you want your pin to encompass a larger area, such as an entire park, you can enlarge the shaded circle area around the pin by grabbing its handle and dragging outward. When you're done, click on the Assign To Photo button.

Speed Tagging

You'll get the most out of iPhoto's Places feature if you assign location data to your entire library. Here are some ways to make that process go faster.

Work in Batches To add a location to multiple images at once, shift- or ⌘-click on the photos you want before clicking on the *i* icon on any selected thumbnail. You can even tag an entire event in one

go. Simply click once on the Events icon under Library in the Source list and then mouse over an event's thumbnail to reveal the *i* icon. One warning: if you merge an event you've batch-tagged with another, your photos may lose all of their geotags. In that case, you're better off tagging the photos individually.

Copy and Paste Locations If you've tagged one photo, you can quickly apply its location to others. Press ⌘-C to copy the photo, and then control- or right-click on a photo you want to tag with the same location and choose Paste Location from the contextual menu.

Create Locations in Advance If you know ahead of time that you'll be tagging pictures at specific locations—at relatives' homes, for example—you can create geobooks for them in the Edit My Places dialog box. Go to Window ► Manage My Places, click on Google Search, and enter a location in the search

box. Select the result you want, and click on the plus sign in the location label to add it to the My Places list. Want to mark several places in the same area? Click on the Drop Pin button. This creates a new pin that you can position and then add to My Places.

Use the Arrows You don't have to leave the Photo Info box to tag the next image or event. Just use the left- and right-arrow keys to navigate through your photos. You can work on a series of pictures much more quickly this way.

Under the Hood

When you specify a location, iPhoto adds latitude and longitude coordinates, as well as descriptive location labels that include the country, state, and city, to the GPS section of the image's metadata. To see these coordinates, select a tagged picture in iPhoto and then press ⌘-Option-I.

Because this valuable information is now safely nestled in the GPS metadata, it can travel with the image. To keep the coordinates intact when you export images, be sure to check the Include Location Information box in the Export dialog box (File ► Export). You must also give approval for images that you publish to the Web; go to Preferences ► Web and turn on the Include Location Information For Published Photos option.

If you're uploading geotagged photos to Flickr, you'll also have to open your Flickr account's Privacy & Permissions section and set the Import EXIF Location Data option to Yes, and make sure you've updated to the latest version of iPhoto.

Of course, there may be times when you don't want this data to travel with your pictures. For example, you may not want the world to know where you live when you publish photos of your son's birthday party. To make sure you never accidentally publish geodata, consider leaving the options for including location data unchecked by default.

Putting the Data to Work

You can reap the benefits of your efforts in many ways. Start by clicking on Places in the Library pane, and then clicking on the globe icon. Mouse over a pin, and a label appears describing that area. To see pins for all the images you've tagged, select the Zoom All button.

To see the photos associated with a specific pin, select the pin and then click on the right arrow next to the pin's label. If you want to broaden your field, click on the Show Photos button instead. iPhoto will display thumbnails of all images taken within the area you have displayed on the map, even if they are associated with different pins.

Find Missing Locations

TIP Want to quickly find all of the photos not currently tagged with a location? Create a new Smart Album (File ► New Smart Album), name it something like "Needs a Place," and then set the conditions to read: **Photo Is Not Tagged With GPS**. The resulting Smart Album will contain every photo you've taken that doesn't have a location set—regardless of whether that location was set via a GPS chip in the camera, or by your manually setting its location in iPhoto '09.—ROB GRIFFITHS

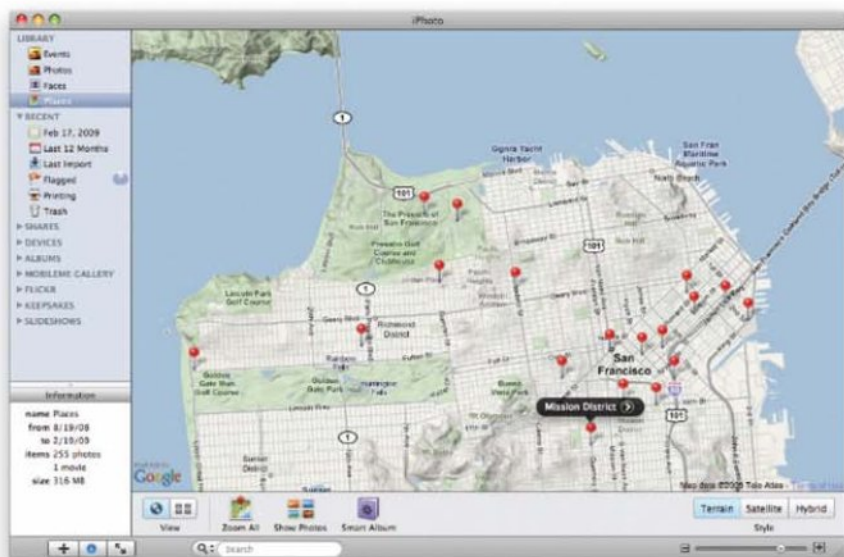
If you find the map difficult to work with, try switching to Places' list view (the grid icon). Four columns appear at the top of the browser: country, state, city, and specific location. Click on any of the labels in the list, and iPhoto displays the affiliated images. This is the fastest way to find images in a specific place.

Using Smart Albums

After you've added geodata to your images, you can use smart albums to pull photos together from this data.

Current View First, in any map view, you can click on Smart Album at the bottom of the interface. iPhoto will create a smart album with all of the photos from the visible locations. This is useful for gathering photos of your neighborhood, for example.

Custom Albums You can also create smart albums manually. Select File ► New Smart Album, choose Place from the far left pop-up menu, and then type a country, state, or city in the text field on the right. Click on OK, and iPhoto will round up the appropriate images. Better yet, the smart album will be automatically updated as you tag images in the future. Now that's a sweet place to be. ☑



Map It Select a single pin to see the photos tagged with that location. The Smart Album button will place the photos from all currently visible pins in a smart album.

Derrick Story publishes a photography podcast (www.thedigitalstory.com). Look for his iPhoto '09 training series on Lynda.com.

Securing the Home Network

Reader Q&A: How to keep a mixed-platform home network safe **BY GLENN FLEISHMAN**

Readers Steve Hawley, from Issaquah, Washington, has a home network with a mix of Macs and Windows PCs. He wrote to us for advice on how to configure his network so that all of those computers could securely share Internet access. He also wanted to keep random hackers out while maintaining secure remote access himself. His questions and concerns are common enough that we thought the answers could help a lot of other Mac users.

Cross-Platform Security

Because Steve's network has a mix of old 802.11b and newer 802.11g hardware, he should use WPA (Wi-Fi Protected Access) to protect it. An 802.11b device can be upgraded to work with WPA, but an older device will work much more slowly and could impair overall network performance.

WPA Personal is useful in a mixed-platform network, because Windows, OS X, and iPhones can all use the same passphrase.

WPA Personal is particularly useful in a mixed-platform network, because Windows (XP and Vista), Mac OS X 10.3.8 and later, iPhones, and other platforms can then all use the same passphrase to access the network. Nearly all Wi-Fi adapters made since 1999 have WPA Personal built in or can be upgraded to support it.

If Steve really wants to modernize his network's security, he could make sure that all his networked gear is compatible with the WPA2 Personal protocol (which, among other things, uses



Dropbox Menu The Dropbox drop-down menu shows you the status of your synchronized files.

stronger encryption than WPA Personal). AirPort Extreme hardware made since 2003 supports WPA2 Personal, as does much third-party gear made in the same time frame. But for most home networks, plain old WPA Personal will be fine.

To enable WPA or WPA2 Personal, Steve should open AirPort Utility, select the base station, go to the Wireless pane,

select WPA/WPA2 Personal from the Wireless Security drop-down menu, and then enter and verify the password.

Barring Outsiders

The best way for Steve to protect his network from outside intrusions is to implement Network Address Translation (NAT) on his router.

NAT assigns private IP (Internet Protocol) addresses to the computers and other devices on the network; those private addresses cannot be reached directly from outside the local network.

When devices inside his network tried to connect with the outside, NAT would open temporary connections to relay traffic to them.

NAT-PMP (an Apple-designed protocol built into all of the company's Wi-Fi gear since 2003) enhances NAT. If Steve had an Apple gateway, he could turn on NAT-PMP by launching AirPort Utility, selecting his base station, and clicking on Manual Setup. In the Internet pane's NAT tab, he should be sure that Enable NAT-PMP is checked. If not, he could select the box and then click on Update. If he was using a non-Apple gateway, he could implement Universal Plug and Play (UPnP) instead of NAT-PMP; typically, he'd use his Web browser to change the configuration.

If Steve wanted more protection than NAT alone can provide, he could install firewall and network-monitoring software on each computer that's connected to the network. For Windows, that might be something such as McAfee Security Center (which offers antivirus protection as well; macworld.com/4739) or ZoneAlarm Pro (macworld.com/4740). For Mac OS X, there are any number of options (macworld.com/4741).

Remote Access

Steve's final query had to do with securely accessing his files from outside his network, using either a Mac or a Windows PC. Fortunately, there are several ways to do this.

The first option is to host the files on a computer on his network and then turn on file sharing. To do so, he'd open System Preferences and select the Sharing pane. Then he'd select the File Sharing box and, in the Shared Folders and Users lists, choose the volumes and folders he wanted to make accessible and the users who would have access privileges.

His second alternative would be to host the files on an NAS (network-attached storage) device—essentially, a hard drive with an IP address. Depending on the model, NAS devices provide file sharing via AFP, FTP, Samba, or some combination thereof.

Whether he stores the files he wants on a single computer or on an NAS device, he would also need to configure his router's port mapping to give him remote access to the device. This would require giving that hardware a fixed IP address, from the range of private addresses his router sets for the local network (typically something like 192.168.1.XXX), and then mapping the AFP port on the device to the router's public port. The steps for doing this vary according to the router, so he would have to check his documentation.

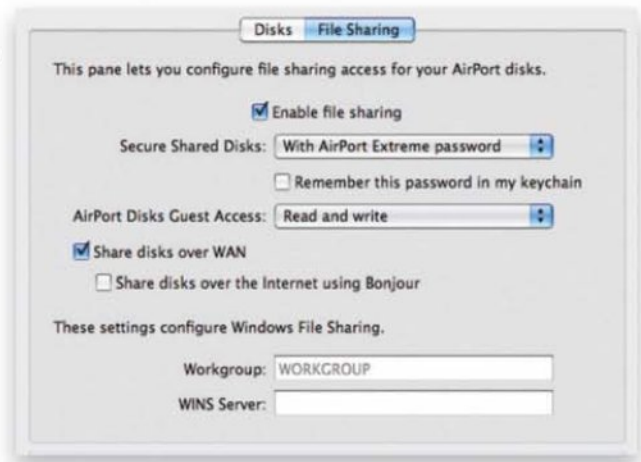
If he's using a Time Capsule or an AirPort Extreme base station (from 2007 or later), he could share files over the Internet without any port mapping. He'd launch AirPort Utility, select his base station, and press ⌘-L for Manual Setup. Then he'd click on the Disks icon, choose the File Sharing tab, select Enable File Sharing and Share Disks Over WAN (if those options are not already checked), and click on Update to restart the base station if necessary.

Note that Apple also recently updated its Time Capsule and AirPort Extreme hardware to provide remote access to internal and external drives via MobileMe; that access, of course, requires that Steve be running Leopard (on the Macs from which he's trying to gain access) and that he have a MobileMe account.

Put It Online

If Steve would rather not go to the trouble of configuring remote access, he could instead sync the desired files to shared storage on the Internet. The best option for doing so on a network with a mix of Windows and Mac computers is to use either MobileMe's iDisk (me.com) or DropBox (getdropbox.com).

If he enabled iDisk synchronization on his Mac (on the iDisk tab of the MobileMe preference pane, click on



WAN Disk Sharing To access drives attached to a base station from outside the local network, you have to make sure WAN disk access is active.

Start under iDisk Sync), files modified on his iDisk would be available from any computer with access to that MobileMe account. He could also store files in a password-protectable Public folder.

Windows users can access files on iDisk from Windows Explorer. Apple has posted instructions for doing so (support.apple.com/kb/HT3264). The URL for public access is <http://idisk.mac.com/membership-Public>, where *membership* is the iDisk user name.

DropBox might offer Steve a simpler alternative to iDisk. The service would store copies of his files on its own system, track revisions to files, and constantly update any changed files to anyone who subscribes to a given folder. Steve could have his own private DropBox folder and as much as 2GB of storage at no cost, and then share any folder within that main folder with any other user. If he needed more room, he could pay DropBox \$10 per month or \$99 per year for 50GB of storage.

DropBox uses a secure process to transfer file updates; and as long as he was connected to the Internet, Steve would have the latest version of any file in any common folders on each Mac OS X or Windows system he used. ☑

Glenn Fleishman is the author of the e-book *Take Control of Back to My Mac* (www.takecontrolbooks.com) and a frequent contributor to *Macworld*.



WPA Personal The best way to secure a network with a mix of Macs and Windows PCs is by enabling WPA/WPA2 Personal encryption.

Gmail Power Tools

How to maximize your productivity in Google's Web mail service **BY GINA TRAPANI**

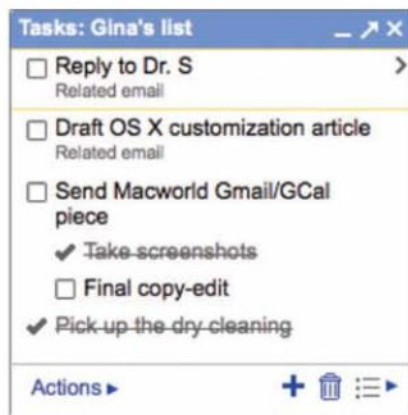
Back in the day, Web mail meant flashing banner ads, spam, and uncool addresses like ninjapirate73@hotmail.com. Gmail changed that. Google's free Web-based e-mail service offers a strong spam filter, gigabytes of storage, custom addresses, and more, for free.

That's why I moved all my personal and business e-mail to Gmail. If you use multiple computers and handheld devices (as I do), it just makes sense to have all your messages and contacts in one place, available from any Internet-connected device.

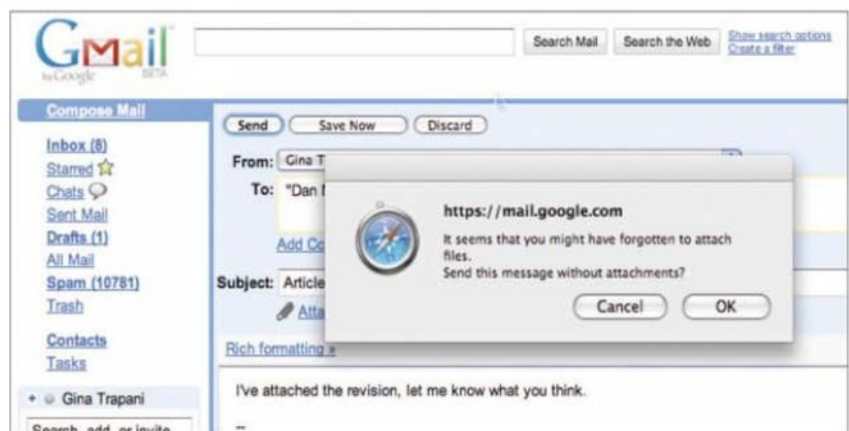
At first, I used desktop clients like Apple's Mail to manage my Gmail account. But I soon switched to Gmail's Web interface, and I've never looked back. One big draw is its impressive collection of power tools. Here are some favorites.

Gmail Labs

Last summer Google engineers opened Gmail Labs, where they test advanced features. On the Gmail Labs home page, you'll find a list of experimental Gmail



Tasks After integrating your to-do list into Gmail, you can turn messages into to-do items.



Don't Forget the Attachment Gmail can automatically detect when you forgot to add an attachment and remind you to do so.

features that you can selectively enable or disable. (If you're already a Gmail user, click on Settings and then select the Labs tab.) Google warns that these features may "change, break, or disappear" at any time, but a few are well worth the risk:

Canned Responses If you find yourself typing the same message over and over, you can instead type it once, save it, and then reuse it as needed. Tired of receiving mass e-mail messages? Create a "Please remove me from your mailing list" canned response and then use the Canned Responses drop-down menu to insert it into a reply message.

Forgotten Attachment Detector When you compose an e-mail that promises a document and press send without attaching the file, this embarrassment-saver asks if you meant to attach a file first. You have to explicitly say in the message text that you've attached a file for this one to work, and it doesn't work every time—but you'll be grateful when it does.

Google Calendar Gadget This feature puts your calendar next to your inbox, so

you can view upcoming events and add new ones. Coupled with the Tasks feature, this makes Gmail your one-stop PIM.

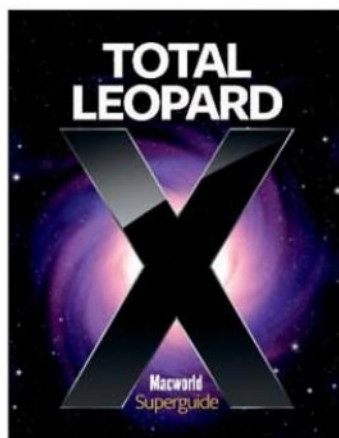
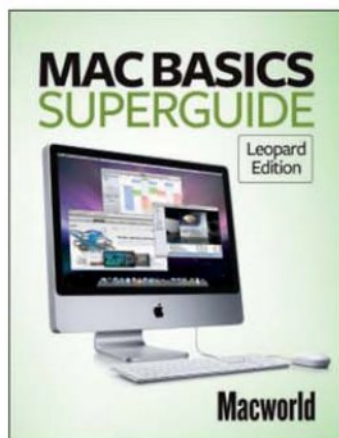
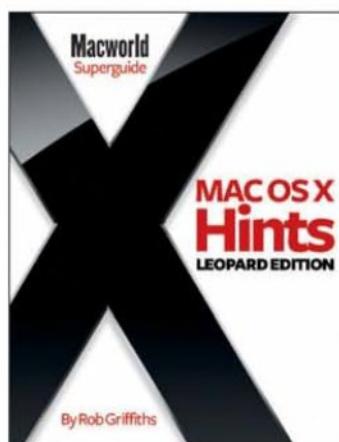
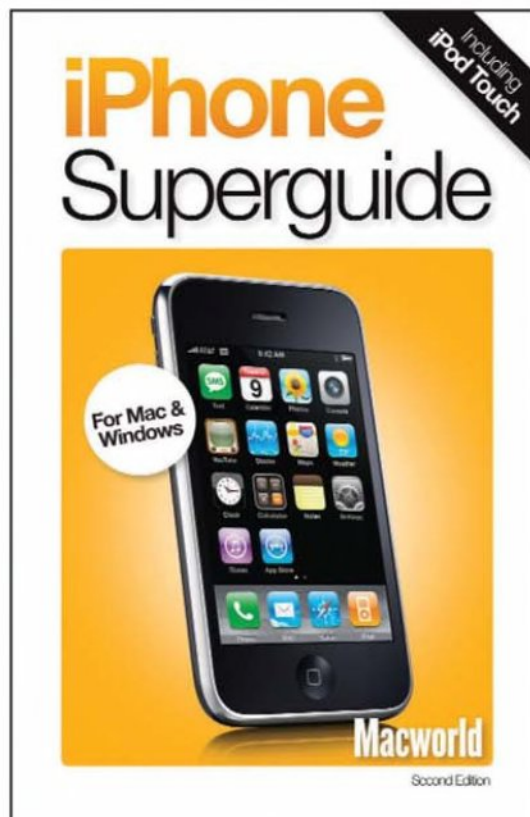
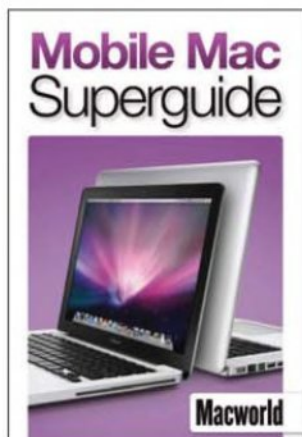
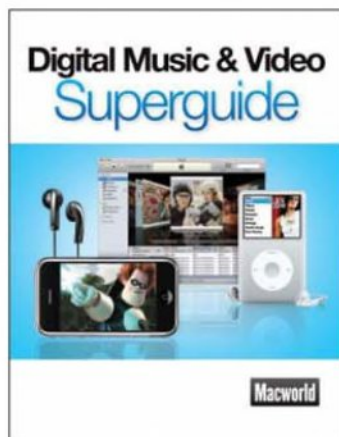
Quote Selected Text Respond just to a point buried deep in an e-mail by selecting the text and clicking on Reply (or pressing **R**). Gmail will quote only the selected text in your reply.

Tasks One of the most mature (and requested) Gmail Labs features, the Tasks gadget adds a to-do list that integrates with Gmail. Gmail Tasks supports multiple to-do lists, subtasks, notes, and due dates; as in Mail, you can quickly turn a Gmail message into a task. And, because it's Web-based, you can view, add, and edit your to-do list from your iPhone.

Mailplane

To get all of Gmail's Web-based features, plus the perks of a desktop client, try Mailplane (♦♦♦♦; macworld.com/4846) (\$25). It offers tighter desktop integration than your Web browser, including new-mail notifica-

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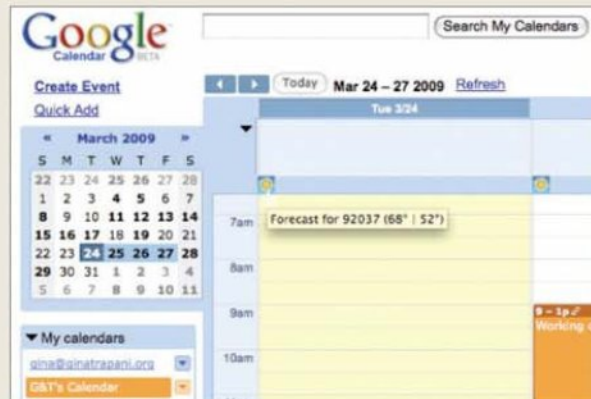
Google Calendar: Beyond the Basics

Google Calendar doesn't have all the Labs-based power tools of Gmail, but it's still got a few handy tricks.

Collaborative Scheduling Create separate calendars for family, friends, and work, and invite others to view and edit events on those calendars. Set permissions for each invitee, so, for example, your softball team's cocaptain can edit the game schedule but players can only view it.

Subscribe to Public Calendars In addition to creating your own custom shared or public calendars, you can subscribe to a selection of public calendars that contain useful dates such as U.S. holidays, religious holidays, and Netflix release dates. In Calendar Settings' Calendars tab, click on Browse Public Calendars to subscribe to read-only public calendars. Google Calendar can also subscribe to any public iCal feed.

Quick-Add Events in Natural Language Entering a new event into your Google Calendar doesn't require filling out a dozen form fields. Use the Quick Add link on the top left of your calendar to schedule an event in natural language—"Lunch with Teddy at The Cottage Tuesday at 1pm." You can also use this format to schedule events on-the-go: just text message Gcal from your mobile phone using short code **GVENT (48368)**. (Visit the Mobile Settings area to set up your phone and get all the available SMS commands.)

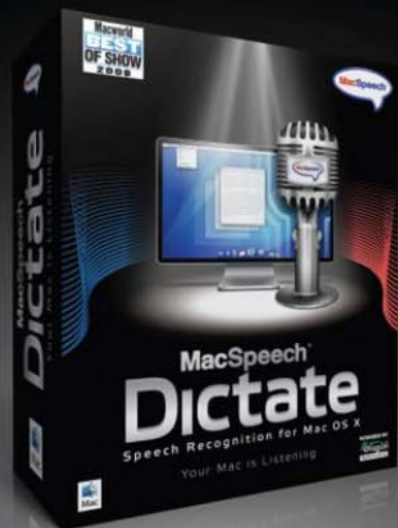


Today's Weather In Google Calendar, you can get local weather predictions for the days ahead.

Show This Week's Weather Forecast on Your Calendar In the Calendar Settings' General tab, enter your zip code or city and choose your preference for Fahrenheit or Celsius. When you return to your calendar, a small weather icon will appear at the top left of each calendar day, with sun or clouds and high and low temperatures.

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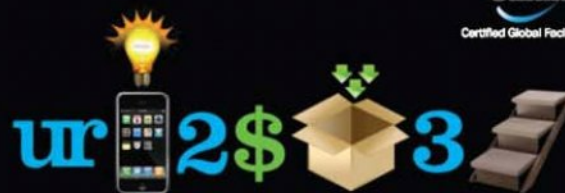
www.macspeech.com

Available from MacSpeech, Apple, and other fine Macintosh retailers. Visit the MacSpeech website for a complete retailer listing.



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tions in the menu bar, drag-and-drop message attachments, Address Book access, and easy account switching.

Centralized E-mail Accounts

Gmail's built-in mail fetcher lets you consolidate all your POP3 e-mail accounts into your Gmail inbox. In Settings, on the Accounts tab, click on Add A Mail Account You Own. From there, enter your other accounts' credentials; messages to those accounts will then appear in your Gmail inbox. Gmail lets you use your other reply-to addresses when replying to messages, as well; in Settings ► Accounts, set up your e-mail addresses under Send Mail As. You can fetch mail from up to five POP3 accounts at a time. The only downside is that you can't specify how often Gmail checks those accounts for new mail.

Voice and Video Chat

Skip Skype or iChat entirely, and chat via voice and video from inside Gmail. You'll need a microphone, an iSight or other Web

cam, and the free voice and video plug-in (compatible with OS X 10.4 and later). To get that last piece, click on Settings ► Chat, click on the Learn More link, and download and install the plug-in (mail.google.com/videochat). (It requires Safari 3.0 and later or Firefox 2.0 and later.) Restart your browser, select the chat contact you want to call, and click on Video & More to initiate a voice or video call.

Open Attachments

If you get a Microsoft Word attachment in Gmail, Google can open it even if you don't have Word installed. Instead of trying to open a Word document, an Excel spreadsheet, or a CSV file in its native application, Gmail offers to open it as a Google document. Clicking on the Open As A Google Document link will open the attachment in the appropriate Google app.

Search Autocomplete

The makers of the world's leading search engine put some killer search tools in its

e-mail product. As with Google's Web search, you can find most any needle in the haystack that is your Gmail archive by using advanced search operators such as **subject:**, **from:**, or **has:attachment**. If memorizing search operators puts you off, enable Search Autocomplete in Labs. With that done, start typing a contact name or operator, and the search box will make suggestions based on your contact list and appropriate search operators.

Google Notifier

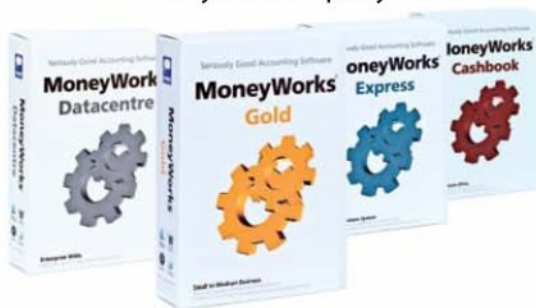
Managing Gmail deprives you of one (evil but necessary) feature of a desktop client: new-mail notifications. You can remedy that by downloading the free Google Notifier for Mac (macworld.com/2752) to get Gmail and Google Calendar pop-up notifications and/or audio alerts in your Mac's menu bar. ☒

Gina Trapani (ginatrapani.org) is the author of *Upgrade Your Life: The Lifehacker Guide to Working Smarter, Faster, Better* (Wiley, 2008).

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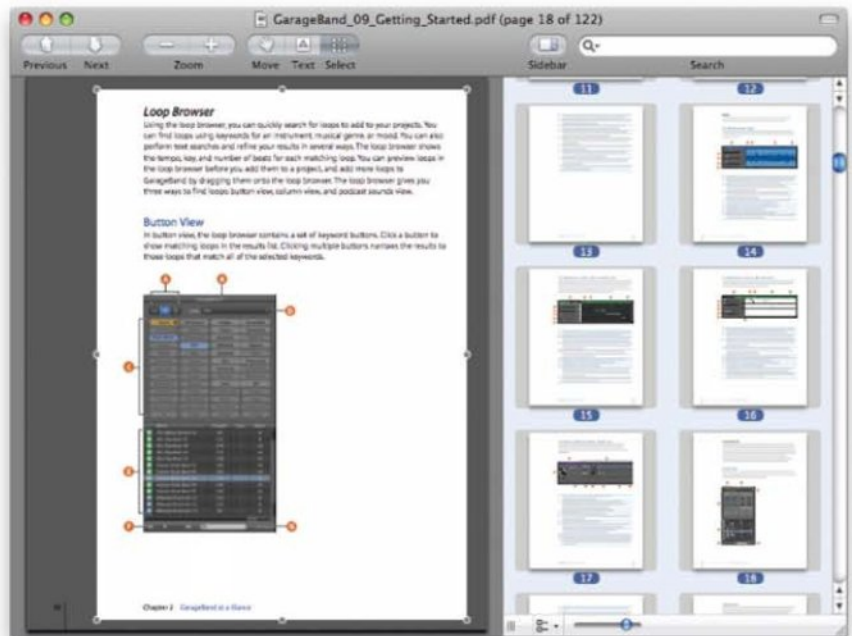
Mac OS X Hints

The insider tips you won't get from Apple **BY ROB GRIFFITHS**

Crop Multiple Pages in Preview

Many PDFs—such as electronic versions of product manuals—seem to come with gargantuan margins. This is especially annoying when you're trying to read on a small laptop screen. You can zoom in, of course, but you need to do so on every page. A good alternative is to remove the margins altogether, which you can do by using the crop tool in Apple's Preview.

Open the PDF you want to alter in Preview; make sure that the program's sidebar is visible (View ► Sidebar) and that you've set the sidebar to display thumbnails (using the pop-up menu at the bottom of the sidebar). Click on the Select tool in the toolbar (you can also press ⌘-3 or go to Tools ► Select Tool) and drag a box around the region you'd like to keep, trimming away the excess margins. Leave that area selected, and then click in the sidebar and press ⌘-A to select all the pages (see "Crop Multiple Pages in Apple's Preview"). If your document has a mix of landscape and



Crop Multiple Pages in Apple's Preview If you're annoyed by wide margins in a PDF, use Preview to crop the edges off many pages at once.

portrait pages, press the ⌘ or Shift key as you click to select just those pages you'd like to crop.

Once you've selected pages in the sidebar, select Tools ► Crop (⌘-K). Then save your file (File ► Save As) with a new name, in case you need the original later.

Reclaim Space from iTunes

Whether you're using a first-generation MacBook Air with a "teeny" 64GB drive or you're just a pack rat, you need every byte of hard-drive space you can find. If you use an iPod or an iPhone, there may be an easy way to recoup some room.

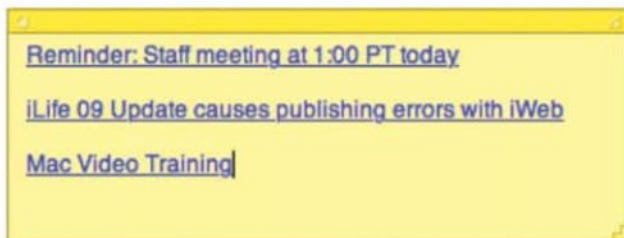
When Apple's iTunes downloads and installs software updates for connected iPods and iPhones, it keeps a copy of each update on the hard drive. Over time, you can build up quite the collection—on my Mac Pro, there are 7 iPod and 13 iPhone updates, altogether consuming more than 2GB of space.

To find these files, navigate to *youruserfolder/Library/iTunes*. There you'll see (depending on which devices you use) folders named iPod Software Updates and iPhone Software Updates. Go ahead and remove these folders—odds are you won't use these files again.

Have a Hint to Share?

Go to MacOSXHints.com to submit it. This month's column is based on tips from Joris de Beer, Rob Campbell, Björn Herrmann, Bryan Kelley, Ben Kurtz, Brad Lappin, and anonymous contributors. Each month, the author of our favorite tip receives the *Help Desk* mug.





Sticky Mail Links Drag an e-mail message onto a Stickies note to create a clickable link that takes you right to that message.

Create an iPhoto Import Tool

If you get a lot of pictures via e-mail or from the Web, you'll appreciate this slick and easy way to import images into iPhoto '09 or iPhoto '08 (both [iPhoto '09](#); [macworld.com/4319](#) and [macworld.com/3061](#), respectively; \$79 as part of the iLife '09 or iLife '08 suite, respectively).

iPhoto stores pictures in a bundle—a folder that looks like a file in the Finder. Inside this bundle is a special folder that triggers iPhoto to automatically import any images dropped into it. You're going to “borrow” that folder to create your own iPhoto auto-import tool.

In the Finder, navigate to your iPhoto Library file, which is typically in your Pictures folder (*youruserfolder/Pictures*). Control-click on the file and select Show Package Contents from the contextual menu. In the window that appears, you'll see a folder named Auto Import. Create an alias of this folder by holding down the \mathbb{A} and Option keys while dragging it to your desktop (or another convenient location). You should see a small arrow icon on the folder while you drag.

Rename the alias **iPhoto Importer**. When you want to import images into iPhoto, drop their files onto this alias. If iPhoto is running, it will import the images. If it's not, it will import them the next time you launch the program.

Set Up Program-Specific Smart Folders

Do you often save or open files from one particular set of folders? If you're running OS X 10.5 (Leopard), you can configure things so that each program's Open and Save dialog boxes provide access to just certain folders. You'll use the Finder's sidebar to do the trick. It

appears not only in Finder windows but also in Open and Save dialog boxes. And its Saved Searches section displays *smart folders* (saved Spotlight searches).

Go to a Save dialog box and use

the search box to perform a Spotlight search for the folder you want to access. Once the results come up, click on the Save button under the search box. In the sheet that appears, type a name for your saved search and select the Display Smart Folder For This Application Only option. Your new smart folder should appear in Open and Save dialog boxes for the program in which it was created. You can make different smart folders for each program you use to quickly jump to the locations you access most often.

Create Mail Links in Stickies

If you use OS X's Stickies program to save reminders, to-dos, and other bits of information, you may already be aware that the program supports embedded URLs from Web browsers. This means that if you drag and drop a Web address

WHAT'S ONLINE

Find Faces and Places

Use iPhoto '09's smart albums to easily locate pictures that need tags ([macworld.com/4598](#)).

Securely Erase Free Space

You can do this quickly by using Terminal ([macworld.com/4598](#)).

Improve PDF Speed in Preview

PDFs running sluggishly in Preview? Speed them up ([macworld.com/4599](#)).



into Stickies, it becomes a clickable link. This is useful for, say, creating a temporary holding spot for a list of URLs that you need to reference for a project.

But Stickies also supports clickable links from Apple's Mail (see “Sticky Mail Links”). Drag any message out of Mail and drop it onto a Stickies note—you'll have an instant link to that message. So if you have an e-mail that's related to text on a note, drag and drop the source message onto the note to connect the two. ☒

Senior Editor **Rob Griffiths** runs the MacOSXHints.com Web site.



POWER TIP OF THE MONTH

Expand Recent Places

When you select File ► Open within an OS X application, clicking on the drop-down menu at the top of the window reveals both the path to your currently active folder and a list of recently visited folders (in the Recent Places section). Unfortunately, there's only one list of recent folders for *all* applications, and it's limited to 5 items, which is really not long enough to be useful.

Using Terminal, you can increase the number of items in the list. In this example, I upped the limit to 10, which covers most locations I need without making the menu too long. Open Terminal (in /Applications/Utilities), type the following command, and then press Return (or you can copy and paste the command from our Web site at [macworld.com/4596](#)):

```
defaults write .GlobalPreferences NSNavRecentPlacesLimit -int 10
```

Replace the number 10 with however many entries you'd like to see in the Recent Places section. This change takes effect immediately, although it will take time to build up additional entries in the list. To go back to the OS X default, simply repeat the above command but change the number at the end to 5.



Mac 911

Solutions to your most vexing Mac problems **BY CHRISTOPHER BREEN**

Back Up and Restore Mail Archives

Q: How do I correctly back up my e-mail files on my old computer and then restore them to my new MacBook Pro?

Javier Campos

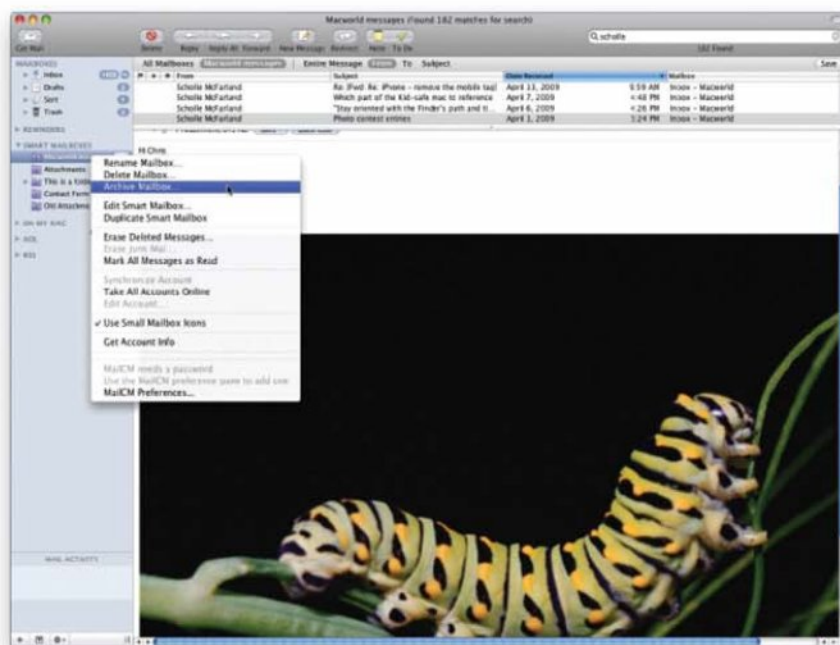
A: When you set up your new laptop, connect your old Mac to your MacBook Pro via a FireWire cable and let Apple's Migration Assistant do the dirty work. You'll be prompted automatically to use Migration Assistant, and then provided with instructions on how to set it up. (If you choose not to migrate when you first set up the laptop, you can do so later by running Migration Assistant, which lives in the /Applications/Utilities folder.) When the utility copies your user data, it will bring along your e-mail settings and messages.

You can also do the job manually by archiving your messages within Mail and then transferring those archives. Control-click (or right-click) on the Inbox in Mail and choose Archive Mailbox from the contextual menu (see "Archiving Mailboxes"). In the sheet that appears, you'll be asked to choose a destination for the exported mailbox files (called "mbox" files). Pick a location and click on the Choose button. Mail will create as many mbox files as you have accounts listed under Inbox.



Have a Problem?

Go to the Mac 911 forum (macworld.com/2467) for help with your misbehaving Mac or applications.



Archiving Mailboxes You can use Apple's Migration Assistant to move all your Mail messages and settings to a new computer, or you can archive Mail's mailboxes individually, as seen here, and then move them to the new computer yourself.

On the laptop, choose File ► Import Mailboxes in the Mail application. In the Import window that appears, choose Mail For Mac OS X and click on Continue. In the resulting sheet, select the folder that contains your mailbox archives and click on Choose. A list of all the mailbox archives Mail is able to import will appear. Deselect those you don't want and then click on Continue. Mail will place the archives in an Import folder under the On My Mac heading in Mail's Mailboxes list.

At this point, you'll want to click on each mailbox to see what it contains and then rename the mailboxes to accurately reflect the account they're linked to—AOL Archive, for example.

Access a Mac When You Don't Know the Password

Q: I was given my mother's iMac because she passed away, but I don't know the password. How can I gain access to this Mac?

Via the Internet

A: This question is a little delicate because you could use the method I'm about to describe to access any Mac. But situations such as yours (as well as problems that come up when you purchase a used Mac that hasn't been properly cleared) invite a response.

Locate that Mac's installer disc or a recent OS X installer disc—for example, an OS X 10.4 (Tiger) or OS X 10.5

(Leopard) disc. Insert that disc into the Mac's media drive and hold down the keyboard's C key to start up the Mac from that disc.

When the Mac boots, you'll be asked to choose a language. Do that and then click on the right-pointing arrow icon to continue. When the Welcome screen appears, wait for the menu bar to materialize and choose Utilities ► Reset Password. In the resulting window, click on the Select A User pop-up menu and then choose the user whose password you want to change. Enter and confirm a password in the appropriate fields and, if you like, enter a hint for the password. Click on Save to make the change.

"Oh, swell," I hear parents saying. "You've just given my kid the key to taking over my Mac. Thanks so much!" Fortunately, now that you know how to break in to your Mac, you can make it more difficult to do so. Boot your Mac from that installer disc again, find your way to the Welcome screen, and choose Utilities ► Firmware Password Utility. In the window that appears, click on Change, and then enable the Require Password To Change Firmware Settings option and enter and verify a password. Click on OK, and your Mac is now protected with a firmware password.

This means that if your kid starts up your Mac with an installer disc in the media drive and presses the C key to

boot from the disc, the Mac will ignore that key press and move to the login screen. If the kid is really savvy and presses the Option key to move to the screen where you choose a device to boot from, a pad-lock icon will appear with a text field below it. If your child fails to enter the correct firmware password in that text field, the Mac will not boot from the disc.

Convert GarageBand Tracks to Electric Guitar Tracks

Q: I have some old GarageBand projects that include electric guitar parts I played with my MIDI keyboard using GarageBand's software instruments. I now have GarageBand '09 and would like to use the new guitar amps and stomp boxes with these tracks. Is there a way to convert these tracks so I can use them with the new amps and stomp boxes?



Converting a GarageBand Loop You must first convert software instrument tracks to real instrument tracks before you can use GarageBand '09's guitar amps and effects.

Grooving, for example—and then click on Create (see "Converting a GarageBand Loop"). The track will be added to GarageBand's collection of loops.

Click on the plus-sign (+) button in the lower left corner of the GarageBand window to add a new track, select Electric Guitar in the resulting sheet, and click on Create to create a new Electric Guitar track. Choose Control ► Show Loop Browser to expose GarageBand's loops. In the Search field at the bottom of the browser, enter the name of the track you added to the loop library. Drag this track into the new Electric Guitar track. When you do, it will be converted to a real instrument (digital audio) track. Once you're in the Electric Guitar track, you can apply GarageBand's amps and stomp boxes to it.

If you have a real instrument track to begin with rather than a software instrument, you can simply create a new Electric Guitar track, select the contents of that real instrument track, and then Option-drag them to the empty Electric Guitar track to copy those contents to the new track. ✕

Senior Editor **Christopher Breen** is the author of *The iPod and iTunes Pocket Guide*, fourth edition, and *The iPhone Pocket Guide*, third edition (both Peachpit Press, 2008).



Blocking Access It's not very hard to get around a Mac's password if you have an OS X installer disc. But if you add a firmware password and set up your Security preference pane properly, your Mac will be reasonably safe.

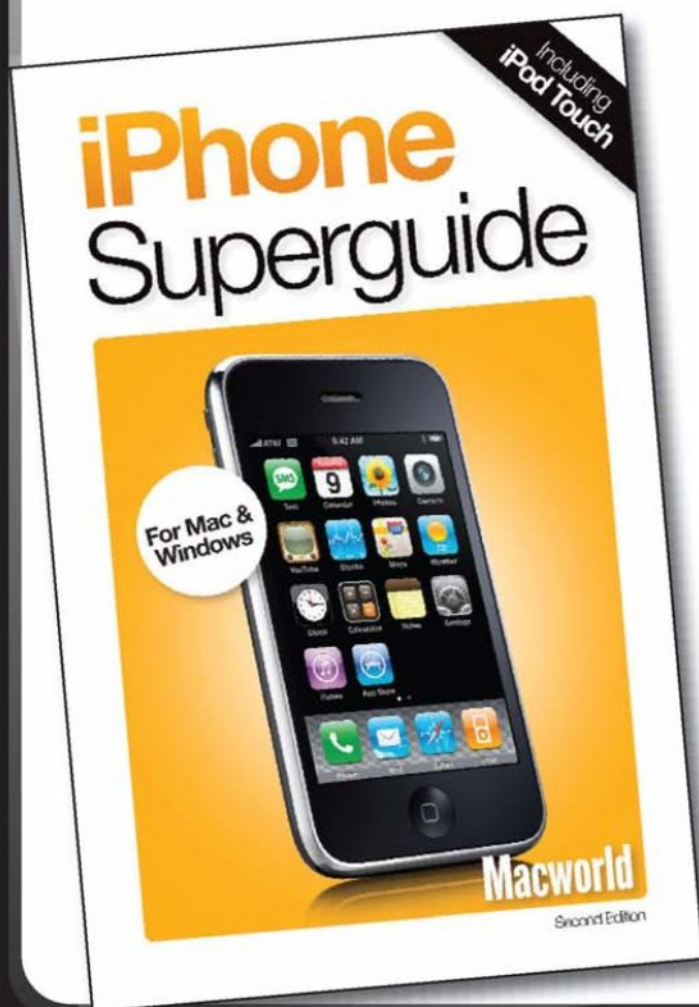
Glenn Henderson

A: Apple's GarageBand '09 (<http://www.apple.com/macosx/garageband/>; [macworld.com/4409](http://www.macworld.com/4409)) doesn't provide an obvious way to do it, but yes, it's possible. Select the track you want to convert in GarageBand, and choose Edit ► Add To Loop Library. In the sheet that appears, name the track, assign to it any descriptors you like—Guitars, Electric Guitar, and

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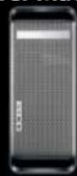


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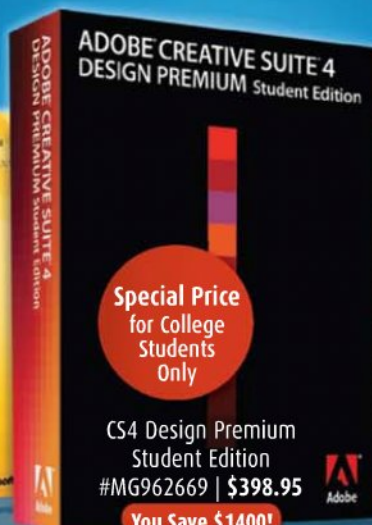
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The State of American Broadband

In the country that invented the Internet, why is high-speed access so bad?

The Internet was born and raised in the United States. But thanks to slow speeds, inconsistent availability, and bandwidth caps, we now lag behind the rest of the world when it comes to broadband Net access.

Slow and Limited

According to Point Topic (a UK-based researcher), there were 79 million broadband subscribers in the United States at the end of 2008. (The report defines broadband as anything over 256 kilobits per second.) However, at roughly 26 percent, the United States ranked 22nd out of 113 countries in broadband penetration by population. Other studies have ranked us about the same.

Yes, having more than 300 million people spread out over 3.5 million-plus square miles presents challenges. But it's pathetic that roughly three-quarters of the people in this country don't have broadband Internet service.

The speed and price of broadband in the United States is shameful as well. In my San Francisco neighborhood, the fastest available DSL service is 3 megabits per second downstream and 512 Kbps upstream for \$25 a month. By contrast, *Macworld* contributor Kirk McElhearn, who lives in France, gets twice those speeds with DSL for €30 a month (about \$40). If he didn't live in a semirural area, his service would be even faster.

My local cable carrier (Comcast) says it could provide up to 12 Mbps downstream for \$43 a month, or up to 16 Mbps for \$67 a month. But Comcast doesn't guarantee those speeds—and they can vary widely.

Verizon's fiber optic service (FiOS), offers download speeds up to 50 Mbps and upload speeds up to 20 Mbps for \$50 to \$145 a month. But FiOS isn't available in San Francisco—or anywhere else in northern California. In fact, FiOS Internet service is currently available in

only 17 states. It has been slow getting to the rest of us because laying the fiber necessary to make it work is costly and time-consuming.

No matter how fast your Internet service is, it may also be subject to bandwidth restrictions. In October 2008, Comcast placed a 250GB per month cap on residential users.

You might think you'd never get close to that 250GB ceiling. But in a multimedia world, you could start feeling cramped much sooner than you might expect. Download HD movies from the iTunes Store, upload photos and HD videos to places such as Flickr or YouTube, and back up your Mac to an online service, and you could use up your bandwidth allotment pretty fast.

Time Warner Cable also announced its own trial program of tiered Internet plans, with substantial charges if you

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went over your allotment. The company backed off after public outcry. But tiered or metered bandwidth plans seem to be gaining traction among ISPs.

Help on the Way?

The situation is not entirely hopeless. The U.S. economic stimulus package that passed in February included \$7.2 billion for "competitive grants to accelerate broadband deployment in unserved and underserved areas." The Federal Communications Commission has until February 2010 to develop a national broadband plan. (You can share your comments by visiting the Electronic Comment File Submission page [macworld.com/4828] and entering **09-51** in the box under Proceeding.)

But put that spending in context: Australia will spend almost \$31 billion to set up a new broadband network; its goal is to provide at least 90 percent of the country with 100 Mbps access by 2018. South Korea is dishing out \$25 billion to boost wired broadband speeds to 1 gigabit per second and wireless speeds to 10 Mbps by 2012. (That's in a country where 100-Mbps downloads are already the norm).

AT&T and Verizon have been expanding the reach and speed of their respective broadband wireless networks. And technologies like FiOS will become more widespread—but that's years away.

And when it comes to caps, Congressman Eric Massa of New York plans to introduce a bill in the House of Representatives prohibiting unfair tiered price structures, while also encouraging more competition among Internet providers.

The bottom line? There are lots of excuses but no good reasons for not doing a better job as a nation of making sure fast, affordable broadband is as ubiquitous and easy to obtain as electricity, water, or snail mail. ❌

Jonathan Seff is a *Macworld* senior editor.

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