PROTECT YOUR MAC AND WATCH YOUR BACK

MAC-BASED HOME SECURITY CAMERAS, p. 74
TOP TOOLS TO FIGHT LAPTOP THIEVES, p. 72

Macworld

www.macworld.com | April 2004

The Mac Product Experts

PANTHER SECRETS DECLASSIFIED

Uncover 51 HIDDEN FEATURES and PRODUCTIVITY BOOSTERS

- Resurrect AppleTalk Networks
- Enable Faxing Features
- Listen to Text Files on an iPod
- Run OS X 10.3 on Older Macs
- And Much More!

20-INCH iMAC REVIEWED

TOP TAX TIPS | PERSONAL FINANCE SOFTWARE

iTunes.

Where digital music lives.

With iTunes, you get the world's best online music store and digital music jukebox in one place. iTunes lets you preview songs for free, download your favorites for only 99 cents each, easily manage your entire music collection, create custom playlists, burn CDs and sync up with your iPod.** You can even share your music with other computers in your home – even over wireless networking. And because of iLife's seamless integration, you can effortlessly import your music into iPhoto, iMovie and iDVD projects.

iMovie.

You call the shots.

iMovie, Apple's legendary video editing application, now makes it even faster and easier to create movies like a pro. Trim clips right in the timeline. Use new alignment guides to precisely sync your video and audio elements. Add a soundtrack with music straight from your iTunes library or GarageBand, or use professional sound effects from Skywalker Sound™ (the folks behind *Star Wars* and more). When you're done, just click to send your movie to iDVD, your .Mac homepage or even your Bluetooth device to take with you.

iDVD.

Creativity to burn.

You've created your own movies, photo albums and playlists. Now use iDVD to share them with your family and friends. Start by choosing between 20 new Hollywood-style themes. Add your iMovies. Add albums from iPhoto to create slideshows. Add a playlist from iTunes for the soundtrack. Then use the new DVD Map to get an overview of your entire project. When you're done, burn your masterpiece[1] – up to 2 hours of content – to a DVD that can play on almost any DVD player.

*TM and ©2004 Apple Computer, Inc. All rights reserved. Requires 600MHz G3, Mac OS X v10.2.6 and 256MB RAM. For more information, please call 1-800-MY-APPLE or visit www.apple.com/ilife. *U.S. only. Terms apply. **MSRP. † Internet access required; fees may apply. ‡U.S., Canada, Japan and select territories; fees apply. ††Skywalker Sound is a trademark and service mark of Lucasfilm Ltd. [1]SuperDrive required.*

iLife.

From 9 to 5, there's Microsoft Office. For the rest of your life, there's iLife – Apple's award-winning suite of applications that work seamlessly together so you can do amazing things with your photos, music and movies. Organize and share up to 25,000 of your digital photos with iPhoto 4. Download and listen to your favorite songs with iTunes – the world's best online music store and digital music jukebox. Turn raw video from your digital camcorder into a keepsake movie with iMovie, then burn it onto a DVD to share with family and friends with iDVD. And now create your own music – by recording a live performance or using 65 built-in software instruments and over 1,000 professionally recorded loops – with GarageBand, the newest member of the iLife suite. It's all just $49,* or included with any new Mac.

iPhoto.

25,000 photos, zero waiting.

Digital cameras make it easy to shoot tons of photos in no time. Thankfully, iPhoto 4 makes it easy to organize and share up to 25,000 of them. iPhoto's new date folders automatically organize your photos by year. And you can now enjoy them in slideshows featuring new cinematic-quality transitions, and music from an entire iTunes playlist. Share your photos between all the computers in your home – even over wireless networking, email them, order prints, or have them printed in a professional hardcover iPhoto book!

GarageBand.

Compose yourself.

Whether you're a serious musician or just want to sound like one, GarageBand is the easiest way to create music like a pro. Turn your Mac into a grand piano, drum kit or any of 65 built-in software instruments by simply plugging in a USB or MIDI keyboard. Add live guitar and vocal recordings. Then add the rest of the band by choosing from over 1,000 professionally recorded loops. It's like having a complete recording studio right on your Mac.

*An iLife '04 Up-To-Date upgrade package is available for a shipping and handling fee of $19.95 (U.S.) for Macs purchased on or after 1/6/04 that do not already include iLife '04.

Happy
Birthday
Annabelle

It's like 'Microsoft Office' for the rest of your life.

Cars have horsepower. Printers have

nozzles.

And the i960 has 3,072, making it one of the fastest printers in its class.

Fasten your seatbelts. The Canon i960 Photo Printer is here, and it's fast. Real fast. Need a 4" X 6" borderless print? The i960 can crank one out in about 37 seconds.* Want something a little bit bigger – say, 8.5" x 11" or 5" x 7"? The i960 can do that, too. With printers, you see, speed is a matter of ink nozzles. The i960? It happens to have more than any comparable printer. A lot more. "Sure," you say. "But what about quality?" Gee, we thought you'd never ask. Thanks to our Microfine Droplet Technology,™ the i960 produces tiny ink droplets that are just two picoliters in size, and lets you achieve a resolution up to 4800 x 1200 dpi.** Interested in learning more? Visit www.usa.canon.com/consumer. Or call 1-800-OK-CANON. But don't delay. We're expecting the i960 to go pretty darn fast.

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amera must be purchased separately. Specifications subject to change. *4x6 Print speed based on the default printer driver mode using Canon Photo Pro. **Ink droplets can be placed with a minimum pitch of 1/4800 inch. Resolution may vary based on printer driver setting.
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April 2004 www.macworld.com

Incorporating MacUser

Macworld

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Photography by Peter Belanger

The Virtual CD
Subscribers now have free access to the contents of the CD-ROM that comes with newsstand copies of *Macworld*. (Broadband Internet recommended.) To view the contents of the CD, go to http://cd.macworld.com/2004/04/pig-green

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It's not a hat.

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PORTRAIT BY SVEN WIEDERHOLT

Folklore's Lure

CELEBRATING THE MAC'S 20TH ANNIVERSARY HAS BEEN A lot of fun—we covered it extensively in our February issue, and we'll publish a series of stories about it in *Mac Beat* throughout 2004. But look past the increased media coverage of the Mac in this anniversary year, and you'll find the best 20th-birthday present the Mac could ever get: Folklore.org.

Original Mac team member Andy Hertzfeld set up the site, which features dozens of first-person accounts of the early days of the computer—all written by the very people who created the Macintosh. The stories themselves are fascinating and include such gems as the origin of Steve Jobs's "reality distortion field" (Bud Tribble coined the term, likening Jobs's fierce brand of optimism to a *Star Trek* force field); a bold statement Jobs made to Adam Osborne, the creator of the first "portable" computer; and Bill Gates's shameful past as the programmer of a particularly embarrassing DOS video game.

"I've been telling friends and coworkers anecdotes about the original Macintosh development for the last 20 years," Hertzfeld told me. "It was satisfying to finally write some of them down."

Hertzfeld had been kicking around the idea of something like Folklore.org since 1996, but it was the 20th anniversary of the Mac (and a desire to do some programming in the Python scripting language) that was the impetus for the launch of the Web site in January.

The content of Folklore.org is a treat in itself, but Hertzfeld (who also cofounded Radius, General Magic, and Eazel) also envisions the system that runs the site as a gift to the Web community; he's going to release the Folklore software this spring so other people can set up similar sites of their own. I hope it will join some other landmark Web technologies, such as Slash (featured most famously at Slashdot.org) and the Weblog tools Blogger and Moveable Type, as one of the building blocks of the Web.

Subjective Reality

When I first saw Folklore.org, I'll admit that I wondered just how reliable any story could be 20 years after the events described. But Hertzfeld's got a good answer: he freely concedes that history is subjective, that memory is a funny thing, and that different people can honestly have different recollections of the same events. So all of that figures into Folklore's design—conflicting accounts can live together in the system, providing readers with multiple viewpoints of the same historical event.

As for his own recollections, Hertzfeld says the reaction from his former Macintosh colleagues "has been uniformly positive." Several of them, including programmer Steve Capps and icon designer Susan Kare, have contributed stories to the project. "Even Steve Jobs told me that he liked the site," Hertzfeld says.

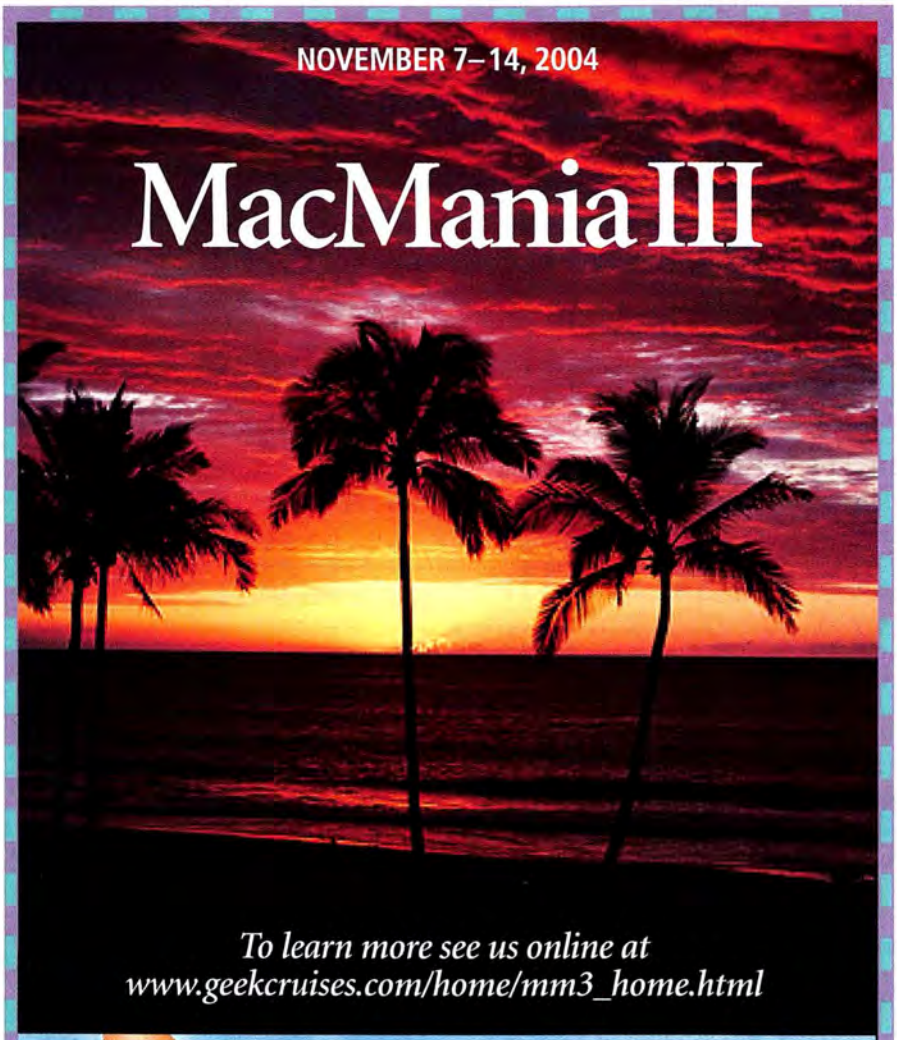
Help with Panther

This month's cover story ("Panther Secrets Declassified," page 50) is an 11-page collection of tips and tricks that will help you use Panther, the latest version of Mac OS X, to its fullest. Add in the multitude of Unix-flavored tips in *Mac OS X Hints* (page 76), and we've given you more than 50 cool ways to improve how you use your Mac, courtesy of Contributing Editors Christopher Breen, Dan Frakes, and Rob Griffiths, and others. My favorite tip: how to use ColorSync (of all things) to dramatically reduce the size of PDF files. □

ABOUT THIS MACWORLD

Numerous current and former *Macworld* writers and editors have been participating in the Weblog revolution for years. (Basically, a Weblog is a Web site where a person or group writes fairly regularly about topics of interest to them.) But *Macworld* hasn't jumped on the Weblog bandwagon—until now. Macworld.com has launched two Weblogs. Mac 911 (www.macworld.com/weblogs/mac911) features Christopher Breen writing every day with Mac tips and troubleshooting advice. Editors' Notes (www.macworld.com/weblogs/editors) is a place for *Macworld* staff members (including Editor in Chief Jason Snell, President Rick LePage, and Online Editor Jim Dalrymple) to write about the latest news, sound off on hot topics, or describe the Mac products they're excited about. And, true to the Weblog experience, the discussion doesn't end when the writing stops. Each Weblog entry is linked to a thread in the Macworld.com forums, where readers can talk back to the Weblog authors and one another.

Whether it's thoughts on the future of Folklore.org or Panther tips of your own, I'd love to hear from you, either at jason_snell@macworld.com or in our online forums at www.macworld.com.



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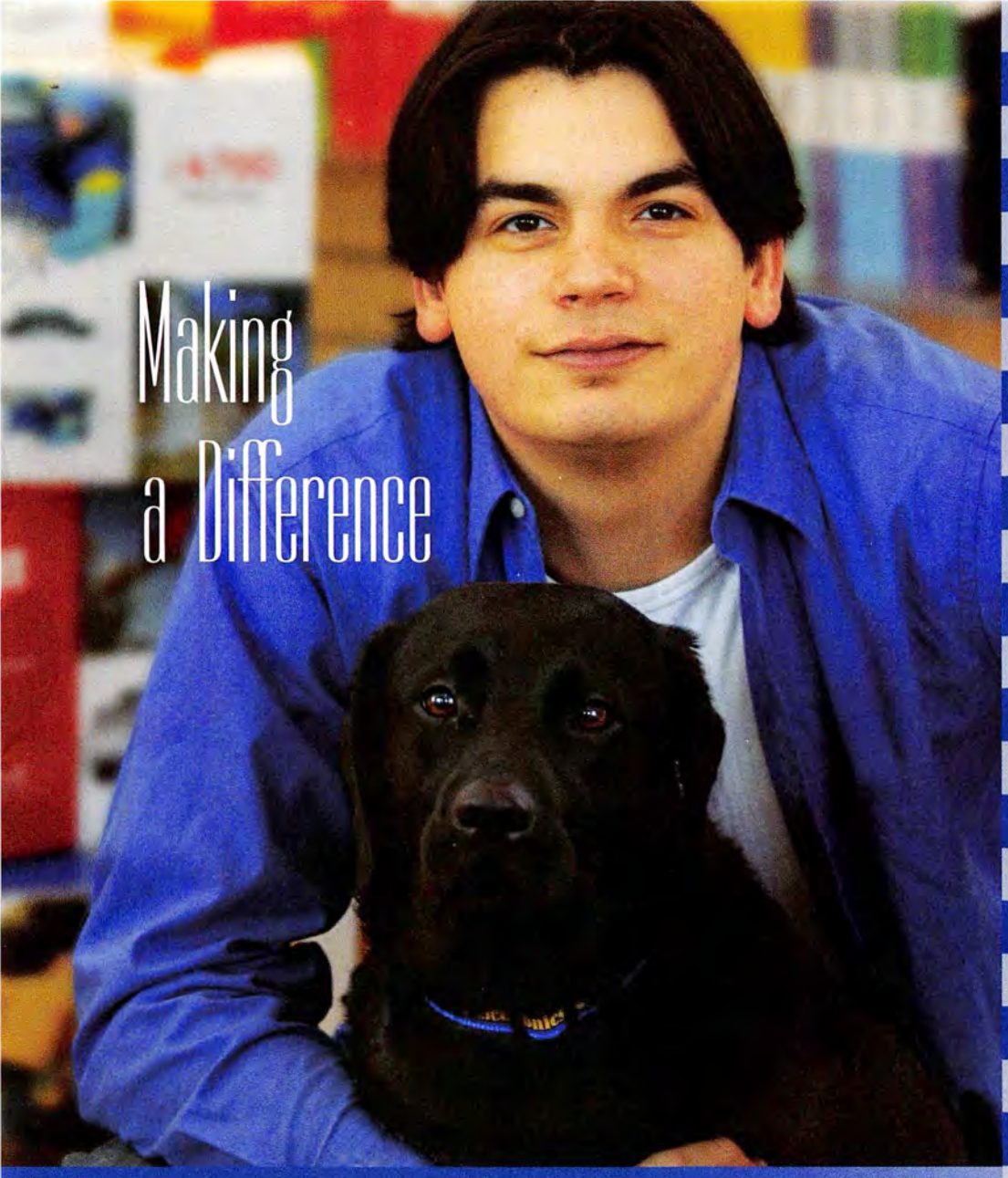

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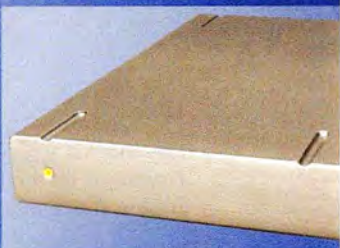

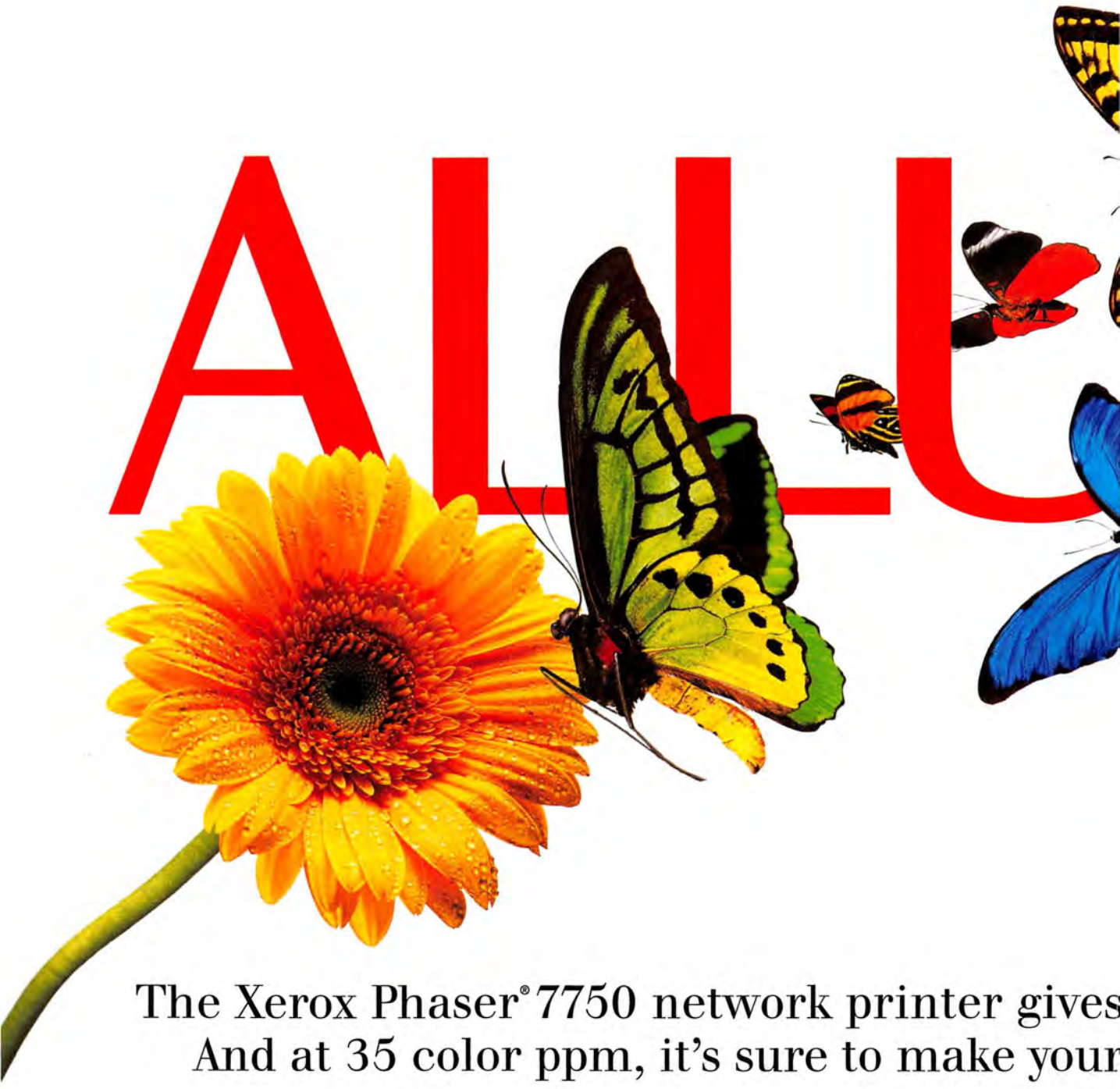

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Macromedia, May I?

LINDA REYNOLDS

The review of Macromedia Studio MX 2004 (January 2004) should have stated that Macromedia now uses "product activation" to authorize the software to run beyond 30 days from the time of installation. This is for purchased, full versions. I find the timing of this to be especially bad, with the new G5 hardware and the newly released Panther upgrade. It's way too much turmoil for users to be authorizing, unauthorizing, and then phoning Macromedia's customer support to request additional authorizations.

I won't be installing any software that makes me ask permission over the Net or by phone to use it.

When We're Right, We're Right

ARTIE EVANS

Jason Snell's review of Eudora 6.0 (★★½; January 2004) stated exactly what I've been saying: Eudora's interface is really outdated and has been for some time now. It needs a major overhaul to look and feel like a Mac OS X application.

CHARLY AVITAL

Jeffery Battersby's review of Nisus Writer Express (★★½; January 2004) is painfully accurate. As a registered user of Nisus Writer under OS 9, from version 3.X to 6.X, I had great expectations for an OS X–compatible Nisus Writer at least as good as its forebears. (I'm currently running Panther 10.3.2.) But Nisus Writer Express is way off the mark.

Classic Dilemma

DR. JEFFREY CHAJES

I would like to broaden Ben Boychuk's discussion of the issues faced by classical music listeners using iTunes and an iPod ("Appreciating the Classics," *Mac Beat*, January 2004).

Extrapolating from my own experience, it would seem that most serious classical-music listeners use iTunes and their iPods to work with their own CD collections. I ripped tens of CDs in anticipation of an overseas sabbatical, preferring to take my collection along on the iPod. This experience proved frustrating, at least initially. The cataloging of classical music is flawed in the iTunes Music Store and, to an even greater extent, in the CDDB database, from which iTunes gathers track information when you insert a CD. Rock or jazz listeners rarely have more than album, track, and artist names to enter, and these usually show up accurately in iTunes when they rip an album. A classical listener wants to know more: composers, soloists, ensembles, and movements' names, for example.

In my experience, much of CDDB's information for classical CDs is inaccurate or was entered in a different template. Therefore, in the Composer column, the artist's name will appear, and vice versa. The problem of mixed-up columns is so great, and solving it is so time-consuming, that I wrote to Doug Adams, who graciously created and adapted a number of his AppleScripts for iTunes to address these problems and others (www.malcolmadams.com/itunes/).

Another gripe: If you're a classical music listener, the iPod buds are not for you. Frustration with their poor sound quality led me to discard them quickly.

Mac Mobility

MICHAEL SHAFAE

"Leave Your Laptop at Home" (*Mobile Mac*, January 2004) is very thorough with regard to synchronizing the mailboxes of two Macs using a mechanism where messages and their attachments are stored on the client and not the server. But there are two errors in the article with regard to IMAP. A client using IMAP doesn't need a network connection to display previously read messages. You can have the e-mail client cache the entire message or just the header. In the case of Apple's Mail, you set this option via the pull-down menu under the Advanced tab in the Accounts preference pane. I recall that Eudora had something similar and I'm sure the other clients do, too. Choosing this option makes everything (even the attachments) available for viewing even when you're not connected to a network.

Second, you can configure IMAP to store only your in-box on the IMAP server; this leaves you free to store your saved messages on your local Mac. The article implies that you have to store the in-box and your mail folders in a single location. Usually, an ISP will limit only your in-box size, and users can save their

CORRECTIONS

In "Leave Your Laptop at Home" (*Mobile Mac*, January 2004), we say that you can purchase a Palm Bluetooth card that fits in the expansion slot of the Tungsten E. In fact, the Tungsten E is a Palm OS 5 device, and currently no driver for the Bluetooth card supports that Palm OS.

In "20 Years of the Mac" (February 2004), we stated that Claris released FileMaker Pro in 1985. In fact, the program, called simply FileMaker, was at that time owned by Nashoba Systems, and was released by Forethought.

Also in "20 Years of the Mac," we referred to the StyleWriter as a laser printer. It was an ink-jet printer.

messages in mailboxes located elsewhere on the server. Unfortunately, this depends heavily on the configuration of your ISP's mail systems, and setting up your mail client appropriately depends on your site's configuration. Usually you must have entered the correct IMAP path prefix in the Advanced area of the Accounts preference pane.

I say that IMAP can do things better than POP. It offers the flexibility POP lacks (namely, folders within folders, SSL, multiple authentication methods, online and offline operation, anonymous shared mailboxes, and more). I switch between a Macintosh, a PowerBook, a Sun, and an SGI, and I have three e-mail accounts. IMAP has kept my mailboxes in order. Using POP would have been a nightmare.

I ♥ Mac

WILLIAM BENNETT

I am a teacher. Yesterday at a faculty meeting, our principal gave everyone in the building a present: a Gateway 64MB USB drive.

Like a kid, I rushed to my Gateway computer on my school desk to try it. "It's plug and play. This will be easy!" I thought. So I go into My Computer to look for the drive, but it's not there. Seems we have so many hard drives on our network that there were no letters available for it. To access it, I had to log off the network and log back in to just my workstation.

I finally got it working and transferred some files to it. I brought it home, plugged it into the USB port on my G4's keyboard, and instantly saw an icon on the desktop!

I love my Mac.

Scanning Resolutions

PAUL HERMAN

"Bring Old Photos to iPhoto" (*Digital Hub*, January 2004) suggests that the only criterion for scanning resolution is simply what you want to do with the result—whether you're printing via an ink-jet device (180 to 240 dpi) or ordering prints (in which case 300 dpi should be sufficient). In so doing, however, the article ignores the desired size of the final product. When I scan a full-frame 35mm color negative, I really don't want to wind up with a 24mm-by-36mm print (although you could certainly hang a lot of them on a wall). I'd rather expand it to an 8-by-10-inch print. Accordingly, I must allow for an (approximate) 8× increase in resolution to get reasonable quality in the final product. So I most often scan at 2,400 to 2,700 dpi (sometimes a bit more, if I know I'm going to crop the picture a lot and thereby lose pixels). It creates a large file, but you wind up with something you can see without squinting.

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APPLE UPDATES LOGIC, PREVIEWS FUTURE ADDITIONS TO AUDIO SOFTWARE

Apple's Logical Moves

Since the iPod's 2001 debut, Apple has pushed to make the Mac the preeminent platform for music creation, playback, and distribution. In 2002, the company bought Emagic, a top cross-platform developer of music-production software. That purchase led to the release of Logic Platinum 5.3, the first Mac OS X–compatible music sequencer (at the same time, Apple dropped development of the Windows version of Logic). A year ago, Apple introduced the iTunes Music Store, which has become the world's leading online music store. And the company rocked into 2004 with the introduction of GarageBand, a new music-composition program for consumers (see "Center of Attention," March 2004). What's next in Apple audio? The company is coming out with updated versions of its pro-level audio programs, which are aimed at helping Mac users make some noise.

Apple reinforced its position at the Top of the Pops with the recent release of a pair of products: Logic Express 6 and Logic Pro 6 target the middle and high ground, respectively, of music creation. The naming scheme should seem familiar to users of Final Cut Express and Final Cut Pro; just as those programs are steps up from iMovie, the two Logic products are steps up from GarageBand.

Home Studio Apple has split music-production program Logic 6 into Express and Pro (shown above) versions.

Logic Pro 6 combines the Logic Platinum audio-production software—which is no longer available separately—with a bundle of existing products used in high-end studios. The bundle includes more than 50 audio Digital Signal Processing plug-ins—such as the Space Designer reverb—and ten software instruments, led by the acclaimed EXS24mkII sampler. Purchased separately, these products would cost $2,300; Logic Pro 6 costs just $999. Logic Gold and Logic Platinum 5 or 6 owners can upgrade to Logic Pro 6 for $199; users of older Logic versions can upgrade for $699. The software supports as many as 128 tracks, as many as 128 MIDI ports, unlimited MIDI tracks and input channels, sample rates up to 192kHz, and 32-bit internal processing.

The $299 Logic Express 6 is based on the same technology as Logic Pro 6 but supports only 48 tracks, 12 input channels, and sample rates up to 96kHz. Logic Express is a basic set of six professional tools, aimed at students and educators, that includes 28 effects plug-ins and software instruments.—DAVID LEISHMAN

LOGIC'S FUTURE LOOKS BRIGHT

Behind closed doors, Apple is always hard at work on new products. And during January's NAMM music-product trade show, the company tipped its hand, giving music pros a glimpse of two new technologies, Sculpture and UltraBeat, as well as Guitar Amp, an amplifier-modeler feature—all of which will appear in future versions of Logic Pro.

Sculpture is a component-modeling–based synthesizer that simulates the behavior of musical-instrument components. The technology will enable Logic users to modify a sound's tonal characteristics so they can develop their own instruments and sounds. For example, a user could begin with the sound of a vibrating string, and then alter performance variables to make that string sound either plucked or strummed.

UltraBeat is a percussion synthesizer, designed for producers of electronic dance music, that supports FM, subtractive, sample-based, and component-modeling synthesis. It lets users modify as many as 25 independent drum voices, and it lets them control dynamic timbre changes.

Guitar Amp is similar to the amplifier-simulation component in GarageBand. It offers guitar players some basic adjustments and settings, but it also provides a much higher level of flexibility and customization for professional musicians by including settings for speaker-cabinet selection, microphone type and placement, and EQ type.

In addition to including Sculpture, UltraBeat, and Guitar Amp, future versions of Logic Pro will feature support for enhanced Apple Loops, the open-standard file format for matching audio loops and sound effects in real time. This means users will be able to easily import MIDI performance and channel effects configurations contained in the new instruments, using them as either audio or MIDI loops. This technology is currently used in GarageBand, so Logic Pro will be able to import projects from that iLife program.—DAVID LEISHMAN

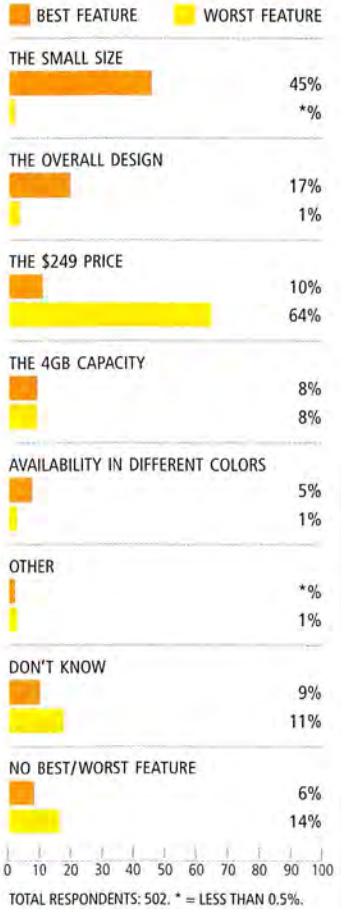
MACWORLD READER POLL

Thinking Small

Apple's new iPod mini may win raves from Mac fans for its eye-catching design and slender size, but its $249 price seems awfully steep to many Mac users—even those planning on buying the slimmed-down music player. And while the iPod mini has attracted the interest of some shoppers, the iPod remains the more popular music-player choice.

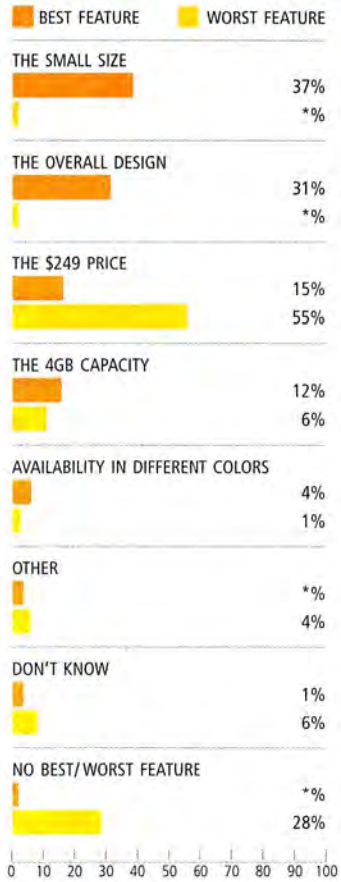
That's according to a Macworld Reader Panel survey of 502 *Macworld* readers selected at random. The survey, which was conducted by market-research firm Karlin Associates a few weeks after January's Macworld Expo, measured reactions to the products unveiled by Apple at the biannual trade show.—PHILIP MICHAELS

What are the one best and one worst features of the iPod mini?



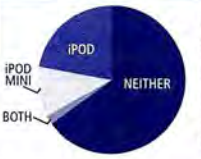
TOTAL RESPONDENTS: 502. * = LESS THAN 0.5%.

Among likely buyers, what are the one best and one worst features of the iPod mini?



TOTAL RESPONDENTS: 67 (PEOPLE LIKELY TO BUY AN IPOD MINI WITHIN 6 MONTHS). * = LESS THAN 0.5%.

Which of the following music players do you plan to buy during the next six months?



iPOD	22%
iPOD MINI	11%
BOTH	2%
NEITHER	65%

TOTAL RESPONDENTS: 502.

More Info:

The full results of our survey—including what panelists thought about GarageBand and iLife '04—are at Macworld.com.

www.macworld.com/2004/04/features/exposurvey

HARDWARE, SOFTWARE PRODUCTS PUMP UP THE VOLUME

Mac Audio Amps Up

Apple isn't the only company making noise with professional audio and MIDI products. Plenty of other hardware and software products that debuted at January's NAMM music-industry trade show should pique the interest of Mac-using musicians.

> Arturia (www.arturia.com) reissued the classic **minimoog V** ($199) and **CS-80V** ($249) software synthesizers.

> Minnetonka Audio Software's (www.minnetonkaaudio.com) PC-only **SurCode** surround-encoding tool should make its Mac debut by the time you read this.

Arturia's CS-80V software synthesizer

> Garritan Orchestral Libraries' (www.garritan.com) $249 **Garritan Personal Orchestra** includes samples of a symphony orchestra's major instruments (strings, brass, woodwinds, and percussion); of a Steinway concert grand piano; and of a Stradivarius violin. You can use samples as solo instruments or layer them in ensembles.

> FXpansion (www.fxpansion.com) announced two DVDs of drum samples for use with its **BFD** drum-library instrument. Synthogy (www.synthogy.com) introduced **Ivory**, a $349, 6GB package with 3,500 high-quality grand-piano samples.

Ego Systems' QuataFire 610

> Apogee (www.apogeedigital.com) led the charge of FireWire-based audio interfaces with its high-end **AD-16X** ($3,594) and **DA-16X** ($3,495). T.C. Electronic (www.tcelectronic.com) showed off its $1,795 **PowerCore FireWire**, with four Motorola DSP chips. The **QuataFire 610**, from Ego Systems (www.esi-pro.com), has dual mike-line preamps.

> Lynx Studio Technology (www.lynxstudio.com) announced that its **AES16 I/O** cards ($695 and $795) now have full OS X support, as well as the standard PCI and new 3.3V PCI-X interfaces.—DAVID LEISHMAN

ANOTHER COREL APP ABANDONS THE MAC

CorelDraw Erases Mac Support

CorelDraw Graphics Suite 12 introduces new sketching capabilities and drawing tools while enhancing suite-wide integration. That's of little consequence to Mac users, though. The latest version of the graphics bundle from Corel (www.corel.com) won't run on the Mac.

Corel opted to drop Mac support from the CorelDraw Graphics Suite—which includes CorelDraw, Corel Photo-Paint, and Corel RAVE—after the company's research showed that only 3 percent of the suite's users were running the program on a Mac.

But Corel doesn't plan on leaving that 3 percent entirely in the cold. "Support is still available for people on the Mac who've bought the CorelDraw suite," says Nick Davies, Corel's director of graphics products.

This is the second time in the past year that Corel has pulled one of its programs off the Mac platform (see "Not a Pretty Picture"). In May 2003, Corel announced that it was dropping future Mac development of Bryce, the 3-D–landscaping and –animation software. (As with CorelDraw, users of Bryce 5 for Mac continue to receive tech support from Corel.) When it stopped developing Bryce for the Mac, Corel said it would continue to support the Mac platform with its other graphics products—including CorelDraw Graphics Suite.

Still, the company insists that it isn't abandoning the Mac market, and says it will continue to develop its remaining Mac products, which include Painter, KnockOut, and KPT Collection. After all, Davies says, 50 percent of Painter users are on the Mac. "It's critical for us to continue development of Painter," he adds. "The Mac community is very important."—TERRI STONE

Not a Pretty Picture

Over the past four years, Corel's relationship with the Mac has gone through some ups and downs.—PHILIP MICHAELS

> **April 2000:** Corel buys four MetaCreations apps—Painter, Bryce, Kai's Power Tools, and KPT Vector Effects.

> **May 2000:** Corel ends development of WordPerfect for Mac.

> **January 2001:** Corel unveils a new corporate strategy that includes a renewed focus on the Mac platform.

> **July 2001:** Corel unveils its Procreate brand of graphics programs aimed at creative professionals.

> **November 2001:** With the release of stand-alone versions of CorelDraw 10 and Photo-Paint 10, Corel claims to have more OS X–compatible graphics products than any major software vendor.

> **July 2002:** Corel criticizes OS X–adoption rates in a *Wall Street Journal* article.

> **April 2003:** Corel retires its Procreate brand.

> **May 2003:** Corel announces no future Mac development for Bryce.

> **January 2004:** Corel releases CorelDraw Graphics Suite 12, with no plans to produce a Mac version.

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MA/MW 4/04

APPLE RESPONDS TO iPOD, POWERBOOK, iBOOK WOES

Mac Users in a Fix

Macs routinely win plaudits for their reliability and high quality. But a recent spate of hardware glitches and part failures among iPods, 15-inch PowerBooks, and iBooks have some Mac users scratching their heads. To be fair, these problems affect only a fraction of the hundreds of thousands of computers Apple ships. And the company continues to earn a reputation for delivering high-quality products—the December 2003 issue of *Consumer Reports* ranked Apple tops in reliability and support among computer makers. Still, for Mac users dealing with these flaws, it's important to know what's causing their hardware woes—and how to get those problems fixed.—PHILIP MICHAELS

The iPod's Battery Blues

The Problem: Some owners of older iPods have noticed that over time the music player's battery holds less and less of a charge—and in some cases, dies completely. (Lithium-ion batteries such as the one in the iPod typically have a lifetime of 300 to 500 recharges, according to the informational Web site BatteryUniversity.com.) Perhaps the most-documented instance of this problem can be found at www.ipodsdirtysecret.com, which features a movie by New York artist Casey Neistat chronicling his efforts to get his iPod repaired.

LEO ESPINOSA

Apple's Response: Apple used to charge $255 to replace the battery in an out-of-warranty iPod—which, when you factor in shipping fees, costs nearly as much as a new iPod. However, in November, Apple launched a $99 battery-replacement program for out-of-warranty iPods; it also announced a $59 warranty extension. iPod owners with a do-it-yourself streak can buy internal iPod batteries from resellers such as ipodbattery.com and PDASmart.com for $49 to $59—but since the iPod's case isn't designed to be popped open, this isn't the easiest of repairs.

Web Help: www.iPodBatteryFAQ.com is an excellent source of information and Web links.

PowerBook Spotting

The Problem: Two frequent complaints about the 15-inch PowerBook began to pop up on Mac discussion boards after the laptop's fall 2003 release: latches on some PowerBooks wouldn't catch when the laptop was shut, and faint white spots began appearing on PowerBook displays. The latch problem was a manufacturing flaw, while the white spots appear to be caused by spacers in the casing behind the PowerBook LCD screen that put pressure on the display over time.

Apple's Response: Apple has acknowledged both flaws and is repairing PowerBooks sent in under its warranty program. The problems appear limited to early shipments of 15-inch PowerBooks—during a January briefing with financial analysts, Apple executives said current PowerBook shipments aren't affected by these problems.

Web Help: You can fix the latch problem on your own by bending the latch into place, according to a fix posted on Apple's discussion board at http://tinyurl.com/2loxd.

The iBook's Logical Flaws

The Problem: Some iBooks made between May 2002 and April 2003 have experienced a specific part failure on the laptop's logic board. Owners of these iBooks have noticed scrambled or distorted video, lines across the display, or—in the most extreme cases—a completely blank screen.

Apple's Response: In late January, Apple unveiled a program to repair the logic-board problem for free for specified iBook models. The company also plans to offer refunds to owners of the affected models who have already paid for repairs. "Our first priority is to take care of our customers," said Philip Schiller, Apple's senior vice president of worldwide product marketing.

Web Help: Apple has set up a logic board repair program FAQ—which includes the serial numbers of affected models—at www.apple.com/support/ibook/faq/.

INPUT-DEVICE BEAT

IntelliScanner OCR Pen, from Intelli Innovations (www.intelliswi.com): USB-based highlighter-shaped scanner reads text and barcodes into any Mac app ($349).

IRISPen Express, from IRIS Group (www.irislink.com): USB-based pen scanner enters text and numbers into any application ($130).

Key Composer, from Contour Design (www.contourdesign.com): Keystroke and macro-creation program added to version 2.5 of the Mac driver for the $130 ShuttlePro multimedia jog-shuttle controller (free).

MacNTouch Gesture Keyboard, from FingerWorks (www.fingerworks.com): Ergonomic keyboard combines touchpad, gesture-input command capabilities, and Zero-Force ergonomic keyboard on one smooth surface ($259).

Tactile Pro Keyboard, from Matias (www.halfkeyboard.com): Re-creation of Apple's original Extended Keyboard adds Option Key Caps feature, which prints option-key symbols on each key ($100).—COMPILED BY PHILIP MICHAELS

INTERNET BEAT

Lasso Studio 7, from Blue World Communications (www.blueworld.com): Web-site database integration tool adds compatibility with latest releases of Macromedia Dreamweaver, Adobe GoLive, and Blue World Lasso Professional ($299; upgrade, $199).

PictureTalk Enterprise Conference Server and **PictureTalk Hosted Services**, from Pixion (www.pixion.com): Updated Web-conferencing apps offer compatibility with Safari, iCal, Entourage, and iChat AV (contact Pixion for prices).

SightSpeed Video Messenger 2.0, from SightSpeed (www.sightspeed.com): Videoconferencing software adds OS X support to offer cross-platform video chats (monthly, $5; annual, $50).

Unison, from Panic (www.panic.com): Newsreader displays Usenet newsgroups for OS X users ($25).—COMPILED BY PHILIP MICHAELS

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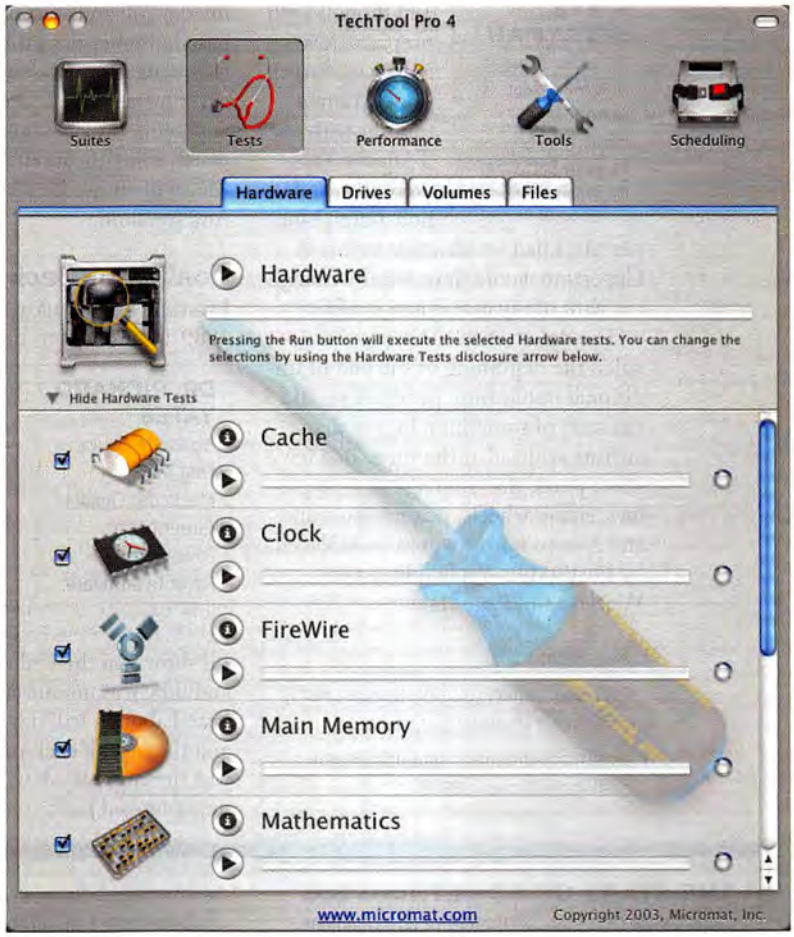

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MACWORLD READERS' FIRST MAC MEMORIES

Every Mac User Has a Story

It could have been anywhere—at school, at work, or even at a friend's house. But wherever it happened, if you're a true Mac fanatic, you can recall every last detail about the first time you laid eyes on a Macintosh. With the Mac celebrating its 20th anniversary, *Macworld* readers have felt particularly nostalgic, eager to share memories of when they became Mac users.—MACWORLD STAFF

Like Father, Like Son Antonio Lopez (left) of Fort Worth, Texas, gets a head start on forming his early Mac memories with his father, David, and *Macworld*.

It's about Freedom

STEVE MERRYMAN
Greenacres, Washington
First Mac: Mac IIfx
Current Mac: Power Mac G4
Favorite Software: PageMaker, Painter

It was my last year in Central Washington University. My major was graphic design, and though I felt prepared to start a brilliant career in the coming months with my T square, rapidographs, and non-photo blue pencils, I had no idea that events in Cupertino would dramatically change the path of my career and my life.

The debut of the Macintosh signaled the beginning of the end of traditional publication production, and the start of something bigger than anyone realized at the time. In a few short years, the language of type galleys, sizing wheels, waxers, pasteups, and X-acto knives would be replaced by PostScript, AppleTalk, LaserWriters, and PageMaker.

More Info:

Got a Mac memory you'd like to share? Post it online in our Macworld.com forums.

www.macworld.com/forums/ubbthreads/postlist.php?Board=UBB25

In 1992, I bought my first Mac for freelance work. It was a Mac IIfx, the racehorse of the Mac line. It was that computer that freed me to quit my day job and start my own home-based graphic-design business the following year. Before the Macintosh, working at home was inconceivable, and being my own boss was not even worth thinking about. For me, the Mac will always be about possibilities. And freedom.

Don't Look Back

DR. RICHARD YATES
Papillion, Nebraska
First Mac: Macintosh Quadra
Current Mac: PowerBook G4
Favorite Software: iLife '04

I started a pulmonary fellowship in 1989 and wanted to become more computer savvy. I told my mentor that I was going to a two-day computer course to learn DOS. He said, "Fine, but when you get done, come back and I'll show you the real computer world and how we run our lab with them." I lasted about a half day in the classes and then came back to see how he was running his lab with Macs. I have never looked back.

Typesetters, Begone

CAROLINE EVENINGSTORM
Lago Vista, Texas
First Mac: Mac Plus
Current Mac: Power Mac G4
Favorite Software: PageMaker

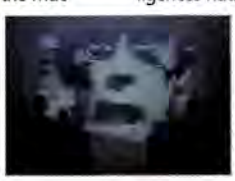
I was working as an art director for a medical ad agency. We contracted out all of our typesetting. I had done typesetting myself on a huge ol' Compugraphic with the film fonts and drum, so I had a clear idea of what was and wasn't possible. Unfortunately, when you weren't the one behind the keyboard, you often fell prey to temperamental or lazy typesetters who found bitter joy in saying "That's not possible" to the smallest challenges.

The woman who walked in with the Macintosh and demonstrated its mind-boggling capabilities was my heroine. I was sold. The vision of excommunicating typesetters from my life and taking total control of design was a spiritual experience. I resigned from the agency and borrowed the money to buy a cutting-edge Mac Plus, a LaserWriter II, and eventually the first black-and-white 360-dpi scanner on the northeast side of Houston. □

THE START OF SOMETHING BIG

ANNE-MARIE LAMONDE
Vancouver, British Columbia, Canada
First Mac: Macintosh 512K
Current Mac: PowerBook G4
Favorite Software: MacDraw, MacPaint, iMovie

I watched an Orwellian, Big Brother TV advertisement directed by Ridley Scott. I bought the idea that the Mac would free us from the inevitability of *1984*. I ogled the slick new—albeit costly—Macs. Nevertheless, while saving every penny, I held out until September for the Mac 512K. I wasn't disappointed. I discovered that the communication barriers I had experienced between my pliable, creative mind and the rigid, inflexible computer brain had suddenly been lifted. Finally, two intelligences had arrived at a meeting of minds! And it was the beginning of a beautiful friendship.



Today, I enjoy every feature of my PowerBook G4, and I'm amazed by the lightning-fast ability of the G5 in our lab. Compressing video to DVD couldn't be more exciting and empowering.

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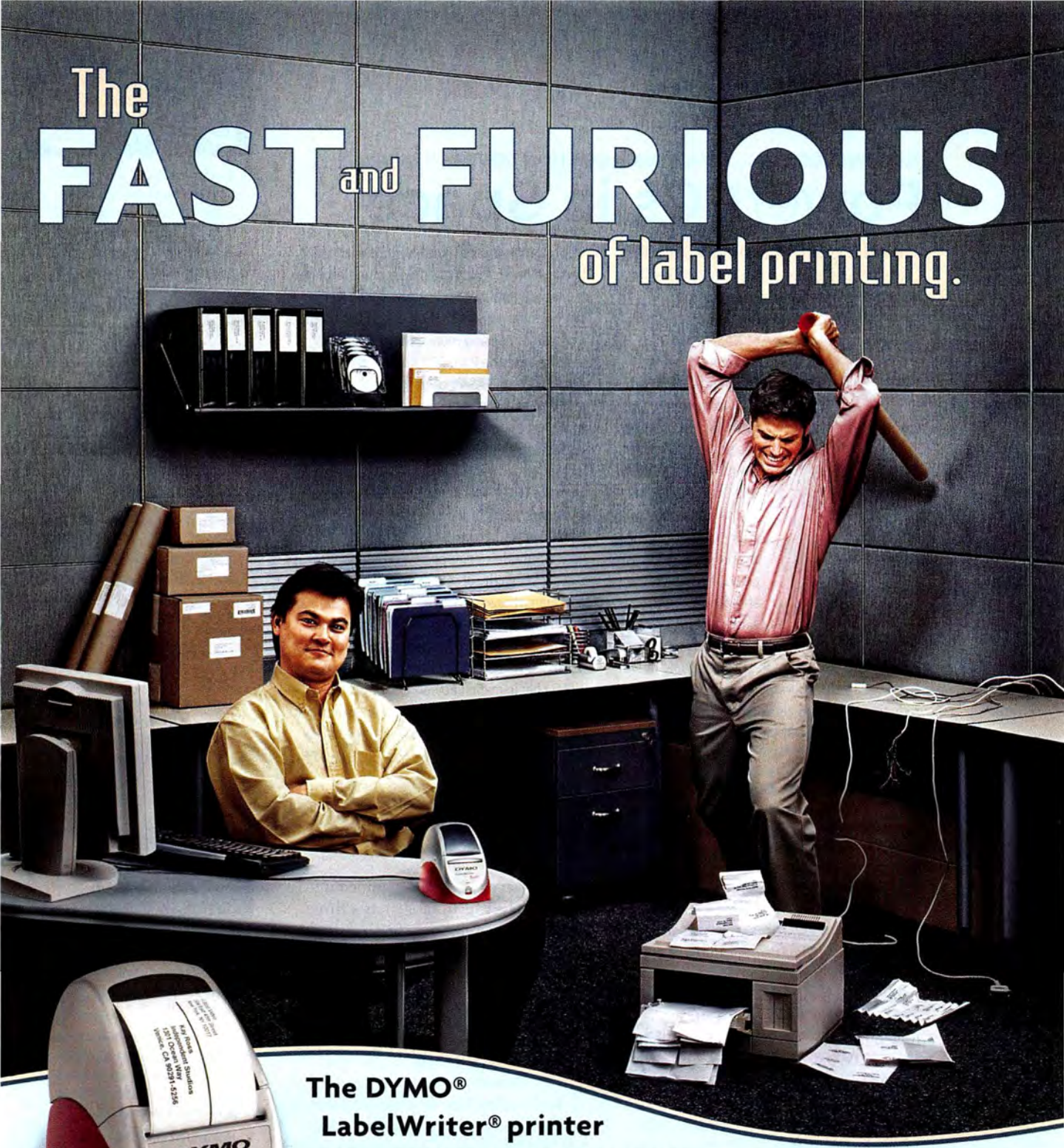

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MAC CHIP CONTROLS MARS EXPLORATION ROVERS

PowerPCs in Space

Maybe you've got a distant relative across the country. Your Mac can do you one better—it has distant cousins on another *planet*.

The computer processor serving as the brains of NASA's two Mars Exploration Rovers, Spirit and Opportunity, is a version of the PowerPC, the chip that has powered Macs for the past ten years. Spirit and Opportunity landed on Mars in January 2004 to search for signs that liquid water—and perhaps a habitat suitable for life—once existed on the planet.

The flight-control board the rovers use contains a Rad6000 processor, developed by the Air Force Research Laboratory. The Rad6000 is a radiation-hardened version of the RS/6000 RISC chip introduced by IBM in 1991. Spirit and Opportunity require radiation-hardened chips because harsh radiation, present in interplanetary space and on Mars's surface, can randomly flip ones and zeroes to their opposites, corrupting data or causing more-serious damage.

Why base the Rad6000 on an older chip? Chalk it up to NASA's need for reliability over raw processing power, and to the time it takes to design and test everything before sending a spacecraft to Mars.

Modern PowerPC chips are very much involved in the Mars mission. More than half of the members of the science team use Mac portables. And Power Macs, including many dual-G5 models equipped with Cinema HD Displays, play a critical role in preparing images and animations of Mars for public consumption.

On future missions, NASA plans to use a flight-control board designed around a radiation-hardened version of the PowerPC 603. Apple used a 603 chip in its first PowerPC Mac portables, the PowerBook 5300 series and the PowerBook Duo 2300c, released in 1995.—HENRY BORTMAN

DISCS BECOME DUAL-SIDED, DUAL-LAYER

Double-Duty DVDs

Burning DVDs off a computer used to be a job for only highly skilled video pros. But thanks to advances in hardware and software, any Mac user can create a DVD with a minimum of fuss. And ongoing technological developments promise to increase just how much you'll be able to burn onto a DVD.

Currently, computer DVD burners can record only to single-layer, 4.7GB DVD media, whether it's a DVD-R, DVD-RW, DVD+R, or DVD+RW disc. Kano Technologies (www.kanotechnologies.com) has come out with Kano ArchivMedia DVD+R discs, the first double-sided DVD+R media to hit the market. ArchivMedia brings the total capacity of a disc up to 9.4GB.

But dual-layer burners, not dual-sided, are necessary to get the most data on DVD media. All DVD burners on the market today can put a fixed amount of information on one side of a DVD, while a professionally replicated disc can actually have two layers stamped onto it. Dual-layer technology lets a three-hour Hollywood movie fit on a single DVD. Later this year, you can expect to see dual-layer DVD burners working their way into computers, pumping up the capacity of single-sided discs to 8.5GB.

Meantime, however, single-layer technology isn't standing still. A number of companies, including Kano, LaCie, Plextor, and EZQuest, have begun selling 8× DVD burners, which not only cut DVD recording times to around 8 minutes—half the time of previous models—but also double CD-recording speeds. Even though the external versions of these drives aren't supported by iDVD, and the internal versions (such as Pioneer's DVR-A07 drive) aren't supported by Apple yet, you can bet that as these faster drives become more common, they'll start showing up inside Power Mac G5s.—JONATHAN SEFF

CREATIVE BEAT

FontAgent Pro 2, from Insider Software (www.insidersoftware.com): Font-organization, -repair, and -management software features new auto-activation and multiple-font–viewing capabilities, and it adds Rendezvous support to Workgroup edition ($90; upgrade, $50. Workgroup edition: $140; upgrade, $75).

FontDoctor 6.0, from Morrison SoftDesign (www.morrisonsoftdesign.com): Font-diagnostic and -repair tool adds OS X 10.3 optimization, a simpler user interface, and faster diagnosis and repair ($70; upgrade, $20).

K4 Publishing System 5.0, from Managing Editor (www.maned.com): Professional publishing workflow system improves XML support and adds support for Adobe InDesign CS and Adobe InCopy CS (contact Managing Editor for pricing).

Snapz Pro X 2.0, from Ambrosia Software (www.ambrosiasw.com): Screen- and video-capture utility features faster full-screen video capture ($69; upgrade, $20).—COMPILED BY PHILIP MICHAELS

IMAGING BEAT

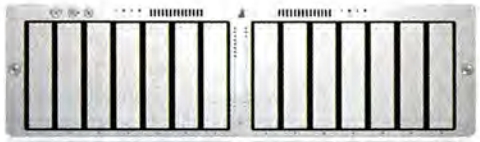
Concord Eye-Q4360z, from Concord Camera (www.concordcam.com): 4-megapixel digital camera offers 3× optical and 6× digital zoom ($199).

Coolpix 8700, from Nikon (www.nikonusa.com): 8-megapixel digital camera with 8× optical Zoom-Nikkor lens can produce 3,264-by-2,448-pixel images ($1,000).

Nikon D70, from Nikon (www.nikonusa.com): 6.1-megapixel digital SLR camera features an optional 18–70mm AF-S DX f/3.5–4.5G IF-ED Zoom-Nikkor lens ($999; with lens, $1,299).

Primatte Chromakey 2.0, from Digital Anarchy (www.digitalanarchy.com): Chromakey compositing plug-in for Adobe Photoshop adds blue- and green-screen masking technology to the Mac ($299; upgrade, $129).—COMPILED BY PHILIP MICHAELS

Industrial strength protection for industrial strength Mac users



Apple Xserve RAID

Apple Xserve

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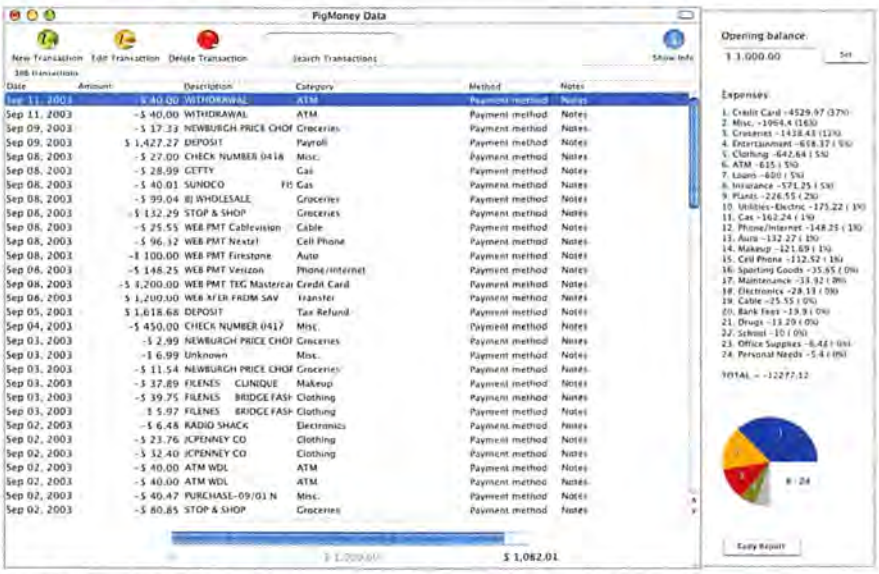
Personal Finance Software

Five Programs That Make Sense of Your Dollars

BY JEFFERY BATTERSBY

Whether you're stuffing your life savings into a mattress, dropping every dime into a savings account, or spending your money as fast as you make it, you need to know where your cash is coming from and where it's going.



Easy Money PigMoney's simple feature set is a perfect match for beginning savers.

We took a look at five personal finance programs—SweetCocoa Software's PigMoney 1.1, Snowmint Creative Solutions' Budget 4.3.3, Reilly Technologies' Moneydance 2003, Max Programming's iCash 1.4.3, and Intuit's Quicken 2004—most of which include excellent features for a wide variety of people. Unless otherwise noted, all the programs we reviewed print checks, create financial reports, and provide functions for balancing your checkbook.

In the end, Quicken remains the program you can bank on, but PigMoney and Budget are excellent alternatives for people who don't require all of Quicken's specialized financial features.

PigMoney

If a very basic Excel spreadsheet is the first step in financial record-keeping, SweetCocoa Software's PigMoney 1.1 is the second. It's a perfect solution for younger savers who are just starting to keep an eye on all their baby-sitting or lawn-mowing money.

You create new transactions in PigMoney by clicking on one of the program's three main transaction buttons—New, Edit, and Delete—and then entering details, such as payment amount, payee, and category, in the transaction window that appears. PigMoney has an autocomplete feature similar to Quicken's; it remembers items you've entered and enters them automatically as you begin to type them again. As you enter each new transaction, a small window displays a list of expense categories sorted by the amount spent; below that is a pie chart detailing each of your expenses by category. The amount of information in the window can swamp PigMoney's interface (see "Easy Money"). If you have many different expenses, the expense list often ends up disappearing behind the corresponding pie chart. However, this isn't a problem for finance amateurs with simple budgets.

PigMoney has no check-printing capabilities, includes no way to balance a checkbook, and, like many of the programs we looked at, made importing financial information we downloaded from a real bank account a frustrating experience (see "A Note about Importing Financial Data"). Beginning budgeters don't usually need to print checks and import bank transactions, but if you're setting up your first real bank account, being unable to reconcile PigMoney's account data with your monthly bank statement is a serious problem. So as good as the program is for people in the earliest stages of saving, it's not currently capable of expanding to meet growing financial needs.

Budget

Of all the programs we looked at, Snowmint Creative Solutions' Budget 4.3.3 was the most unique. Unlike most programs, which use a ledgerlike check-register metaphor, Budget uses a conceptually vivid envelope metaphor, providing the digital equivalent of cashing your paycheck and then distributing the money to different expense envelopes (see "Envelope, Please!").

To set up your budget within Budget, you create envelopes for your bank accounts and each of your expense categories. Every time you spend money, Budget transfers it from your available income envelope to the appropriate expense envelope. If you have regular expenses such as auto insurance or rent, Budget will automatically distribute a portion of your paycheck to the proper envelope each time you get paid. For example, if your rent is $1,000 per month and you get paid $700 per week, Budget drops $250 into the Rent envelope every time you get paid. The beauty of Budget—and the way it differs from other financial programs—is that it actually shows you how much money you have available to spend, as opposed to showing your current bank balance.

To help you organize similar items, Budget allows you to create group envelopes, which contain a collection of other envelopes. So if you want to keep your telephone, gas, electric, and water bills in one place, you can create a Utility envelope that contains separate envelopes for each of your utilities. Once you've created a group, you can easily add existing envelopes to it by dragging and dropping them on top of the group. This useful feature keeps the program from getting visually disorganized, which could be a problem if you have a large number of envelopes.

Budget includes very few reporting tools, but it does give you a quick overview of your current financial status. Selecting a group envelope and then clicking on the Stats button brings up a window in which you can

26 Personal finance software
Budget 4.3.3
iCash 1.4.3
Moneydance 2003
PigMoney 1.1
Quicken 2004

29 Publishing software
RagTime 5.6.5

30 E-mail servers
4D Mail 5.3.2
CommuniGate Pro 4.1.8
Kerio MailServer 5.7.4
PostOffice 3.5.3

34 Desktop computer
20-inch iMac G4

35 Animation application
MotionBuilder 5

36 Desktop manager
You Control 1.0

36 MP3 stereo component
Slim Devices Squeezebox

37 iPod speakers
Altec Lansing inMotion

38 PDF utility
PDFpen 1.1

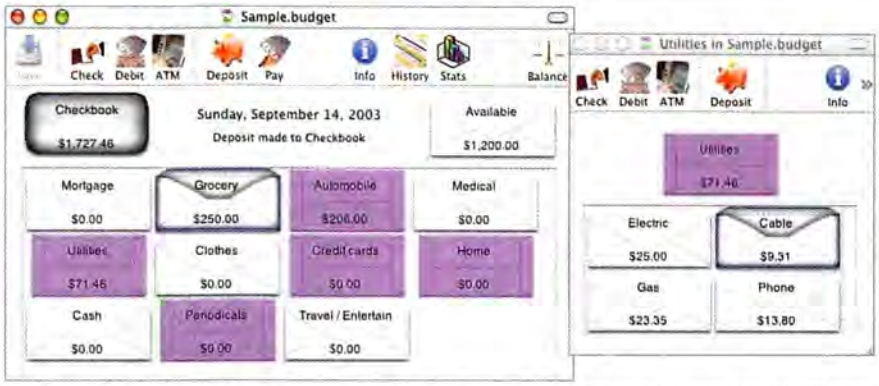
39 Flat-panel monitor
DoubleSight DS-1500

41 The Game Room
Belkin Nostromo SpeedPad n52, Nanosaur 2: Hatchling, NoLimits, Star Trek Elite Force II, X2 Wolverine's Revenge

46 Mac Gems
fnSwitch, iBeeZz, Netflix Freak, Pacifist, uControl

view either a bar graph or a line graph of that specific group's expenses. If you select the window's Table view, you can quickly see an envelope's deposits and expenses, as well as the total percentage of your income that a particular envelope is eating up. Unfortunately, aside from these very basic printed reports, Budget's reporting capabilities are pretty thin. It doesn't have any year-end tax reports or any easy way to determine the current value of all your assets. If you require these features, you may want to consider another application.

Budget's only other shortcoming is fairly minor: its weak stock-tracking capability is simply no match for Quicken's. But when it comes to keeping track of your money according to the way you've earmarked expenses, Budget is superb. It's a perfect option for people who prefer to plan spending and saving but don't have many investment or reporting considerations.



Envelope, Please! Budget's unique envelope metaphor makes it easy to see exactly how much cash you have. You can also organize your expenses by creating group envelopes, which contain other envelopes.

Moneydance

With its wide range of features, Reilly Technologies' Moneydance 2003 is the only program we looked at that was nearly as complete as Quicken. Like Quicken, Moneydance uses a check-register format for data entry and provides fairly extensive support for tracking a wide variety of stocks and mutual funds. The program supports plug-ins, which allow developers to extend the program's capabilities. Even though Moneydance has a wealth of features, its user interface was confusing and occasionally quirky.

Once you've created your first account file, Moneydance opens a customizable navigation window (the documentation refers to it as a home page), which displays your current net worth, a calendar of upcoming transactions, a list of overdue transactions, and current currency-exchange rates; from here you can access all your bank and stock accounts with a single click.

This home page is where the program's first quirk appears. Clicking on any of your accounts in this window typically opens a register where you can view account information and enter new transactions. But clicking on the item for stock prices opens a window where you edit information on currency-exchange rates. The program actually presents this as a feature, since it treats all your stocks as "currencies." But every new stock you enter appears at the bottom of the currency list, and the window gives no indication that it's there. For most users, especially those who have no interest in currency rates, this is a very confusing way to handle stocks. In fact, we had to call the company to figure out that this "feature" wasn't a bug.

We did find a bug when we tried entering a new transaction in the account window, which offers a checklike interface for entering new transactions. However, when we selected the account we wanted to use for the payment from a drop-down menu, no account name appeared in the account field—it remained blank. Reilly Technologies acknowledged the bug and said that it plans to fix this problem in the near future.

Moneydance categorizes your transactions in an unusual and confusing way. Unlike Quicken, which treats categories and accounts as separate entities, Moneydance treats every category as an account, so if you want to get detailed information on where you're spending your money, you need to create accounts for gas, groceries, entertainment, and the like. The strange thing about this is that after you've made a few payments, the account displays a positive balance. When it comes to expenses, this is

continues

Personal Finance Software Compared

COMPANY	PRODUCT	MOUSE RATING	PRICE	OS COMPATIBILITY	CONTACT	PROS	CONS
Intuit	Quicken 2004	●●●●	$70; upgrade from previous versions, $50	9X	800/954-2558, www.intuit.com	Most comprehensive financial package available; excellent stock-tracking features; integration with iCal.	Very little change from earlier versions; bug in reporting capital gains of short-sold stocks.
Max Programming	iCash 1.4.3	●	$25	9X	support@maxprog.com, www.maxprog.com	Beautiful user interface; dozens of predefined accounts and categories.	Confusing transaction entry; weak integration between the program's various functions; difficult to check bank account against iCash records.
Reilly Technologies	Moneydance 2003	●●½	$30	X	support@reilly technologies.com, www.moneydance.com	Comprehensive financial program; extensible.	Several bugs detract from its overall usability; no way to create transaction categories.
Snowmint Creative Solutions	Budget 4.3.3	●●●	$30	X	info@snowmintcs.com, www.snowmintcs.com	Good for keeping a personal budget; organizes your money before you spend; unique, intuitive interface.	Weak stock tracking and access to stock-related financial information; weak asset and tax-reporting capabilities.
SweetCocoa Software	PigMoney 1.1	●●●	$13	X	sweetcocoa@mac.com, http://homepage.mac.com/sweetcocoa	Simple interface; excellent real-time graphs and charts; autocompletion for previously entered information.	Difficult to import downloaded banking transactions; difficult to reconcile bank statements with PigMoney account data.

downright absurd; it's the kind of accounting logic that personal accounting programs should avoid or, at the very least, hide from those of us who tremble at the thought of balancing a checkbook.

Finally, Moneydance ships with no predefined accounts, so you'll have to create them all from scratch. Combine this with the program's bugs and quirks, and what you get is a frustrating user experience.

iCash

Max Programming's iCash 1.4.3 is a conundrum: an elegant-looking Aqua application that's extremely confusing to use. iCash consists of a single window with five tabs at the top—Balance, Accounts, Transactions, Queries, and Reports. You access all of the program's features by clicking on the tabs. Clicking on the Balance tab and then clicking on a specific account or category gives you a quick view of how much money you have in an account or how much you've spent on a specific expense category.

Like PigMoney, iCash provides no easy way to balance your bank accounts. You can put a check mark in the boxes next to each transaction to signify that a check has cleared on your bank statement. But there's no way for you to enter your bank's beginning and ending balance information and then verify that what you've entered in iCash matches your bank statement. We got the sense that this application was only half finished.

iCash ships with a set of predefined bank accounts and expense-category settings. The trouble begins when you start to create *any* new transaction. Try to enter a new transaction and you'll discover that there's no payee field, so if you want to keep track of who gets your money, you'll need to put that information in the notes field. Try to create a transaction for which you have no category defined, and you'll have to jump back to the Accounts tab, create the category, and then jump back to the Transactions tab to re-create the initial transaction. This amounts to a huge hassle, especially if you're just beginning to set up the program. And while iCash is aimed at users who don't have complicated banking needs, the program itself seems too complicated.

Shortsighted Although Quicken is the most full-featured finance program in this roundup, it isn't perfect. Quicken reports incorrect capital gains when you sell stocks short and then buy them back to cover the short.

A NOTE ABOUT IMPORTING FINANCIAL DATA

Most banks now offer you the option of downloading all your financial transactions via your bank's Web site, either as text or in Quicken Interchange Format (QIF). As you might expect, Quicken can easily import data in its native format and as text—and it can even download your banking information directly from some financial institutions. But the other programs don't import data properly at all, and most require significant extra work after you've brought in the information. Unless you're using Moneydance, you can expect to perform a fair amount of text manipulation if you plan to import your banking data after downloading it from your bank—that is, if you can import it at all.

In short, if importing your financial data is a basic requirement for your personal financial package, stick with Quicken or Moneydance.

Quicken

Intuit's Quicken remains the preeminent personal financial program, the one that best suits users of all stripes and that almost all the other programs seek to emulate. There's a reason for that: Quicken is intuitively easy to use, and it provides an amazing collection of financial tools at a relatively low price.

Quicken 2004 is largely unchanged from previous versions of the program. New features include integration with iCal, which makes setting up reminders of upcoming transactions easy; an Emergency Records Organizer; and several tools for managing your stock portfolio, most of which link to online information (such as investment research and stock analysis) and all of which require an Internet connection. So unless you've been desperately waiting for these features, upgrading will be unnecessary.

The beauty of Quicken's new integration with iCal is the reappearance of transaction reminders outside the Quicken application. In the old days, before OS X, Quicken could remind you of upcoming financial events every time you fired up your Mac. Quicken 2004 automatically creates a calendar event in iCal that will remind you of an upcoming bill, whether or not you open Quicken. Note, though, that Quicken doesn't automatically set an alarm for the iCal event, so if you want notification of pending bills, you need to edit the iCal event to add the alarm.

Quicken's most significant new feature is the Emergency Records Organizer. This tool—a database in which you can track a wide variety of personal information—centralizes your most pertinent information in one location. You've probably got this data scattered all over the house or, worse, stored in your head: the location of your will, say, or your home owner's insurance-policy number. You can record all this information in the Emergency Records Organizer, and then print all or individual parts of the data for safe storage and emergency reference.

When it comes to financial-planning tools and investing, there's never really been any software comparable to Quicken. It still includes great tools for analyzing your personal cash flow or figuring out how much you can expect to save if you refinance your mortgage. But when it comes to investing, most of what's new in the program consists of links to data on the Quicken.com Web site. Granted, you can now access this information more easily from within the program, but in reality, the same information is available from a variety of Web sources, many of them free, regardless of whether you own Quicken—so why pay for the data? For most people, even though Quicken offers some integration of Web-based investment information, the new investment features aren't significant enough to warrant the upgrade price.

Also, we did confirm one fairly major bug in the program that will trouble you if you're an investor who likes to sell stocks short: Quicken doesn't report the capital gains accurately (see "Shortsighted"). Short-sell 1,000 shares of a stock at $3.00 and then buy 1,000 back to cover the short at $2.50, and Quicken's capital gains report states that you've realized a gain of 50 cents. It should be $500, a fact that could leave you feeling woozy when the IRS comes knocking at your door.

Macworld's Buying Advice

Quicken 2004 is by far the most comprehensive financial package available for the Mac, and on a feature-by-feature basis, it clearly leaves all the other applications in the dust. However, both PigMoney and Budget are good choices for people with less-complicated financial needs.

RagTime 5.6

Midlevel Publishing Package Marred by Poor Implementation

BY GALEN GRUMAN

The idea behind RagTime 5.6.5 is very appealing: business publishing software that provides midlevel page-layout capabilities, à la Adobe PageMaker, as well as word processing, charting, and spreadsheet tools. But the reality of RagTime 5.6.5 falls far short of its promise. While the program has several great features, it also has some incomplete ones, as well as some curious gaps and an awkward interface.

Jack-of-All-Trades

RagTime's most powerful feature is its object-oriented approach. Documents can contain all sorts of objects: text, spreadsheets, images, and drawings. Unlike in Microsoft Office or AppleWorks, all of a document's components are dynamic and can be changed and edited as needed. For example, a sales proposal could contain a live spreadsheet with editable formulas and data. Compare that with Microsoft Word, which can import a Microsoft Excel spreadsheet, essentially as an image, but doesn't let you edit spreadsheet data directly (you must use Excel to edit, and then refresh the Word file).

RagTime's word processing and spreadsheet features are comparable to AppleWorks' but not as capable as Office's. For example, there's no way to automate bulleted lists in RagTime, nor are there spreadsheet formulas for transactions such as mortgage payments and several other financial calculations.

RagTime can import Word and Excel documents, and it can export to Word, RTF, Excel, PDF, EPS, PICT, SYLK (an old spreadsheet format), and dBase formats. But during import, it ignores Word's page breaks and converts embedded pictures to in-line graphics, which flow with text and can't be kept in a static location, even if they were set to do so in Word. You must delete embedded images and reimport them in RagTime to place them precisely. Like Office, RagTime is cross-platform (as is its file format).

RATING: ♦♦

PROS: Mixes spreadsheets, text, drawings, and images into single documents; midlevel layout capabilities.

CONS: Confusing interface; lacks bulleted lists and the ability to link text boxes on the same page; poorly implemented page-layout features; expensive for a midlevel program.

PRICE: $699

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: RagTime, www.ragtime-online.com (available in the United States from ComGrafix, 800/448-6277, www.comgrafix.com)

RagTime also integrates some desktop publishing capabilities into its text- and picture-handling functions, going beyond typical word processors. You can place pictures precisely, set automated text wrap and hyphenation, and draw with Bézier and freehand tools. The typographic features are also quite sophisticated; they let you use word spacing, drop caps, and custom-size small caps.

The program also gives you access to CMYK four-color separations, so you can create documents that print on an imagesetter or another high-resolution output device. Finally, you can place images as independent objects, modify them, and wrap text around them far more easily than you can in Word. But due to RagTime's cumbersome, unintuitive interface, the process is not as easy as it is in QuarkXPress or Adobe InDesign.

Some Serious Flaws

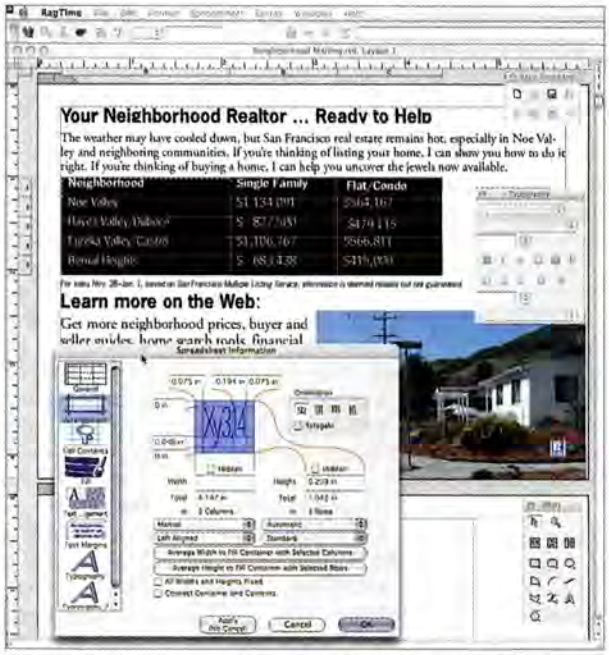
Despite its conceptual strengths, more is wrong than is right in RagTime. First, there's the confusing interface. A whole slew of functions is dumped into the Extras menu rather than being organized in a meaningful way—for example, page-oriented functions in a Page menu and spelling functions in an Edit or a Text menu. The name Extras is also misleading, since its tools are essential to the program, not add-ons. Similarly, an Auxiliaries label masks dialog boxes for important features such as style sheets; this may cause users to overlook important capabilities. And instead of a Zoom command, you have to find the Display Scale command.

RagTime uses palettes for basic functions but leaves much of the layout-oriented formatting and preferences to menus and multiple dialog boxes. The result is that finding features is difficult and requires using different interface approaches. The one bit of good news is that many of the dialog boxes provide visual guides that show how the features look when they're in use, so you can see what they actually do. They're much like the guides XPress and InDesign provide, but with larger, more readable images.

The program also lacks some basic capabilities. For example, you can't create multiple text boxes on a page and link text between them—text can link across pages but not within a page.

In addition, some features are poorly implemented. For instance, columns are an attribute of paragraphs, so if a paragraph's length changes, your layout also changes. Columns should be independent containers, not paragraph attributes. Similarly, hyphenation is treated as a character attribute, affecting text selections, not entire paragraphs as it should. And the tools for making layouts double-sided are practically impossible to find—I had to search the PDF documentation that comes with the program. This basic capability should not be hidden.

The on-screen refresh was inconsistent, with graphics often not redrawing until I moved off the page and then went back to it. And how I wished there had been a keyboard shortcut for importing text and images.



Visual Aid Although its interface is often clunky, RagTime 5.6.5 provides visually rich dialog boxes that help make some features easier to understand.

Finally, there's no printed documentation. RagTime comes with a PDF manual, but it's slow to search and navigate; a paper copy with a good index would be much more useful.

Macworld's Buying Advice

Even if RagTime 5.6.5 were a brand-new program—which it isn't—it shouldn't be such an unintegrated, unevenly implemented, and overpriced hodgepodge. The concept is solid; business users need an integrated word processing and page-layout program that makes it easy to create documents for presentations, price sheets, reports, and so on.

But until RagTime rethinks the program's interface, streamlines its operations, and fixes its many deficits, business users should stick with Office or AppleWorks, despite those programs' primitive layout capabilities, and should rely on InDesign or XPress for documents that need professional-level layout tools. I'd love to sing RagTime 5.6.5's praises, since there's a real need for this kind of program. Instead, I have to sing the blues. □

E-mail Servers

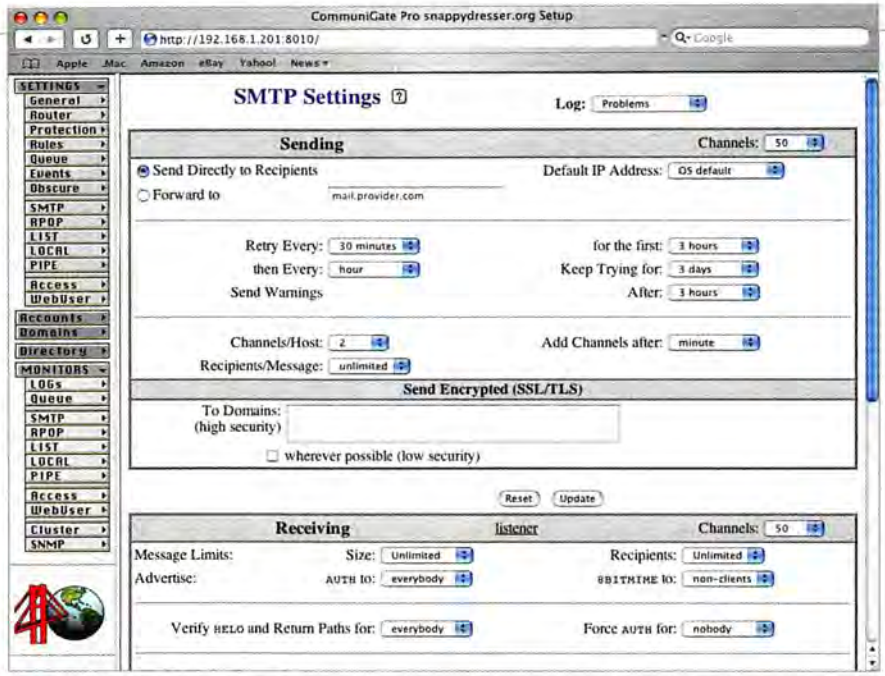
Four Software Packages for OS X Help You Deliver Your Message

BY MICHAEL GENRICH

To an organization, e-mail is arguably the most important Internet service. It cuts down the costs and hassle of communicating with people around the world. But if you want more flexibility and control of your e-mail than your Internet service provider can give you, you'll need to run a mail server on your network.

At the most basic level, a mail server helps send and deliver e-mail messages. It accepts e-mail messages from people who have e-mail accounts on the server (your users), and figures out whether to deliver the messages to another user within your organization or to ask another mail server somewhere on the Internet to accept them. It also accepts e-mail messages from other mail servers on the Internet, and it decides whether to deliver them to users on your server, reject them as undeliverable or unwanted, or relay them to yet another mail server for delivery assistance. A mail server need not be on a dedicated machine—many organizations run e-mail, Web, and FTP services from one computer—but the more RAM your mail server has available to it, the faster and more efficient your e-mail service will be.

The stability of OS X makes it a fine platform for mail servers—it's far better than OS 9, which has less-stable memory management. We evaluated four mail-server software packages available for OS X: 4D's 4D Mail 5.3.2, Kerio Technologies' Kerio MailServer 5.7.4, Stalker Software's CommuniGate Pro 4.1.8, and Tenon Intersystems' PostOffice 3.5.3. (Another mail server, Eudora Internet Mail Server, was released too late for inclusion in this review.) We also weighed the benefits of buying one of these products against those of using the mail-server software that ships with OS X (see "Built-in Alternatives").



Crowded House CommuniGate Pro's administration interface packs a lot of power into a tight space.

To simulate a medium-sized business setting, we tested each product on a Power Mac G4 by creating 50 e-mail users, a handful of mail aliases, and a few mailing lists (on the mail servers that support them). While all four servers performed basic mail-server operations without fail, Kerio MailServer's and CommuniGate Pro's advanced features make them the best of the bunch.

The Basics

Modern mail servers should let users send and receive e-mail from a variety of e-mail clients—such as Qualcomm's Eudora, Microsoft Entourage, or Apple's Mail—and they should communicate with other servers using recognized Internet protocols. All the servers we reviewed performed these tasks very well.

With the Internet becoming a much less trustworthy place, however, a mail server also needs to protect itself against unauthorized use, spam, and viruses. But it can't completely shut itself off from the world, as telecommuters and other travelers often need to send and receive e-mail through it, either via a secure authorized connection or through a Web interface. The more flexible your mail server, the happier you and your users will be.

Setting It Up

All four products were easy to install. After installation, it's time to set up your new mail server using its administration interface. MailServer's Administration Console was a wonderfully intuitive, easy-to-use OS X application. You can control all of MailServer's features through its Administration Console, which you can install on a remote machine so administrators don't need to be on-site to monitor the server and make changes. Of the four servers we reviewed, MailServer will give you the least setup trouble.

4D Mail's administration interface is the 4D WebStar Launcher's Admin Client. This is also a well-designed and easy-to-use OS X application. 4D Mail is divided into

E-mail Servers Compared

COMPANY	PRODUCT	MOUSE RATING	PRICE	OS COMPATIBILITY	CONTACT	PROS	CONS
4D	4D Mail 5.3.2	●●½	10 mailboxes, $149; 100 mailboxes, $249	X	408/557-4600, www.4d.com	Inexpensive and easy to use; integrates with existing WebStar and 4D servers.	No secure services; least-powerful spam controls.
Kerio Technologies	Kerio MailServer 5.7.4	●●●●	20 mailboxes, $395 (each additional 20 users, $95); 20 mailboxes with antivirus software, $679 (each additional 20 users, $229)	X	800/406-4966, www.kerio.com	Secure by default; best-organized administration tool; great statistics reporting and logging; excellent mailing-list management.	More expensive than others per mailbox.
Stalker Software	CommuniGate Pro 4.1.8	●●●●	50 mailboxes and 5 mailing lists, $499; 200 users and 15 mailing lists, $999	X	800/262-4722, www.stalker.com	Most customizable; most built-in services; supports clustering for very large sites; good choice for large organizations.	Most confusing administration interface.
Tenon Intersystems	PostOffice 3.5.3	●●●½	100 mailboxes and 10 mailing lists, $295	X	800/622-2410, www.tenon.com	Excellent mailing-list management; most control for users.	No virus scanning or secure services; weak antispam documentation.

three separate servers: the Admin Server, for controlling who is allowed to make administrative changes; the SMTP Server, which handles communication between e-mail servers; and the Mailbox Server, which stores messages that users will read with an e-mail client.

PostOffice uses a Web-based administration interface, so you can administer your mail server from a Web browser on any platform. This interface is as organized and clean as a Web-based interface can be; it's divided neatly into account-administration, mailing-list, and server-configuration areas. But navigation is not consistent throughout—some pages don't include a Back or a Home link. An administrator can also configure PostOffice by sending e-mail directly to the server, useful for administrators with portable e-mail devices.

CommuniGate Pro also has a Web interface for administration, and it makes the product's flexibility and complexity readily apparent. There are so many options—some that a mail administrator may never need to understand—on every screen that a novice mail administrator can easily get lost. But even a quick tour through the pages shows that CommuniGate Pro is a very powerful piece of software—this is e-mail serving for serious pros.

Users and Control

Creating user accounts was fairly easy on all four mail servers, which store user information in their databases. MailServer allows synchronization with Apple's Open Directory, a Microsoft Windows NT 4.0 domain, or Microsoft's Active Directory. And CommuniGate Pro can also integrate with an existing LDAP directory, bringing the elegance of a central user database to your e-mail server.

E-mail users often want to change the way their mail is handled, such as forwarding messages to another e-mail address or sending an autoreply message when they don't plan to check their mail for a while. PostOffice lets users use its well-designed Web interface to control most aspects of e-mail delivery, and to change personal information and passwords. CommuniGate Pro gives users similar control over their accounts, though the Web interface here is as crowded and as complex as the administrative interface. 4D Mail and MailServer, however, don't give users any control over their own accounts.

These e-mail servers also give users access to their e-mail via a Web browser. PostOffice comes with ten client licenses for WebEdge (which costs $500 if you have more than ten users). WebEdge works much like Yahoo Mail; it has a spelling checker, an address book, and a well-designed calendar. 4D Mail includes 4D WebMail, a separate server that allows Web access. WebMail runs independently of the mail server, so you have to take the extra step of importing the user database from 4D Mail before enabling Web access. CommuniGate Pro's Web client is not handsome, but it's certainly feature-rich. We were impressed by MailServer's Web client. The cleanest and best designed of the four, it's good enough to make you think of using it instead of your regular e-mail client.

From One to Many

When you want to send messages to multiple recipients, mail servers can provide shortcuts: they let you create aliases and mailing lists, which are two ways of sending e-mail to one e-mail address that represents another or many other e-mail addresses. Aliases are administrator-created shortcuts to one or more e-mail addresses. As for mailing lists, users can manage, create, and administer them, and let anyone interested in being part of the list add themselves and control their options by sending e-mail messages to the mail server, even if they don't have an account on the server. Mailing lists (or listservs) are a good way to let outside people participate in discussion groups, and the ease with which they can participate is important.

All four products let an administrator easily create aliases, but 4D Mail had a quirk—it wouldn't let an administrator add users to an alias until the administrator created an empty alias. MailServer and CommuniGate Pro also provide *groups*, special e-mail aliases consisting only of MailServer users. MailServer, PostOffice, and CommuniGate Pro also let the administrator add new users to aliases when their accounts are created, which is a time-saving step.

Both PostOffice and MailServer provide superior control over mailing lists, with options for setting them up, as well as options for subscribing and posting, requiring moderation of posts, adding headers and footers, and enabling automatic replies to messages. These two servers and CommuniGate Pro allow people interested in your e-mail list to subscribe, participate, and set options completely through e-mail, keeping the need for administration to a minimum. 4D Mail doesn't provide mailing-list capabilities.

Sending and Receiving

All four mail servers use standard Internet protocols to get e-mail where it needs to go: SMTP (Simple Mail Transfer Protocol), POP (Post Office Protocol), and IMAP (Internet Message Access Protocol).

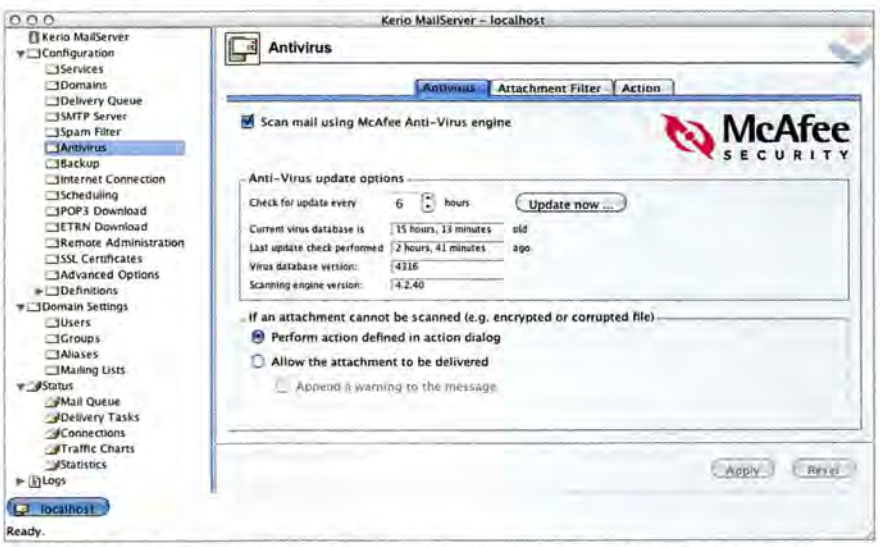
4D Mail and PostOffice use these three protocols and encrypt the POP password. But these protocols send messages in unencrypted clear text, so a machine on the same network as the server and client can potentially read information in transit. Using a secure connection to exchange passwords and transfer e-mail is one of the simplest ways an organization can protect itself from information theft.

MailServer and CommuniGate Pro solve the security problem by including services that use the Secure Sockets Layer (SSL) protocol to encrypt information between the server and the client. Both create a default SSL certificate during installation to provide basic encryption. MailServer includes a certificate-creation wizard for making more-authoritative certificates that prove the identity of your e-mail server to clients that connect to it.

Spam Catching

With e-mail spam and viruses at epidemic levels, mail servers need to be choosy about the mail they accept. You can't keep spammers from knocking at your door, but you should certainly be able to keep them out. 4D Mail offers several methods of identifying possible spam. You can subscribe to DNS blacklists—centralized lists of IP addresses and domains that have been used to send unsolicited mail in the past—and reject mail sent from blacklisted addresses, sending back a short message explaining the rejection. The server can also be con-

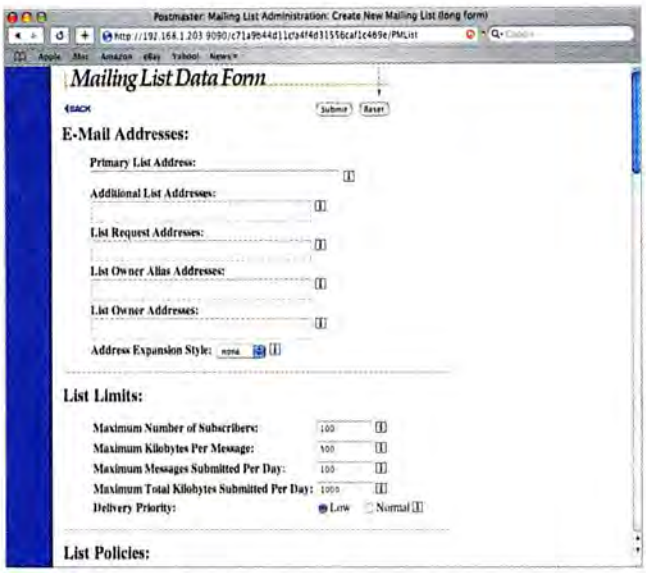
continues



An Apple a Day Protecting against e-mail viruses is easy with Kerio MailServer's Administration Console.

figured to enforce reverse IP lookup matching, which will reject mail from IP addresses that pretend to be from a different Internet domain.

4D Mail also lets you create filters that search for certain words or phrases in e-mail headers (for example, they'll look for *Viagra* or *Valium* in a message's subject line). But trying to keep up with spam by manually creating e-mail–header filters will quickly wear down the patience of an e-mail administrator. PostOffice does 4D Mail one better by including all of 4D Mail's antispam capabilities and SpamAssassin (www.spamassassin.org), a free, open-source mail-filter package that uses a variety of techniques including Bayesian filtering, which is based on a form of statistical analysis. Tenon provides no documentation on customizing SpamAssassin for use with PostOffice or adjusting its rules for your mail server, but a Web search will uncover tutorials by users who have managed to customize their PostOffice-SpamAssassin setups.



Trial-Free Subscription PostOffice provides excellent mailing-list management through easy-to-use Web forms that give you many options.

MailServer includes the SpamEliminator engine, which assigns e-mail messages a numeric spam score based on various factors. You can configure the server to tag mail with a certain score as spam, and then to either alter the subject line (for example, adding ***SPAM*** to alert users), or to silently discard the message.

CommuniGate Pro users can download the SpamCatcher plug-in from Stalker's Web site—you can also use SpamAssassin with CommuniGate Pro, but it's difficult to set up. SpamCatcher is priced according to the number of messages per hour you'd like to scan for spam—for example, $279 buys you 50 messages per hour, and $559 buys you 150 messages per hour. Like just about everything else in CommuniGate Pro, SpamCatcher is not straightforward to configure, but it provides increased customization and control to administrators who don't mind reading extra pages in the manual and editing text files in OS X's Terminal.

Virus Killing

Macs aren't nearly as susceptible to e-mail–borne viruses as Windows machines are, but some of your users will probably use Windows. So your mail server should protect against viruses. Many viruses can be avoided simply by refusing attachments with certain file-name extensions (*.exe*, *.bat*, and *.scr*, for example), but true virus protection requires that you fully scan all e-mail parts. PostOffice fails this test because it lacks an easy way to integrate with existing antivirus software. Tenon's Web site claims that some of its customers have created scripts, for McAfee's Virex, that scan e-mail before it is delivered to users. But this method still allows viruses to be accepted by the mail server before the script runs.

Fortunately, the other three mail servers provide virus protection. 4D Mail will determine whether Virex ($35 per server for a two-year subscription, from McAfee) is present during installation, and it will let you scan all the messages going through your mail server if you choose that option. CommuniGate Pro users can download plug-ins that incorporate Sophos Anti-Virus ($349 for 50 messages per hour, $699 for 150 messages per hour) or McAfee Anti-Virus ($399 for 50 messages per hour, $799 for 200 messages per hour), whose installation and configuration are as complex as SpamCatcher's but whose results are excellent. You can download a version of MailServer with McAfee Anti-Virus already installed, with which you can automatically schedule downloads of new virus definitions. This option provides the most hassle-free virus protection of the four servers. Adding antivirus capabilities to MailServer costs between $14 per user for a 20-mailbox license and $4 per user for a 1,020-mailbox license.

Macworld's Buying Advice

All four e-mail servers will serve certain organizations well. 4D Mail will integrate with existing WebStar and 4D applications, but it has no secure services and no advanced spam control—huge drawbacks. PostOffice is a good choice for organizations that want administration to be as hands-off as possible, and that want to let users and the people on users' mailing lists control configuration as much as possible—but we're wary of its lack of secure services and its omission of spam control. CommuniGate Pro is the best choice for very large organizations with money to spend and administrators who want the most control under the hood. And Kerio MailServer, with its dedication to security, ease of administration, and flexibility, is simply spectacular right out of the box. □

BUILT-IN ALTERNATIVES

Why spend money on one of these mail servers when you can get one for free? OS X has always included a mail server. Postfix (in Panther) and Sendmail (in all earlier OS X releases) are powerful open-source mail servers that have run on Unix machines for years.

But without various add-ons and plug-ins, and a lot of obscure knowledge, you can't do much with either of them. To use them as full-fledged mail servers, you'll need to edit text configuration files, using documentation found on the Postfix and Sendmail Web sites and in the additional software packages. This will likely be daunting even for simple configurations.

There's another way to make OS X's mail server work for you—upgrade to Mac OS X Server 10.3. Of course, this removes the free aspect (it costs $999 for unlimited clients). Panther Server provides Mail Services, which includes Postfix for SMTP, Cyrus IMAP for IMAP/POP, and SSL encryption for them all. Mail Services also adds SquirrelMail, a Web-based e-mail client, and GNU Mailman, a powerful mailing-list package. The best news is that you control all of Mail Services' components through a GUI, staying far from the nasty innards of text-based configuration files.

You configure Mail Services through the Server Admin interface, which allows easy setup and control of core mail services—for example, you can add authentication and secure connections to POP, IMAP, and SMTP traffic by selecting options. Spam and virus control is provided only through DNS blacklists, but administrators comfortable with OS X's Terminal application can configure Postfix to use third-party or open-source software such as SpamAssassin and MIMEDefang (www.mimedefang.org). Management of Mailman mailing lists is straightforward and intuitive. And SquirrelMail's clean and customizable design means that you won't spend much time explaining to e-mail users how to read their mail in a Web browser.

Mac OS X Server 10.3 won't be an attractive option for small organizations. However, its powerful and stable e-mail service is a very good choice for medium and large groups with hardware horsepower sufficient for running the software smoothly.

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Macworld
The Mac Product Experts

20-Inch iMac G4

Larger Display Makes for More Fun—and More Work

BY JENNIFER BERGER

The new iMac G4, with its 20-inch LCD monitor, is a wonder to behold. Despite its consumer-level status, it's a mighty Mac. For $2,199, you get the same computer as the 17-inch iMac G4 (★★★★½; *Reviews in Brief*, January 2004) but with a very large, 20-inch screen, for which you pay the additional $400.

Like the 17-inch iMac G4, this Mac has a 1.25GHz G4 processor, 256MB of RAM (expandable to 1GB), an 80GB hard drive, and a 4× SuperDrive (which writes both DVDs and CDs). Even the ports—three USB 2.0, two FireWire 400, a VGA output, and an S-Video output, to name a few—are identical. Its speed scores are also identical, within a margin of error, to those of the 17-inch iMac (see the benchmark chart).

So back to the 20-inch monitor. It may very well be worth the extra cost. The display's specs are quite similar to those of the 20-inch Apple Cinema Display ($1,699), marketed for professional users (though it's probably not the exact same display). We easily fit two 8.5-by-11-inch Microsoft Word documents side by side at 105 percent, viewed them without scrolling, and still had room for the Formatting palette. When we opened a Microsoft Excel spreadsheet with default settings and cell sizes, we fit 21 columns and 68 rows on the monitor. We got only 18 columns and 57 rows on a 17-inch iMac G4's display with a resolution of 1,440 by 900 pixels.

Apart from its sheer size, the display's quality shines at a 1,680-by-1,050-pixel resolution. A QuickTime movie, a PDF document, and general Finder operations looked sharp, crisp, and bright. And the problem of color shifts at different viewing angles that we noticed when we reviewed the 17-inch iMac G4 seems to have been resolved with this iMac. We were able to view the display at almost 180 degrees on all sides before the color changed any more than what we expect from an LCD.

But this large screen may be too much of a good thing. Although the 20-inch iMac's footprint is the same as that of every other recent iMac—about 10.5 inches in diameter—its 20.2-inch-wide and 14-inch-tall screen makes it a behemoth. This iMac is not only larger but also 18 pounds heavier than the smaller-screen iMacs. In addition to the fact that the display is heavier, as we expected, some weight has been added to the base to counter it. Once the iMac was on our desk, the screen was noticeably more difficult to manipulate on its monitor arm, so moving it was much more of a workout than moving the screens of the 15- and 17-inch iMacs. According to Apple, the swivel arm has been made stiffer to support the larger display.

The downside to any current iMac is that it's not very upgradable. Adding RAM is about all you can do easily. Like the 17-inch model, the 20-inch iMac ships with 256MB of RAM, which is upgradable to 1GB.

Macworld's Buying Advice

The 20-inch iMac is a great machine, although the huge display may undermine its graceful design. Don't get us wrong—lots of space to move palettes, toolbars, and data is never bad. Just be sure to weigh your needs carefully before you buy. □

RATING: ★★★★
PROS: Nice, big display; fast; small footprint.
CONS: Display can be difficult to maneuver; limited upgrade options.
PRICE: $2,199
OS COMPATIBILITY: Mac OS X
COMPANY: Apple Computer, 800/692-7753, www.apple.com

Macworld LAB TEST

	Speedmark 3.3 OVERALL SCORE	iMovie 3.0.3 RENDER	iTunes 4.2 MP3 ENCODE
20-inch iMac G4/1.25GHz	119	1:10	3:16
17-inch iMac G4/1.25GHz	*121*	*1:10*	*3:15*
eMac G4/1GHz	*100*	*1:25*	*4:03*
Power Mac G5/1.6GHz	*154*	*0:51*	*2:05*
	>Better	<Better	<Better

BEST RESULTS IN **BOLD**. REFERENCE SYSTEMS IN *ITALICS*.

For the full results of our benchmark tests, see www.macworld.com/2004/03/reviews/imac20inch/. Speedmark 3.3 scores are relative to those of a 1GHz eMac G4, which is assigned a score of 100. iMovie and iTunes scores are in minutes:seconds. All systems had 512MB of RAM and were running Mac OS X 10.3.2. We tested MP3 encoding with an audio CD that was 45 minutes long, converting it from the hard drive using iTunes' Better Quality setting. For more information on Speedmark 3.3, visit www.macworld.com/speedmark.—MACWORLD LAB TESTING BY JAMES GALBRAITH

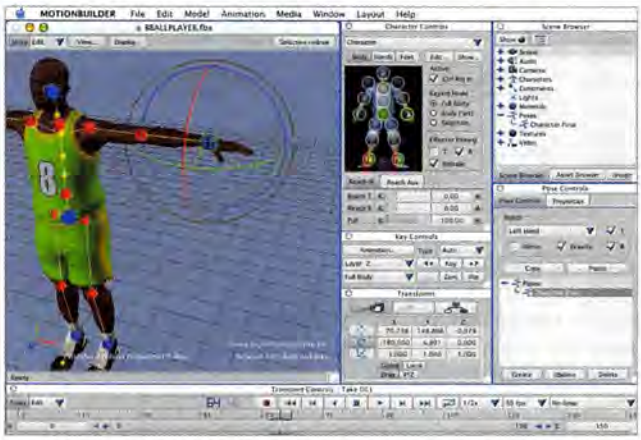
PHOTOGRAPH BY PETER BELANGER

MotionBuilder 5

Character-Animation Package Proves to Be a Smooth Character

BY SEAN WAGSTAFF

Unlike other 3-D packages that focus on rendering spectacular images and effects, Kaydara's MotionBuilder 5 is uniquely suited to creating great animation of biped and quadruped characters—a task at which it succeeds admirably.



Coming to Life MotionBuilder 5 can rig a character—complete with intuitive, animator-friendly controls—in one command. The program also does a great job of blending motion from many sources, such as keyframes and motion capture.

MotionBuilder can render animations, but most animators will base their work on models they've built and skinned in another application, such as Alias's Maya or Maxon's Cinema 4D. Then they'll end up exporting their work back into that application for final production—for rendering or for use in real-time 3-D media such as video games.

While other 3-D programs have very good character controls, and Maya, for example, allows extremely sophisticated (but slow) character rigging and effects for film-quality animation, no 3-D program can match MotionBuilder's prowess when it comes to setting up and animating characters for game, broadcast, or multimedia applications.

Part of MotionBuilder's greatness is its superb performance. The software offers excellent interactive feedback as you manipulate characters and play back animations. And you can animate most characters with real-time playback, using the latest-generation OpenGL technology (we tested on a dual-800MHz Power Mac G4 with 1GB of RAM).

MotionBuilder also lets you very quickly set up a character for animating—a task that is usually one of the most technically demanding and time-consuming aspects of animation. Its Characterize command, for example, lets you apply a complex control rig to a skinned character with a mouse click, and the resulting rigs are easy to manipulate, even for technically unsophisticated animators. MotionBuilder's smooth blending of inverse- and forward-kinematic animation, and its intuitive handling of joint pinning and other common animation tasks, will make the program popular with many animators.

In general, animation in MotionBuilder is fast and extremely efficient. You can store and reuse poses, quickly copy and blend poses and action between characters and body segments, and apply and manipulate motion data from a variety of sources. Although MotionBuilder is excellent for creating character animation from scratch, it's the best Mac-compatible animation application for working with motion-capture data, whether that data is gathered from professional radio, optical or magnetic motion-capture systems, or simple inputs, such as a mouse or joystick. (A major disappointment is that the Mac version lacks the Windows version's ability to generate keyframe animation based on phonemes from a voice track.)

Much of MotionBuilder's interface is similar to that of other 3-D applications, but one innovative feature unique to the program is the Story tool. This nonlinear editor looks like those in many video-editing programs, but it can be used to quickly blend together multiple action sequences, cameras, storyboards, audio, and other scene elements in a way that will seem immediately intuitive to a video editor. While some other 3-D applications offer a nonlinear editor of one kind or another, MotionBuilder's is the most intuitive and obviously functional one we've seen.

Macworld's Buying Advice

MotionBuilder 5 shouldn't be your only 3-D application, especially if you have to create elaborate models, scenery, or fantastic or realistic renderings. However, as a tool for creating real-time 3-D character animation, it is unbeatable, and the program is an excellent complement to most major 3-D packages. □

RATING: ★★★★½

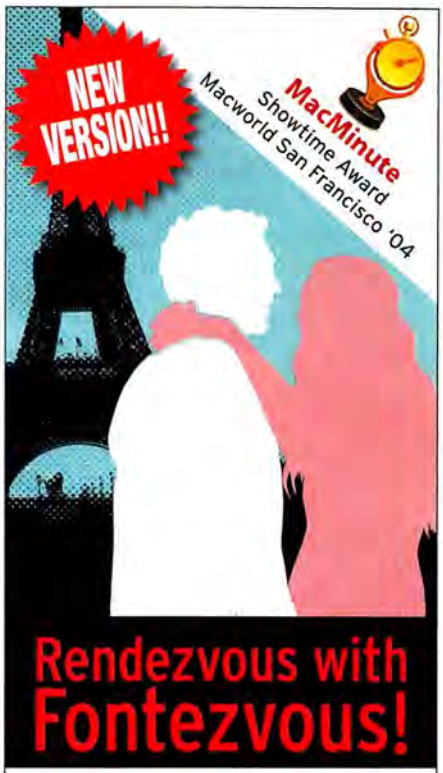
PROS: Excellent character animation; well-focused (albeit dense), highly customizable interface; fast; nearly painless character rigging; intuitive nonlinear editor; support for major 3-D packages.

CONS: Character rigging not intended for film-quality close-up animation.

PRICE: $995

OS COMPATIBILITY: Mac OS X

COMPANY: Kaydara, 514/842-8446, www.kaydara.com



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Flexible Utility Offers Quick Access to Your Files and Folders

BY DAVID WEISS

Despite Mac OS X's many charms and abilities, it can seem rather inflexible compared with OS 9, which lets you put your own files, folders, and applications in an Apple menu, and lets you choose your own system font. But with the help of a new breed of software, you can take greater control of OS X. You Software's You Control 1.0 lets you create your own menus—which can contain whatever you'd like—and place them right in OS X's menu bar. The application also lets you put menus in each of the four corners of your screen (they appear when you move your mouse over those areas), and summon menus using any key combination. A few shareware applications can accomplish similar feats, but none is as reliable or as full featured as You Control.

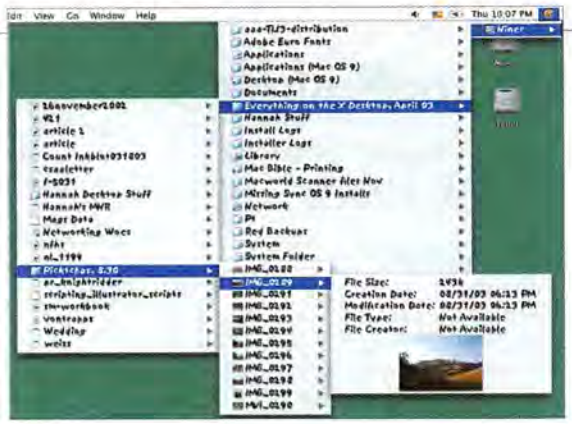
Taking Control

You access all of You Control's functions via a single, cleverly designed window. The Module pane on the left presents a list of Apple applications (such as iTunes, Pasteboard, and Address Book) and You Control functions (such as selecting files or placing dividers between menu sections). Drag an item from the Module pane to the Menus pane to create a menu, and customize it using the context-sensitive Settings pane on the right. Changes happen in real time, so it's easy to experiment.

On the Menu

You Control lets you choose your own text for menu items, and your title can be as long as the available space. But try to reign in any verbose tendencies; the available space shrinks and expands depending on the foreground application you have running, and if You Control doesn't have room to display your title, your menu will simply vanish.

Aside from text, you can choose an icon from a palette or create one from any digital photo (OS X scales the image to fit, so choose a square image to avoid distortion). In the spirit of customization, You Control lets you create your own labels with which to divide menu sections, and you can use any font on your system. It also ships with 18 useful presets, including The Whole Enchilada, a menu that provides access to all of You Control's modules.



Custom Menus Put the contents of your hard drive in a You Control menu, and scroll to any file using a single click-and-hold (top). You Control's main interface is well organized and context sensitive (bottom).

Squeezebox

Digital Music Player Fit for a Home Stereo

BY JASON SNELL

Once you've transferred your music collection onto a Mac or an iPod, and gotten used to the freedom of having your entire music library at your fingertips, it's hard to go back to using your stereo's primitive CD changer. CDs don't afford you the luxuries of an MP3 library—for example, shuffling through an artist or a genre. Slim Devices' Squeezebox bridges the gap between your hard drive and your stereo, giving you control over your music from an easy-to-use stereo component.

Like its predecessor, the excellent SliMP3 (★★★★½; April 2003), the Squeezebox has no moving parts or hard drive. Instead, you run the free Slim Server software on the computer that holds your music collection. If you're running OS X and iTunes, installation is a snap—Slim Server appears as a system preference pane, and the software automatically links to your iTunes library and playlists. With its bright fluorescent display and infrared remote, the Squeezebox fits right in as a home stereo component, letting you navigate its iPod-style interface by remote control. (You can also control the Squeezebox via a Web browser.) The device's standard display size is a bit too small, but its double-size mode works fine when you're all the way across the room.

The Squeezebox will please casual users and audiophiles. Its built-in support for 802.11b wireless networking is great for people who don't have Ethernet jacks behind their stereos. Slim Devices also sells the $249 Squeezebox Wired, which offers only Ethernet connectivity. Connecting to my home network was easy, but AirPort users should write down their Network Equivalent Password if they're using WEP encryption to secure a local network.

The Squeezebox comes with many audio-out options, from the standard RCA stereo plugs to coaxial and optical digital outputs. It even includes a minijack for headphones or powered speakers. (Unfortunately, we found that the beginnings of some audio tracks were cut off when we connected the Squeezebox optically. Slim Devices says it's working on a fix.) Audiophiles will thrill at the Squeezebox's support for raw uncompressed audio, which means it can play back AIFF or WAV files natively, without any compression artifacts. Slim Server can also convert other formats, including AAC and the lossless FLAC, for playback on the Squeezebox, and will play Internet radio streams in MP3 Shoutcast format. However, the Squeezebox can't play encrypted files from the iTunes Music Store, and you have to edit a text file hidden deep within Slim Server's package if you want to change its format-conversion preferences (another issue Slim Devices says it will address in a future release).

RATING: ★★★★

PROS: Support for compressed and uncompressed audio; easy-to-use remote-driven interface; built-in wireless networking.

CONS: Somewhat small display; no support for encrypted iTunes Music Store files.

PRICE: $299; Ethernet-only version, $249

OS COMPATIBILITY: Mac OS X

COMPANY: Slim Devices, 650/210-9400, www.slimdevices.com

Macworld's Buying Advice

The Squeezebox is the perfect device for anyone who wants a seamless stereo-component experience from an iTunes music collection. Its support for wireless networking reduces a major hurdle in bringing MP3s to the living room, and its digital outputs and ability to play uncompressed audio make it a must-have product for audiophiles. □

Extra, Extra!

Each of You Control's three content modules—US Weather, Stocks, and News Reader—would make a fine stand-alone application. The modules draw updated information from the Internet, so they are best suited to users with broadband connections. People with dial-up connections may want to forgo them. US Weather tells you the current temperature, the forecast, and weather conditions for any U.S. zip code over an eight-day period. (You Software plans to add an international version.) The Stocks module gathers detailed intelligence on any public corporation (you just need to know its symbol). Similar to MacReporter (♦♦♦½; "Mac Software Bargains," July 2002), News Reader, which works with Rich Site Summary (RSS) sites, delivers headlines right to your Mac and can take you directly to the full story on the Web. This module offers a good selection of sites.

Control Issues

Typical of a 1.0 release, You Control isn't perfect. If you set up a menu in the upper left corner of the screen and then import a preset menu into the same corner, the menus won't combine; instead, they'll randomly appear separately when you click in that corner. Also, if you add your own application to a You Control menu (as opposed to an application with corresponding You Control modules), that app will appear in a folder called Contents. You Software assured us that a 1.0.1 update, slated for release by the time you read this, would address these problems.

You Control also has room for growth. You can toggle individual menus on and off at will, but the program doesn't offer a way to save menu settings according to different projects and switch from one setting to another.

Macworld's Buying Advice

You Control 1.0 has a few limitations and foibles, but they aren't dramatic enough to detract from its considerable strengths. It gives you rapid access to every nook and cranny of your Mac, and it provides more computing flexibility than OS X currently allows. The added content modules are a welcome bonus. □

RATING: ♦♦♦♦
PROS: Provides powerful interface controls; highly customizable; generous assortment of presets; comes with modules for news, weather, and stock information.
CONS: Has minor preset-importing bug; apps added to You Control menus appear in a folder called Contents; no way to save settings for different occasions.
PRICE: $70
OS COMPATIBILITY: Mac OS X
COMPANY: You Software, 800/968-2968, www.yousoftware.com

inMotion

Portable Speakers Turn Your iPod into a Miniature Bookshelf Stereo

BY HENRY BORTMAN

Altec Lansing's $149 inMotion, a portable speaker unit for the iPod, is arguably the coolest iPod accessory on the market.

About the size of a paperback book when folded shut (8.0 by 5.4 by 1.2 inches), this device is easy to tote around, and it weighs just less than a pound. If you're traveling, you can set it on a nightstand and use the iPod's Alarm Clock feature to turn it into a musical alarm clock.

The unit's four 1-inch speakers deliver surprisingly good sound. But while the inMotion's MaxxBass technology delivers excellent bass, Apple's bundled iPod headphones offer crisper, more-balanced audio overall. For example, when the inMotion blasts out rock tunes, a snare drum or tambourine occasionally sounds too loud. The inMotion sports a built-in docking connector, so it works best with docking iPods. When connected to AC power and your Mac, it can serve as a complete dock replacement, automatically charging your iPod and syncing it with your Mac's iTunes library, iCal calendar, and Address Book. (The inMotion can get power from the supplied AC adapter—a clunky-looking unit—or from four AA batteries.) It also works with earlier iPods via its auxiliary input, but the recharging and synchronizing features work only with docking iPods.

PETER BELANGER

RATING: ♦♦♦♦
PROS: Compact and lightweight; impressive sound quality; serves as a dock replacement.
CONS: Cumbersome AC adapter.
PRICE: $149
OS COMPATIBILITY: Mac OS 9, Mac OS X
COMPANY: Altec Lansing Technologies, 866/570-5702, www.alteclansing.com (sold through Apple stores)

Macworld's Buying Advice

Altec Lansing has created an impressive product that pairs seamlessly with Apple's docking iPod. If you're looking for external speakers to use with your iPod, look no further than the inMotion. □

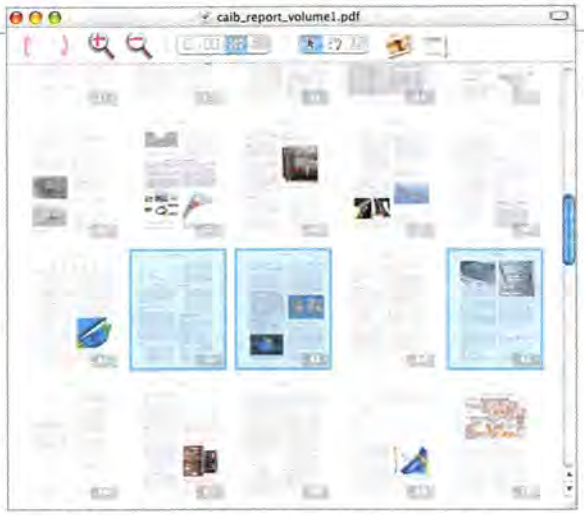
PDFpen 1.1

PDF Utility Hampered by Poor Performance

BY FRANKLIN N. TESSLER

For sharing complex documents, PDF files are hard to beat, and PDF is the most popular format for distributing downloadable forms on the Web. Although Adobe Acrobat (★★★★½; September 2003) lets you create and edit PDF files with ease, its $299 price is too steep if you need only to rearrange a few pages, add graphics, or complete a digital form. SmileOnMyMac's PDFpen 1.1 promises to give you control over your PDF files for a lot less. Alas, its low cost is offset by poky performance and a handful of bugs.

Like Apple's Preview, PDFpen sports a toolbar that lets you click your way through a document, in both directions, or zoom in and out. Instead of Preview's drawer, which displays only a column of miniature pages, PDFpen's multipage view fills the document window with as many thumbnails as can fit, along with optional page numbers (see "Pages Galore"). The multipage view lets you rearrange or delete pages, but using the shift and ⌘ keys to select multiple pages doesn't work consistently, and sometimes you have to switch between the ⌘ and shift keys to add to a selection. Dragging pages around the document window felt sluggish on my Power Mac G4.



Pages Galore PDFpen makes it easy to navigate through long documents—you can view as many thumbnails as can fit on your screen.

PDFpen's annotation tools are a mixed bag, too. The ability to insert pictures—including other PDF files—anywhere in a file is handy, and the program even lets you resize and crop imported graphics. But the Text tool is slow to respond. And when you drag a text box around, there's an annoying lag.

PDFpen sorely needs an alignment tool for text-annotation boxes and imported images so that inserted text and images line up properly.

And PDFpen's Find command, (unlike Preview's and Acrobat's) does not let you search a document for a specific word or phrase, and it can't search text annotations, as claimed. It just doesn't do anything useful. SmileOnMyMac is aware of the problem.

For now, if you want only to combine PDF documents, Monkeybread Software's Combine PDFs (www.monkeybreadsoftware.de/Freeware/) does the job just fine, and it's free.

Macworld's Buying Advice

PDFpen 1.1 is an unfulfilled promise. But with a modest speed boost and a few bug fixes, PDFpen could become an indispensable, reasonably priced utility. □

RATING: ★★½
PROS: Multipage view for long documents; lets you resize and crop imported graphics.
CONS: Slow; limited Find function; flawed multiple-page–selection feature.
PRICE: $30
OS COMPATIBILITY: Mac OS X
COMPANY: SmileOnMyMac, 402/323-6692, www.smileonmymac.com

THE CONQUEST

DiskWarrior is Now OS X Native

It's the indispensable utility that repairs problems such as disks that won't mount, files you can't trash, and folders that have disappeared. MacUser magazine said, "It's the fastest and safest data recovery utility you can buy."

Macworld magazine said, "DiskWarrior is by far the best disk utility available for the Mac; it can repair virtually any disk problem you may encounter...and it is likely to become the only tool you'll want to keep with you at all times."

David Coursey, ZDNet AnchorDesk, agrees in an article comparing disk utilities. He used it to fix a disk that no other utility could. "DiskWarrior is a great product, not just because it fixed a pretty serious screw-up, but because it showed me what it planned to do in minute detail before doing it."

But disk damage isn't the only threat to your data. As hard drives get older, the drive mechanisms

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DoubleSight DS-1500

Two-in-One LCD Monitor Delivers Mixed Results

BY JAMES GALBRAITH

Sure, LCD monitors are affordable—if you like things small. Increasing your screen real estate will really cost you. A 15-inch LCD can be had for around $350 these days, a typical 17-inch display sells for around $500, and you'll likely pay more than $1,000 for a 20-inch model. DoubleSight Displays has come up with an interesting, if not fully successful, way to add additional screen space without paying a fortune for a large single display.

The $799 DoubleSight DS-1500 is really two 15-inch LCD screens housed in the same case, with a 1-inch black plastic bar running vertically down the center. Each display has its own cable, so you must have two VGA connectors on your Mac. You'll probably have to install a second graphics card. If you don't already have a PCI graphics card, you can get ATI's lowest-end model for about $120. After you connect both of the DoubleSight's cables to your Mac, you plug in the power cord and use OS X's Displays preference pane or OS 9's Monitors control panel to span your desktop across both displays.

You use the DoubleSight as you would any dual-display setup: open a spreadsheet across both displays, browse Web pages on one while working in Word on the other, or use the second display for application palettes and tools. Remember, you're doubling the width of a 15-inch display but still working with 768 pixels, from top to bottom, on each. So while you may be able to view two Word documents side by side, you'll be scrolling up and down much more than if you were working on a 20-inch display, with its 1,200 pixels from top to bottom.

We found that the DoubleSight had a somewhat soft-focus appearance. This is probably because it requires two signal conversions: from digital to analog and back. (LCDs are digital by design, and this display connects via VGA, which is analog.)

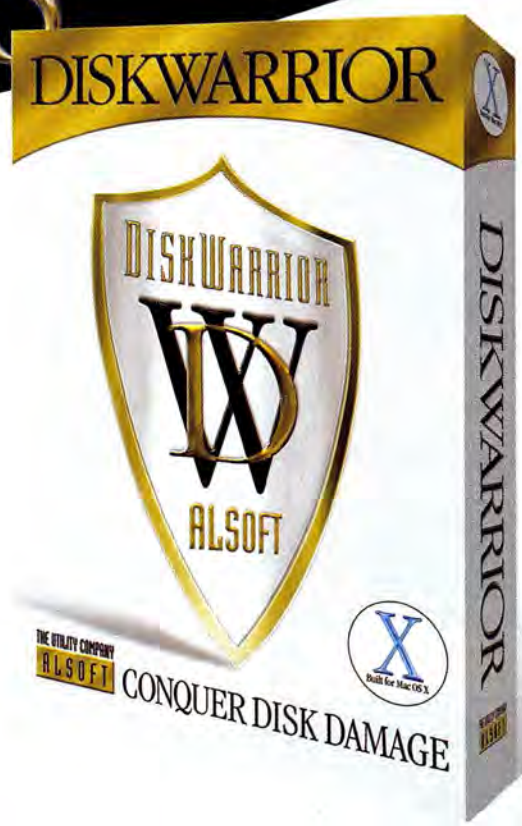
Macworld's Buying Advice

You could get two sharper 15-inch digital displays for less than the cost of the DoubleSight DS-1500. But if having two displays in one case will help you overcome space limitations, or if you just prefer the clean look of two displays integrated into one, the DoubleSight will broaden your computer-viewing horizons at a good price. □

RATING: ♦♦♦
PROS: Inexpensive; clever way to increase screen size.
CONS: Analog (VGA) only; increases horizontal screen size only.
PRICE: $799
OS COMPATIBILITY: Mac OS 9, Mac OS X
COMPANY: DoubleSight Displays, 714/738-6600, www.doublesight.com

PHOTOGRAPH BY PETER BELANGER

CONTINUES



begin to malfunction. Eventually, the malfunctions become so severe that the drive simply stops working. DiskWarrior can automatically test for hardware malfunctions, giving you the chance to back up your data before it's too late.

Be prepared. Don't wait until after you have a disk disaster to buy your copy of DiskWarrior. Bob LeVitus, aka Dr. Mac, said, "I feel naked without DiskWarrior." You can believe MacHome magazine when they said, "DiskWarrior is a quick, one-click solution to faster, more stable hard drives."

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- Star Trek Elite Force II
- X2 Wolverine's Revenge
- NoLimits
- Nanosaur 2: Hatchling
- Belkin Nostromo n52 SpeedPad

To Seek Out New Enemies

THE STAR TREK SCIENCE-FICTION FRANCHISE SEEMS cursed—the last few movies have been unremarkable; the current television show is tepid at best; and a majority of the related games have, in a word, stunk. So it was with no small amount of trepidation that I picked up Aspyr's newest addition: Star Trek Elite Force II. But despite some minor glitches, this first-person shooter largely manages to escape the curse—it is a worthy addition to the Mac shooter market.

Make It So Find interesting aliens—and then kill them, in the latest Star Trek–themed shoot-'em-up.

Elite Force II is the sequel to a three-year old game, also by Aspyr. And like its predecessor, this game places you in the role of Lieutenant Alex Munro, the leader of a specially trained security force known as the Hazard Team, aboard the *U.S.S. Voyager.* Having successfully defeated the Borg and returned home from the Delta Quadrant, you suddenly find yourself reassigned to a teaching position at Starfleet Academy—and champing at the bit for more action. Relief comes from none other than Captain Jean-Luc Picard, who needs you to round up your original team and join the *U.S.S. Enterprise* on a mission to save ships and colonies from a new wave of attackers.

The game has enough plot twists and production details—for example, the introduction of a threatening new alien race, and voice acting from Patrick Stewart and other Star Trek veterans—to keep occasional Trekkers satisfied. But make no mistake, this is an action game, through and through. Aside from the occasional puzzle, such as using your tricorder to change shield frequencies or hacking systems to gain access to new levels, you're here for one thing—to blast almost everything that moves. And to that end, you're given a dizzying arsenal of Starfleet weaponry.

Elite Force II features a dynamic soundtrack that adjusts to the action around you; it's cleverly implemented, and it helps heighten the sense of tension. The game's graphics look astoundingly better than its predecessor's—aliens and humans look startlingly lifelike, and environments feature a magnificent level of detail. Even better, you won't sacrifice game play for the extra visuals. Aspyr has cranked up all the action in Elite Force II. This is especially true for the game's multiplayer Holomatch mode, which enables players to engage in arena-style combat against one another (Windows and Mac players can square off over the Internet or over LANs), or against computer-controlled bots.

This game does suffer from a few shortcomings. Its AI, for example, occasionally causes computer-controlled friends and foes to get confused about where to go. Repetitive voice tracks might get on your nerves, too. The biggest frustration I experienced, however, was with the level-loading design. It seemed that I had to stop every couple of minutes and wait for a new level to load—a tedious delay that broke up the pace of the action.

The Bottom Line Star Trek Elite Force II is an enormous improvement on its predecessor and a welcome relief in an otherwise beleaguered franchise. Despite some shortcomings, it offers plenty of challenge for action-hungry Trekkers.

STAR TREK ELITE FORCE II
RATING: ♦♦♦½
PROS: Clever integration of music; improved graphics.
CONS: Unintelligent AI; cumbersome level design leaves you waiting.
PRICE: $40
OS COMPATIBILITY: Mac OS X
COMPANY: Aspyr Media, www.aspyr.com

continues

The Inner Beast Wolverine's claws and heightened senses can't save X2 Wolverine's Revenge from monotony and disappointment.

Clawstrophobia

X2 Wolverine's Revenge, by Aspyr Media, is one of the few games based on the Marvel Comics franchise The Uncanny X-Men to make it to the Mac. Sadly, it hardly seems worth the effort. Although it has a hero fraught with fighting potential, this game left me as cold as the northern wastes Wolverine came from.

Wolverine is one of the X-Men's most enduring characters. Logan, as he is known to his friends, is the classic antihero—a man haunted by a past he can't remember and possessed by a nature that makes him as much a beast as a man. Wolverine benefits from the heightened senses of a predatory animal, preternatural stealth, and advanced healing powers. And it doesn't hurt that his skeleton is laced with an unbreakable alloy called adamantium—the same

FIRST LOOK | Nanosaur 2: Hatchling

By the time you read this, Mac-centric game maker Pangea Software should be shipping Nanosaur 2: Hatchling, a long-awaited sequel to one of the company's best-loved 3-D–action games. I took a look at a prerelease version—and boy, how things have changed!

Take to the Air You're no longer stuck to the ground in Nanosaur 2: Hatchling, Pangea Software's 3-D update.

You may remember Nanosaur as the game that Apple included with the original Bondi blue and fruit-colored iMacs. Nanosaur 2 builds on the storyline of its predecessor. As a genetically engineered dinosaur from the future, you must snatch eggs while avoiding your ancestors, who threaten to bite, claw, or stomp you to Mesozoic mincemeat. This time, however, you're not running around—you're *flying*. You are a futuristic pterodactyl-like dinosaur equipped with an array of weapons, such as guided missiles and bombs, along with other useful technology, such as a protective shield and a jet pack. If this seems like an excessive amount of firepower, bear in mind that you're fighting rebel forces from your own time who have gone back to the age of dinosaurs and set up their own defenses.

Nanosaur 2 makes full use of the power that modern Macs offer. The graphics are richer and more complex than any Pangea game to date. But what really makes the game unique is its built-in support for 3-D graphics using the red and cyan glasses from old 3-D movies. (Pangea includes two pairs of glasses in the box.) The effect is, in a word, startling. It has blown away everyone I've shown the game to.

Playing in 3-D mode is purely optional. Even without it, you'll be impressed by the quality of the game's graphics. Environments are detailed and lushly illustrated, character animations are more realistic than before—the trees will even catch fire if your weapons go astray. Nanosaur 2 supports a multiplayer mode, but both players must be hooked up to the same Mac.

The Bottom Line With plenty of great action and a stunning 3-D mode, Nanosaur 2: Hatchling is definitely worth checking out.

BETA TESTED

NANOSAUR 2: HATCHLING

PROS: Gorgeous 3-D anaglyph graphics; new challenges.

CONS: No networked multiplayer capabilities.

PRICE: $25

OS COMPATIBILITY: Mac OS X

COMPANY: Pangea Software, www.pangeasoft.net

X2 WOLVERINE'S REVENGE
RATING: ▮▮
PROS: Decent soundtrack and graphics.
CONS: Difficult controls; inconvenient game-saving feature; bland game play.
PRICE: $40
OS COMPATIBILITY: Mac OS X
COMPANY: Aspyr Media, www.aspyr.com

material used to construct the razor-sharp claws that Wolverine can extend from each hand.

Unfortunately, Wolverine's special powers are wasted on an all-around mediocre game. Wolverine's Revenge plays out like so many other third-person shooters—you explore levels, kill enemies who are either depressingly stupid or have ridiculously bad aim, and eventually square off against traditional villainous masterminds such as Sabertooth and Magneto. But simplistic level design leaves the game bereft of challenge or complexity. All in all, the action is formulaic, predictable, and fairly boring.

At least the game looks and sounds pretty. Wolverine's Revenge features a cinematic soundtrack that helps the game flow. Voice acting includes Mark Hamill as Wolverine—that's right, Luke Skywalker fills in for Hugh Jackman—and Patrick Stewart as Professor Xavier. The game's graphics are adequately attractive—although occasional blockiness will keep you mindful of this game's console heritage.

Wolverine's Revenge suffers from another common console carryover, one I absolutely detest: the inability to save at will. This game lets you save only between levels. As a result, I often had to go through the same areas over and over to complete a mission before I could save again.

The game's console origins are also glaringly obvious in the input department. Playing Wolverine's Revenge with a keyboard and a mouse—a common scenario for Mac gamers—is frustrating and awkward. You'll be more comfortable with a game pad or other controller, but good luck setting it up. It took me an unusually long time to get mine working to my satisfaction.

The Bottom Line If you own a PlayStation 2, you'll be better off buying or renting the console version of X2 Wolverine's Revenge—especially since you can buy the console game for half of what Aspyr is charging. Otherwise, this is a game to skip.

Roller Mania

Many Mac gamers have lamented the Windows-only status of Rollercoaster Tycoon, a popular theme-park strategy game in the vein of Zoo Tycoon. But while it doesn't seem likely that this game will make the switch anytime soon, there is another option for industrious Mac users who want the thrill of designing their own coasters—NoLimits, a fun, new OS X roller-coaster simulator by Mad Data.

NoLimits gives you the tools and know-how to build—and then ride—the roller coaster of your dreams. Although there are no strategy elements here—you don't have the responsibility of running a profitable theme park or fixing a broken coaster—NoLimits is a blast to play. The game's designers paid careful attention to physics modeling to ensure realistic results. In fact, pro coaster designers have actually used NoLimits to test their designs early in the coaster-building process.

The graphics are surprisingly good for a shareware game, though they lack the blow-your-socks-off quality that gamers with top-end video cards have come to expect. Still, they're good enough to give you a nice sense of vertigo when you first ascend that dizzying peak before plummeting, twisting, and turning your way

continues

Whee! Build and ride your own virtual roller coasters with NoLimits.

around the track. Sound effects even include the whooshing of wind as you speed down the track—a nice touch.

Riding coasters is fun, but building them is even more fun—and really challenging. The game's editing tools let you piece together your coaster by laying out the track and then choosing the scenery. It's surprisingly easy to use, even if you're not used to 3-D design software. However, getting a roller coaster that actually works well is a whole different story—it's as much art as it is science.

NoLimits also includes simulations of real-world roller coasters, such as the Texas Tornado and the Viper, which you can ride over and over again. Best of all, there are no lines, and you can always get a front-row seat in the first car.

The Bottom Line NoLimits is a fun and unique simulator that will appeal to coaster enthusiasts. There's even some learning potential here for physics students. At the very least, check out the demo. □

NOLIMITS
RATING: ♦♦♦½
PROS: Unique; editing tools let you build your own dream coaster.
CONS: Graphics are a bit lackluster.
PRICE: $25
OS COMPATIBILITY: Mac OS X
COMPANY: Mad Data, www.nolimitscoaster.com

Though his days of dressing up in pointy ears are far behind him, MacCentral.com Senior Editor PETER COHEN can still make the Vulcan hand sign with the best of them.

Light at the End of the Carpal Tunnel

Last year, Belkin answered the call from first-person–shooter (FPS) enthusiasts and produced a game controller just for them—the USB-based Nostromo n50 SpeedPad (♦♦♦½; April 2003). This year, the company has followed up with the new and improved n52 SpeedPad. And while it's still not perfect, FPS fans may find that the revamped controller can help them make some important plays.

The SpeedPad is a special kind of controller—it's neither a joystick nor a game pad. Instead, this controller uses a specialized keyboard designed specifically for the needs of FPS players.

Belkin designed the n52 to be used as a left-handed controller (sorry, left-handed mousers). With three rows of keys, a rotating scroll wheel, an eight-way directional pad, a wrist rest, and a couple of thumb buttons thrown in for good measure, the n52 provides instant access to as many keys as you are likely to need to move, change weapons, perform special actions, or activate alternate weapons modes in just about any game.

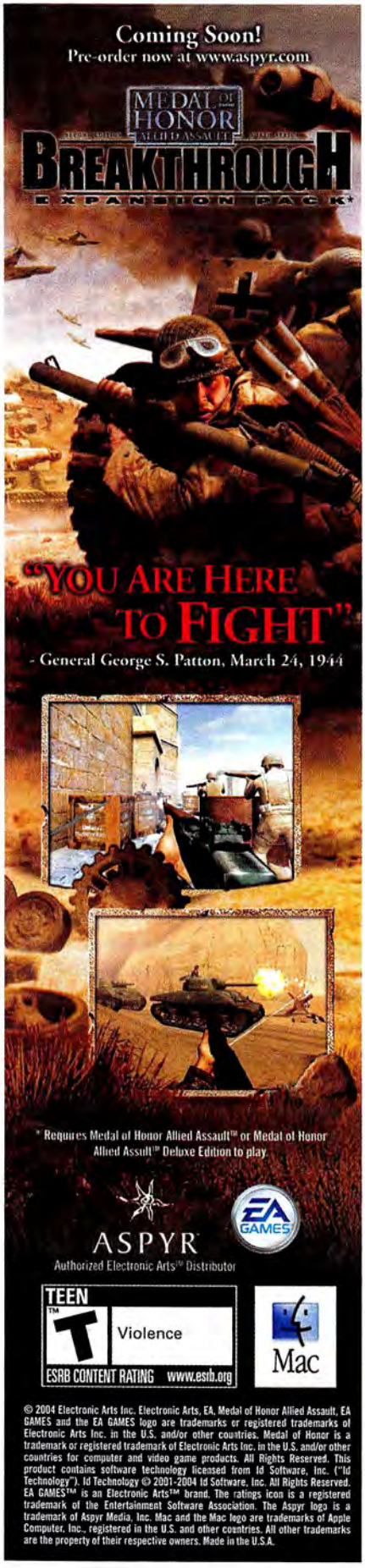
If you're already familiar with the n50, you'll find some important improvements in the n52. The new controller adds a third row of buttons for even more programmability, and an improved scroll wheel that rotates 360 degrees—as opposed to the throttlelike low-to-high setting on the n50.

Although the n52 is a bit bigger and bulkier than the n50, I found the n52 very comfortable—and I wear a men's medium glove. Some of the credit goes to the controller's adjustable (and removable) wrist rest, a carryover from the n50 design. The keys feel a bit flimsy compared with those on a Mac keyboard, but they're good for a game controller and solidly built for regular use.

Belkin says that you can program as many as 104 functions on the n52 (using *shift states* that allow you to program multiple functions for a single button). This is accomplished with software, which you'll have to download from Belkin's Web site. The software lets you create individual SpeedPad configurations for the games you play, mapping keys to individual functions within the game. As I noted about the n50, I wish Belkin offered prebuilt configuration profiles for specific Mac games (something they do offer for Windows users). Still, the Nostromo Array configuration software works well and looks cool.

The Bottom Line If you're looking to improve accuracy and performance in 3-D shooters and other keyboard-heavy action games, the Nostromo n52 SpeedPad may be right for you. Just plan on doing a bit of work to set it up to your liking.

BELKIN NOSTROMO N52 SPEEDPAD
RATING: ♦♦♦♦
PROS: Convenient key configuration means greater precision in fast-paced action games.
CONS: Configuration software lacks Mac presets.
PRICE: $50
OS COMPATIBILITY: Mac OS 9, Mac OS X
COMPANY: Belkin, www.belkin.com



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- fnSwitch
- uControl
- Netflix Freak
- Pacifist
- iBeeZz

What's Your Function?

PANTHER'S EXPOSÉ IS ONE OF THE BEST OPERATING-system features I've seen in years. But you need to press function keys to invoke Exposé functions, and on most Apple laptops, OS X claims keys F1 through F7 for controlling system settings such as brightness and volume. With certain newer PowerBooks, the added controls for keyboard backlighting mean that every function key except F11 and F12 is already in use. To use these keys as function keys, you must hold down the fn modifier key, and unless you have the hands of Julius Erving, this can be pretty tough to do with one hand.

Enter the open-source **fnSwitch 1.1.1** (★★★★½; http://sourceforge.net/projects/fnswitch/), which does just what its name implies. After you install fnSwitch and enable the Activate F1–F12 Keys option in its preference pane, your function keys will work as function keys when you press them; if you want to use them to change system settings, you hold down the fn key.

fnSwitch isn't useful just for Exposé; it also frees up function keys when you use a keyboard utility to assign items and actions to those keys. My only complaint is that fnSwitch doesn't provide its own keyboard command for toggling its functionality on and off, but that's a minor beef.

More Keyboard Controls

Speaking of keyboard switches, if fnSwitch doesn't do enough for you, check out gnufoo's open-source **uControl** (★★★★½; http://gnufoo.org/ucontrol/). In addition to letting you toggle function-key behavior, it provides a number of other keyboard modifications, some of which Mac users have been requesting for years.

For example, you can swap one modifier key for another—switching the enter and option keys is popular with PowerBook users. If you're left-handed and want to reverse the buttons on your two-button mouse, you can do that, too. You can also enable mouse or trackpad scrolling—press a desired modifier key (such as the fn key on PowerBooks), and you can scroll the current document window by moving the cursor. uControl is also handy for Mac users who want to use a Windows-centric keyboard—you can set up the Alt and Windows keys to correspond to the option and ⌘ keys.

Since uControl is a kernel extension, make sure to install the version that's correct for your version of OS X, and check for upgrades before you update your operating system. But if you get hooked on uControl's functionality, these will be minor inconveniences.

Trackpad Turns Scrollpad With uControl, you can scroll through documents using your mouse or trackpad.

Movie Management

Netflix (www.netflix.com) lets you rent a number of DVDs at once—and keep them as long as you like—via the U.S. Postal Service. If you're a Netflix subscriber, you've got to check out The Little App Factory's $10 **Netflix Freak 1.0.3** (★★★★; www.thelittleappfactory.com). Using Netflix Freak, you can manage your queue (the list of movies you've ordered for rental) and access the online Netflix database far better than you can through the Netflix Web site.

The main Netflix Freak window shows your queue; you can rearrange movies—which changes the order in which you'll receive them—by dragging them up or down in the list. You can add some mystery to your movie-watching by clicking on the Shuffle button to reorder your queue; you won't know which movie you'll get next. You can also search your queue to see if you've already added a title. (I know someone who has 500 movies—the maximum—in a queue, so this feature can really be helpful!) Clicking on a title provides information

continues

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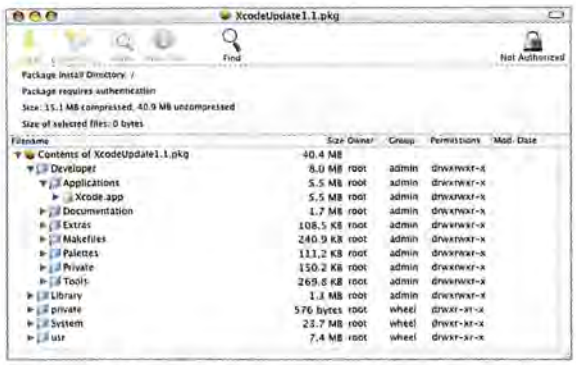
about that movie, including an image of its DVD cover, a synopsis, and its genre (which you can change if you have your own classifications). You can include your own notes about each movie and search the Notes field later.



Package Peeking Pacifist lets you see what's inside an installer package and even install individual files.

Another helpful feature in a family environment is the ability to assign a name to each movie, in order to keep track of who rented each one.

Netflix Freak's Find screen offers improved movie-search features, dividing search results into Movies, Actors, and Directors. Click on a movie to get more information (including Netflix user ratings), or click on an actor or director to get a list of movies related to that person. Select a movie and click on Add to add it to your queue—you can choose to add it to the beginning, add it to the end, or put it in and then shuffle the entire queue. If only the Web site offered such flexibility!

Netflix Freak lets you quickly see currently checked-out movies, along with your entire rental history. This little utility is a welcome alternative to the Netflix Web site, which I haven't visited in months.

Installer Info

Have you ever wondered exactly what an installer package (a *.pkg* or *.mpkg* file) was going to install? Or have you wished you could install just a single file or subset of files from such a package? If so, CharlesSoft's $20 **Pacifist 1.6** (★★★★★; www.charlessoft.com) is just what you've been looking for. Drag an installer package onto the Pacifist icon, and Pacifist presents you with a list of all the files in the package, organized by the target installation directory. You can also see detailed information about each file, including its permissions, size, and file type. This functionality alone can be very helpful for previewing installations.

But Pacifist's real power is that it lets you verify installations and extract or install any file from within a package. For example, if you recently updated OS X via an installer package, and now you're having problems, open that package in Pacifist and click on the Verify button. Pacifist will check to see whether all files are installed correctly and have the right permissions, and it will provide a full report of the results. Discrepancies may indicate an installation problem, and reinstalling might fix it.

If you discover that an application or a file is damaged, you can also use Pacifist to get a clean copy of that file. Open the appropriate installer package in Pacifist, and then select the desired file(s). Click on Extract to save the file(s) to your hard drive (in a location you choose), or click on Install to install those files exactly as if you were using the Installer utility.

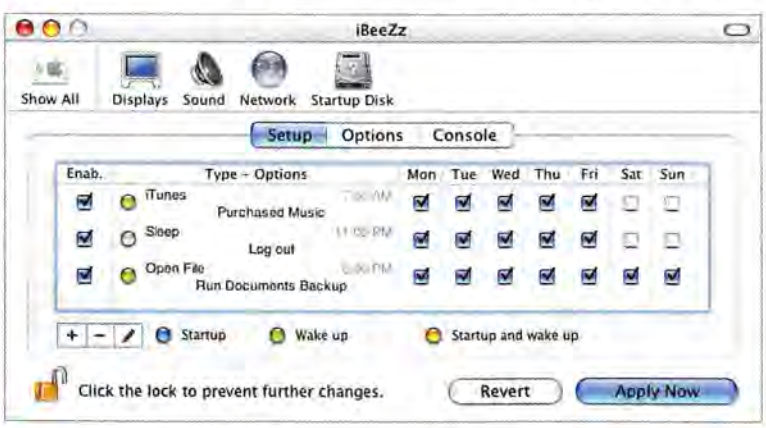
Note that because it's so powerful, Pacifist can be dangerous; installing a wrong or incomplete version of a vital system file can render your system unbootable. And if you need to reinstall an application, you should install the full application first, and *then* install any updates. But Pacifist is one of the most useful tools available for OS X, especially for troubleshooting.

Enhanced Energy Saver

In Panther, Apple finally brought back OS 9's scheduled-startup, -sleep, and -shutdown features. But Panther still limits you to only two schedules: one for startup, and another for *either* sleep or shutdown. If you'd like more control over these functions, you'll love **iBeeZz 2.2.1** (★★★★½; www.ibeezz.com; see the company's Web site for pricing information).

With iBeeZz, you can create as many scheduled events as you like, and you can schedule each event for a specific time on one or more days each week. However, iBeeZz doesn't confine you to startup and shutdown; each event can execute one of five basic actions—startup, wake from sleep, restart, shutdown, and sleep—or one of two special options that let you open files or start playing music via iTunes.

The Open Files option lets you select one or more applications and files—including AppleScripts—to open at the scheduled time. The iTunes option lets you play songs from your main Library or choose a particular playlist; you can also choose the target volume and fade-in speed, making iBeeZz a great alarm clock. iBeeZz gives you precise control over exactly when your computer is running and what it's doing. □



Sleep Schedules
iBeeZz gives you far more control over sleep, startup, and shutdown than OS X alone does.

Contributing Editor DAN FRAKES is the author of *Mac OS X Power Tools, Panther Edition* (Sybex, 2004) and an editor at MacFixIt.com. Send your thoughts on this column, or on things you'd like to see in future columns, to macgems@macworld.com.

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Panther SECRETS Declassified

We Go Undercover to Reveal 40+ Mac OS X 10.3 Tips and Tricks

WITH ALL THE BURIED FEATURES and subtle changes hidden away in OS X 10.3 (alias: Panther), you'd think that Steve Jobs were running a covert operation. Sure, you know about Exposé and Fast User Switching—but look deeper, and you'll find that there's much more to this cat than meets the eye.

To get you the dirt on your new OS, we sent out our own secret agents—men and women who get *paid* to dig through the inner recesses of OS X. And what they discovered surprised even us.

From working more efficiently, to restoring missing standbys, to uncovering hidden features, we'll let you in on some of Panther's best-kept secrets. >>

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GET SMART

16 WAYS TO WORK MORE EFFICIENTLY

As with our brains, few of us use our Macs to their full potential. We fumble through dialog boxes, repeatedly resize and relocate our windows, and generally work hard instead of working smart. But it doesn't have to be this way. To quickly boost your Mac IQ—while also shaving valuable time off your workday—try out a few of these essential shortcuts for managing files, navigating windows, and automating repetitive tasks.

Prioritize Label Colors

For some Mac users, Panther's best attribute will be the long-awaited return of Labels—a feature that was stripped from previous versions of OS X. Labels let you selectively color-code files and folders so you can quickly identify important or related items in the Finder. To assign a label, control-click on the item in the Finder and choose a color from the Color Label contextual menu. To quickly sort your files according to label color, just add a Labels column to the Finder's list-view mode. (Select View Options from the View menu and activate the Label option under Show Columns.) When you click on the Finder's new Label column header, all files and folders of the same color will appear together.

However, the Finder's default sort order for Labels isn't always ideal—it sorts according to the label's name, not according to the order of the colors as they appear in the Labels menu. So even though you've chosen the color red to denote your most-important files, say, those files will be buried in the middle of your list. To ensure that a particular label color always ends up on top, use a numerical prefix when renaming your labels. Go to the Finder's Label preference pane and type 1. Top Priority in the text field next to the red label. The next time you sort by Labels, your most important files will jump to the top (see "Color My World").—ROB GRIFFITHS

Use Title-Bar Proxies

You may already know that you can ⌘-click on a document's or a Finder window's title-bar icon to see a pop-up menu of the item's path. It's less commonly known, however, that you can use that icon as a draggable proxy for the folder or document. By clicking and holding on a window's title-bar icon, you can manipulate it just as you would any Finder icon. For example, click on the small page icon in the title bar of an open Microsoft Word document, and you can quickly drag the document to a new location on your hard drive, option-drag it to create a copy of it, or ⌘-option-drag it to create an alias of it.

Color My World Use numbers in label names to control the sort order and make sure priority files (here, in red) always jump to the top.

In fact, you can even drag this proxy to *another* application—dropping it either on an open window or on a Finder or Dock icon—to open the document in that application. For example, if you're editing a Web page in BBEdit, you can drag the document's title-bar icon to any Web browser to quickly view your work. There is one thing to remember when you're using this trick on open documents: you'll need to save all changes to the document *before* OS X will let you drag the file's icon to another location.—DAN FRAKES

Resize All Column Widths

In OS X 10.3, Apple has changed the Finder's default column-view behaviors. Now when you click and drag the icon at the bottom of a column divider, only the preceding column is resized. This is useful if you need to quickly expand a truncated file name. If you want to resize all the columns at once—to fit more columns in a window, for example—hold down the option key while adjusting the column width.—RG

One-Click Printing

If you need to print a class assignment or a project file before running out the door, there's no reason to waste time waiting for the application to start up. Thanks to Panther's revival of desktop printers, you can now drag the needed file onto your printer's icon and start printing immediately. (Some applications will still require that you go through a Print dialog box.) To create a desktop printer, launch Printer Setup Utility (Applications: Utilities), select the desired printer, and choose Create Desktop Printer from the Printer menu. The resulting dialog box will ask you to name the printer and to specify a location for the printer's icon. Despite the command's name, you don't have to place the desktop printer on your *desktop*. You also can drag the printer icon into your Dock or to the Finder window's sidebar for even easier access (see "Print on Demand"). Double-click on the printer icon to view your print queue and to manage print jobs.—DF

Work with Docked Items

Panther makes it easier than ever to open, move, or duplicate files and folders stored in the documents side of the Dock. For example, say you keep an often needed PDF form in your Dock. In Panther, you can quickly open that file in Apple's Preview, or in Adobe Acrobat or Photoshop, and you can even attach it to an e-mail message—by ⌘-clicking on its Dock icon and dragging it to the desired application. If you press the option key while ⌘-dragging the icon from the Dock, Panther will create an alias of the item in the currently selected folder. To fully copy the item into the selected folder, ⌘-click on the

KEEP TO THE KEYBOARD

One of the most effective ways to steal back precious time—and reduce the likelihood of repetitive strain injuries—is to stop reaching for your mouse. All that clicking, dragging, and scrolling can seriously add up over the course of a day—time better spent knocking back lattes at the coffee shop.

In Panther, you can access almost any menu, command, or dialog box without ever taking your hands off the keyboard. For example, pressing ⌘-, (comma) calls up the Preferences window for the current application, and pressing ⌘-T automatically adds the selected item to the Finder's sidebar. (For a comprehensive list of systemwide keyboard shortcuts, open Mac Help from the Help menu and search for *Keyboard Shortcuts*.)

Here are quick ways to harness the power of Panther's keyboard shortcuts:

Quickly Navigate the Find Dialog Box

If you use the Search In Specific Places option in Finder's Find dialog box—to limit a file search to a specific drive or folder, for instance—you can press the tab key to highlight different search locations, and the spacebar to turn the locations on and off. Once you've indicated which places to search, press control-tab to leave the Specific Places menu and jump to the next input field.

Stop Scrolling through Menus

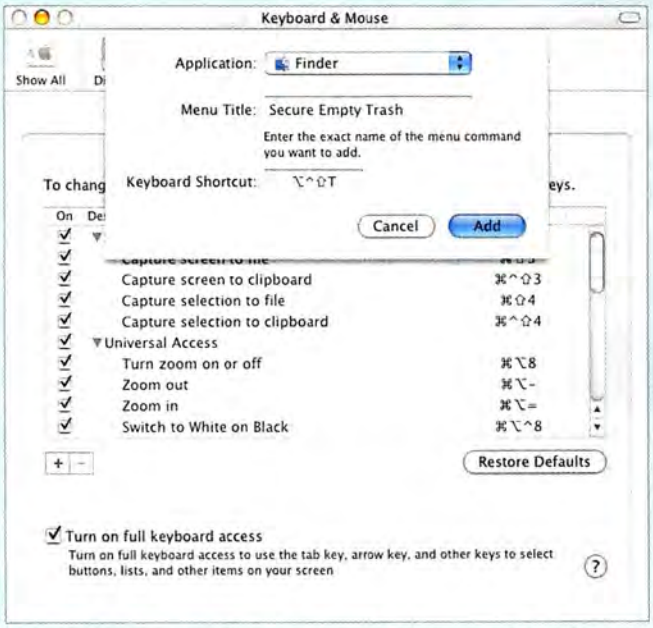
You probably know that you can quickly navigate through open Finder windows by pressing the first couple of letters in the name of any listed folder or file (press D-O to highlight your Documents folder, for example). In Panther, this rule also applies to contextual menus, Open and Save dialog boxes, and most application menus. Control-click on any item in the Finder and press G-E to open a Get Info window, M-A to make an alias, and so on.

Customize Keyboard Shortcuts

Keyboard shortcuts won't help you much if you can't remember what they are, or if they don't exist for the commands you use most often. Well, no more excuses: Panther lets you define your own keyboard shortcuts for almost any command in any application. For example, the Finder's Secure Empty Trash feature—which writes over deleted data so that no one can retrieve it—is very useful, but it isn't accessible via a keyboard shortcut. However, a quick trip to the Keyboard Shortcuts area of the Keyboard & Mouse preference pane can take care of this oversight.

In Keyboard Shortcuts, click on the plus-sign (+) button to add a new shortcut. In the resulting dialog box, select Finder from the Application menu and, in the Menu Title field, enter the name of the command you want to assign a shortcut to—in this example, you'd type Secure Empty Trash. (You must type the *exact* name of the command as it appears in the Finder.) Then decide what keyboard shortcut you'd like to use. The challenge is finding a shortcut that hasn't been assigned to something else. In our example, we used shift-control-option-T (see "Easy and Secure").

Once you've found an available keyboard shortcut, click on the Add button. Applications must be restarted before you can use their new keyboard shortcuts. With a Finder shortcut, you'll have to log out and log back in (or use the Activity Monitor utility to restart the Finder).—RG



Easy and Secure Using the new Keyboard Shortcuts area of the Keyboard & Mouse preference pane, you can define keyboard shortcuts for any menu in any application—including the Finder.

TIP EASY ACCESS

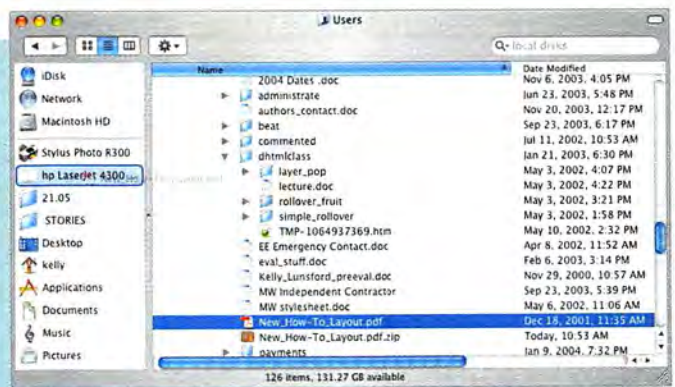
Pressing the tab key in most dialog boxes will move your cursor to the next input field. To quickly navigate other interface elements—such as buttons, pull-down menus, and so on—press control-F1 to activate Full Keyboard Access mode. Now when you press tab, you'll cycle through all dialog-box items. Press control-F1 again to exit this mode.—KL

Dock icon, drag it a short distance from the Dock, press the option key, release the ⌘ key, and then let go.—RG

Automate Finder Tasks with Script Editor

Even very productive Mac users spend an inordinate amount of time performing the same small tasks again and again—opening folders, changing views, and so on. Although AppleScript, Apple's built-in scripting language, can help by automating these routines, its unintuitive syntax often discourages beginners from taking advantage of its powerful features. In Panther, however, Apple has helped to break down this barrier by making the Finder a *recordable* application—so you can use Script Editor to record your actions and let it create the necessary script for you.

For instance, if you like to leave your Documents folder sorted by name but often need to find the most-recent files in



Print on Demand Desktop printers don't have to live on the desktop. We added our Epson and Hewlett-Packard printers' icons to the Finder's sidebar.

Jump to It! Use the Dock's new System Preferences icon menu to jump directly to any preference pane.

it, you can record a script that automatically opens the folder and sorts it by date. To do this, launch Script Editor (in Applications: AppleScript) and click on the Record button. Switch to the Finder, and then hold down the ⌘ key while double-clicking on your Documents folder (this opens the folder in a new Finder window). Set the window to list-view mode if necessary, and then click on the Date column header. Switch back to Script Editor and click on the Record button again to stop recording. You should see a completed script—reflecting the actions you just performed—in the Script Editor window. Select File: Save, give the script a name (View Docs By Date, for example), set the File Format menu to Application, and then select a location for your saved script.

To use the script, just double-click on its name—the Documents window should then pop up and sort itself by date. You may even want to drag the script to the Finder's sidebar window for easy access.

Not every action in the Finder is recordable. If you don't see an action you've taken reflected in the Script Editor window, it's not supported.—RG

Jump to Any System Preferences Pane

If you spend a lot of time in System Preferences—switching between networks, starting and stopping services such as file sharing, or changing your screen saver—here's a way to avoid opening the entire System Preferences window and instead jump directly to the preference pane you need.

Open System Preferences; then hide the application by pressing ⌘-H. (Unlike previous versions of OS X, Panther automatically quits System Preferences when you close the window.) When you need to return to a preference pane, just click and hold the System Preferences Dock icon: you'll be able to choose from a pop-up list of every preference pane (see "Jump to It!").—RG

Drag Images from Preview's Drawer

In earlier versions of OS X, Preview offered a great way to quickly view several images at once—a side drawer popped out from the window and displayed thumbnails of each selected image, so you could jump from one to the next for fast comparison. But if you then wanted to refine those photos in an image editor such as Photoshop, you had to close Preview and locate the files in the Finder. In Panther, you can simply drag thumbnail images from the drawer, just as you would drag icons in the Finder. Drag them onto the Dock's Photoshop icon, and the images open in Photoshop, for example, or drag them into a Finder window to copy them.—RG

Quicker Googles

If you're using Safari and you come across a word or phrase that you don't understand or that you want to know more about, you can use it as a Google search term without retyping it in Safari's search box. Just highlight the word or phrase with the cursor, control-click, and choose Google Search from the contextual menu. Voilà! Up pop your search results. This great feature isn't new, but it's often overlooked.—KELLY LUNSFORD

BE MORE EFFICIENT WITH EXPOSÉ

Exposé, OS X's new window-management system, lets you do truly useful things—such as clearing away all windows to access a desktop file, viewing all of your open windows at once, and bringing forward all of an application's windows. But if that's all you use Exposé for, you're not tapping into its full power.

Move Hidden Files into Hidden Windows

Say you want to move a desktop file—a recently taken screenshot or a file downloaded from the Web, for example—into a specific Finder window. But other windows cover both the file icon and the destination window. With Exposé, this isn't a problem at all. First, clear away all windows by pressing F11, the default Desktop key. Once you can see the desktop, click on and hold the item to be filed; then press F9, the All Windows key. Drag the item onto the miniaturized destination Finder window and press F9 again. When the Finder window springs to the foreground, release the mouse button to drop the selected file into the window.

Quickly Change Applications

Here's a quick way to bring all windows of a buried application to the foreground: After activating Exposé in either All Windows (F9) or Application Windows (F10) mode, press ⌘-tab to bring up the application switcher—a transparent list of all open applications (see "Switch It Up"). While holding down the ⌘ key, repeatedly press tab to select the desired application. All of that program's open windows will immediately jump to the foreground—still in Exposé mode. This is especially useful when you've got a ton of open windows to sort through.

Combine Stickies and Exposé

If you use Stickies to store important snippets of information but don't like all the room they take up on your desktop, Exposé can help you consolidate these electronic notes. First, press ⌘-M to minimize each of your Stickies windows to a single line of text. Pile your minimized notes directly on top of one another so only the top note is visible. When you need to access the information in one of the notes, just press F9 and then press ⌘-tab (or just tab) to switch to Stickies. Exposé will automatically separate all your stacked notes, making it easy to find just the information you're looking for. Select the appropriate note in Exposé to bring its window to the top of the pile.—RG

Switch It Up Panther's application switcher (⌘-tab), lets you quickly move to a hidden program without mousing over the dock.

SECRET SERVICE

16 THINGS YOU DIDN'T KNOW YOUR MAC COULD DO

Think you've already figured out everything there is to know about OS X? You may be in for a surprise. Even Apple doesn't seem completely sure how many new features Panther has—the company says only that the number is "over 150." Here are a few of our favorite features that tend to go undetected.

Create Double-Sided Printouts

For people whose printers don't have duplexing features—which are generally sold as expensive add-ons—creating tree-saving, double-sided prints used to be an exercise in frustration. That's because OS X didn't offer an automatic way to print only odd or only even pages. Panther simplifies this process with a new Paper Handling option.

Different printers process pages in different ways, so you should experiment with a small sample document before tackling your entire 1,000-page thesis. In the standard Print dialog box, click on the Copies & Pages menu and select Paper Handling. Activate the Reverse Page Order option, and then choose Even Numbered Pages as the Print setting (see "Double Up.") Print your job, collect the output, and then return the pages to your printer's manual feed tray or to the main feed bin—in rare cases, the latter option may jam the printer. Open the Print dialog box again, return to the Paper Handling menu, and choose Odd Numbered Pages. Depending on how your printer feeds paper, you may need to leave the Reverse Page Order option selected.—RG

Completely Erase Disks

When you reformat a disk—a hard drive, a Zip disk, a FireWire drive, a CD-RW, and so on—you don't actually erase the data on it. All you really do is erase the disk's catalog, the information that tells the operating system what's on the disk. Anyone with basic disk tools can still read the entire contents (excluding any data you've written over).

For a truly clean sweep, launch Disk Utility (Applications: Utilities), highlight the disk you want to erase, select the Erase tab, and then click on the Options button. In the Options screen, enable either the Zero All Data option or the 8 Way Random Write Format option. Reformatting with one of these options enabled will take a substantial amount of time, but you can rest assured that your private data will be thoroughly erased.—RG

Improve Presentations with Fast User Switching

Do you give presentations that require switching between applications—for example, from a presentation program to a demonstration of your company's software, and then back again? If so, you can use Panther's Fast User Switching feature to set up a seamless performance.

Start by creating a new user account (in the Accounts preference pane) for the software demonstration—be sure to activate the Enable Fast User Switching option under Login Options. Then log in as the new user and set up the desktop, Dock, preferences, and your demo application exactly as they should be when you switch to your demo during your presentation.

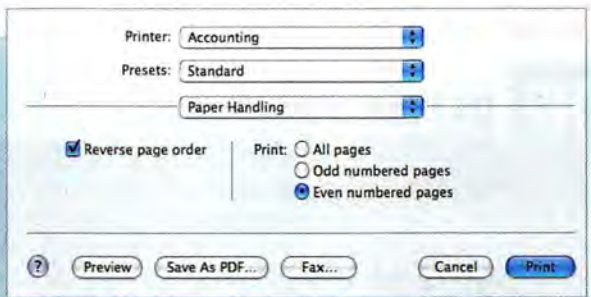
When it's time to give your presentation, log in as the primary user and begin the presentation in Keynote, PowerPoint, or another program. When you reach the spot in your presentation that requires the demonstration, press the escape key to temporarily pause the presentation; then open the Fast User Switching menu in the top right corner of your screen, and log in as the new user. The screen will rotate to place you right at the necessary point in your software demonstration. When you're done, simply switch back to the primary user and click on the slideshow button to pick up where you left off.

If you have multiple demonstrations within your presentation, you can create a unique user for each one—allowing perfect customization and smooth performance for each segment.—RG

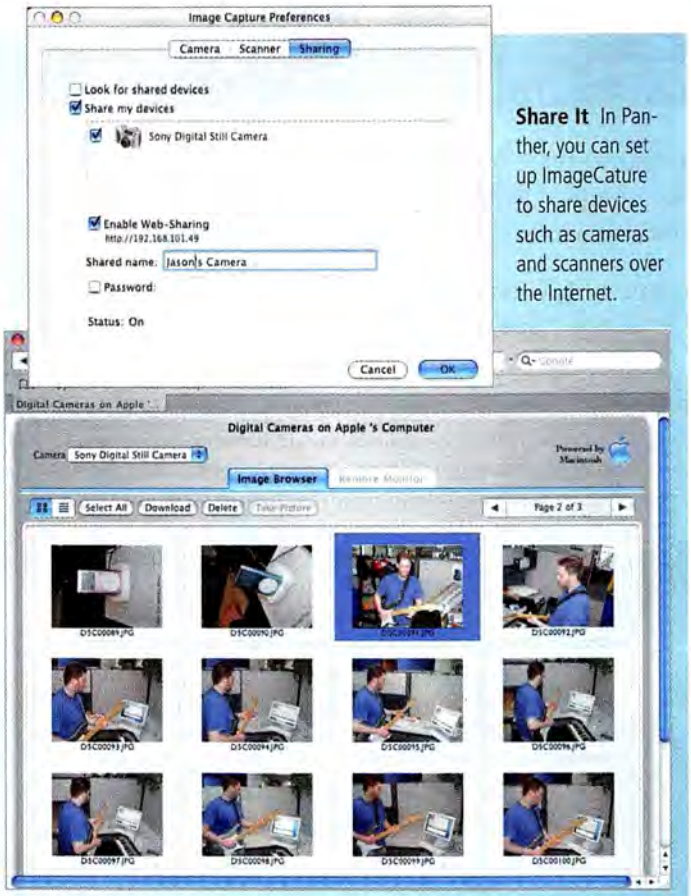
Make User Switching Even Faster

To make the switch between different active users even smoother, you can eliminate the standard Login window and avoid entering a password. Removing this safeguard will make your computer less secure, but doing so can be a real boon if you're a single user who regularly switches between different accounts—as described in the previous tip.

To skirt the Login window, make sure all users but the Administrator are logged out, and then open the Accounts preference pane. Select a user from the Other Accounts list, highlight that user's password, and press the delete key. You'll be prompted for your Administrator password. When you select another user or try to close the System Preferences window, you'll see a message that reads: "You did not enter a password for this user account. Are you sure you want to do this?" Panther asks this question for good reason: leaving the account without a password allows anyone to log into



Double Up Using the new Paper Handling options in OS X 10.3, you can easily create double-sided output.



Share It In Panther, you can set up ImageCature to share devices such as cameras and scanners over the Internet.

Remote Control When remote users type the appropriate IP address into their Web browser, they'll be able to view, download, and in some cases even take pictures with your shared device.

your Mac and perform Administrator operations such as installing software.—CHRISTOPHER BREEN

Network Machines via FireWire

If you need to connect two Macs running Panther, but you don't have an Ethernet cable handy, don't sweat it—you can use your trusty FireWire cable instead. Here's how:

Open the Network preference pane, click on Configure, and then select Network Port Configurations from the Show pull-down menu. Click on the New button, give the new configuration a name (FireWire, for example), and then select Built-in FireWire from the Port box (see "Network via FireWire").

Repeat these steps on the second Mac. When you're done, plug the FireWire cable into each machine, and make sure that the Personal File Sharing option (in the Sharing preference pane) is selected on both machines. To share files between the machines, switch to the Finder, select the Network icon in the sidebar, and then click on the Servers icon. You should see the other machine's name in the server list. Double-click on the computer's name and enter a valid user name and password. You're now connected to the other machine.—RG

TIP RECENT CONVERT?

If you recently made your way to Panther from a Windows computer, you may be wondering where all your familiar controls are. Not to worry. If you know what it's called in Windows-speak, you can use Panther's useful Windows To Mac glossary to find it on your Mac. Press ⌘-? (question mark) to open Mac Help, and type Glossary in the search field. You'll see a list of Windows features and panels along with their Mac counterparts.—KL

An Alternative Screen-Lock Method

If you're concerned about prying eyes while you're away from your desk, you can make OS X require a password to unlock your screen saver (do this in the Security preference pane). However, this means you'll need to enter a password *every* time your screen saver takes over—even if you're just sitting at your desk dealing with paperwork. But there is a way to quickly lock your screen *only* when you're stepping away from your desk: use Panther's Fast User Switching feature.

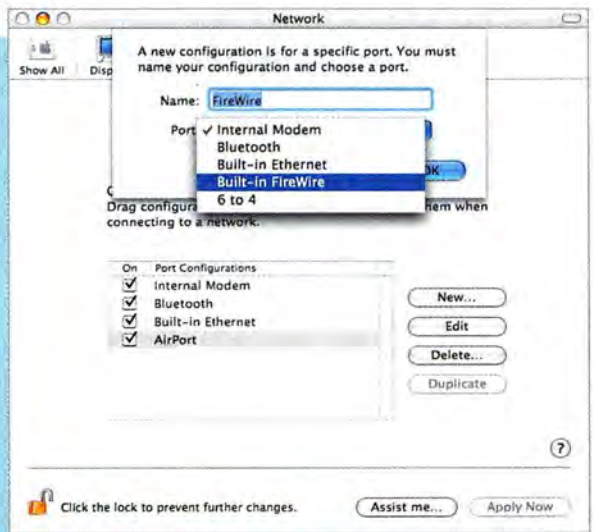
Open your Accounts preference pane, click on the Login Options item at the end of the user list, and then activate the Enable Fast User Switching option. (You can do this even if you're the only user on your machine.) Your user name will appear at the top right of the main menu bar.

When you want to lock your screen, click on your user name in the menu bar and select Login Window from the pull-down menu. Your screen will immediately switch to the standard OS X Login window. Enter your password when you return to your desk, and you'll be back at work right where you left off.

For even greater security, return to Login Options in the Accounts preference pane and set the Display Login Window As menu to Name And Password. Anyone attempting to use your machine will have to supply both your user name and your password.—RG

Take Pictures Remotely

With iPhoto 4, you can easily share photo libraries with anyone on your local network. But what if you need to share photos with someone who isn't on your network—a



Network via FireWire With OS X 10.3's FireWire-over-IP networking, anyone with a FireWire cable can make a network of 10.3 Macs.

FIX FAXING IN PANTHER

Panther includes a new feature that lets you send and receive faxes from your modem-equipped Mac. (You can turn this feature on from the Print & Fax preference pane.) This is a welcome addition, but it doesn't work as well as it might. Here are three easy ways to improve Panther's faxing know-how.

Receive Fax Notification

By default, your Mac doesn't notify you when you receive a fax—a frustrating omission if you're waiting for an important document. To correct this oversight, control-click on the folder you store your faxes in (check your Print & Fax preference pane if you're not sure where this is), and select Enable Folder Actions from the resulting menu. Then control-click on the folder a second time and select Attach A Folder Action from the menu. In the Choose A File window, select the add – new item alert.scpt file and click on the Choose button.

The next time you receive a fax, a message will pop up offering to let you view it. Click on Yes to open the Faxes folder, where the received fax (saved as a PDF file) will be already selected.

Squash the E-mail Bug

Although the Print & Fax preference pane includes an option for e-mailing received faxes, this feature may not work if you've upgraded to Panther (instead of performing a clean installation). If you've configured Panther to forward faxes to you via e-mail but that e-mail never arrives, you can put things right with Rodney Yager's free FaxEmailHelper (www.rwts.com.au/faxemailhelper). FaxEmailHelper not only ensures that the mail goes through, but also lets you specify the e-mail address the fax is sent from (to keep the message from being rejected for bearing an invalid address). It can even help test the e-mailing process by simulating a received fax.

Enable Distinctive Ring Fax Answering

Most regional telephone companies offer a Distinctive Ring service, which lets you assign as many as four separate phone numbers to a single phone line—each with its own ring tone. If you've signed up for this service, you may be able to use it to assign one of these distinctive rings to Panther's own fax service, and prevent the OS from trying to pick up regular phone calls. (Note that not all Apple modems support this feature.)

To enable Distinctive Ring answering, launch Terminal (Applications: Utilities) and type sudo pico /usr/bin/fax. In the resulting fax-configuration script, look for the line that reads INIT="-iZ -i&FE0&D2S7=120 -i&C0". (This will be line 209 unless you've previously modified the program.)

Replace this line with one that reads:

INIT="-iZ -i&FE0&D2S7=120 -i&C0-SDR=*n*"

Replace the *n* at the end of the new line with the actual Distinctive Ring number assigned by the telephone company. Typically, 1 is the normal ring, 2 is the first distinctive ring, and so on. Then save your work and quit the editor. From now on, Panther will answer the phone only when it hears the distinctive ring pattern.—CB, RG

client or a family member in another city, for example? If your Mac has its own, publicly accessible IP address, you can share a digital camera's contents over the Internet.

With a camera connected and turned on, choose Image Capture: Preferences, click on the Sharing tab, and select the Enable Web-Sharing option. Note the IP address listed under this option (see "Share It"). Anyone on the Internet can open Safari, type that IP address into the address bar, and peep at the contents of your Mac's digital camera.

In some cases, you can take this a step further and even *control* your digital camera remotely: you can spy on the room where the camera is, taking snapshots on demand. (Some cameras that support this feature are the Canon PowerShot A60, A70, S400, S50, and G5; the HP Photosmart C618 and 912; the Kodak DC280, DC4800, and DC5000; and the Nikon D1, D1X, and D1H.)

To set this up, return to ImageCapture's Sharing preference pane, on the camera the Mac is connected to. Activate the Share My Devices option and select the camera. On the receiving Mac, open Image Capture and choose Browse Shared Devices from the Devices menu. Click on the disclosure triangle, select the camera, and click on OK. If your camera is one of the compatible models, the Remote Monitor tab will spring to life, offering buttons for controlling the camera—Delete, Take Picture, and so on.

If you click on the Remote Monitor tab, you see, at full size, whatever the camera is seeing; the image is updated every minute. (The pictures are blasted to you via the Internet but aren't captured on the camera's memory card.) Click on the light-switch icon to change the shutter interval.—DAVID POGUE

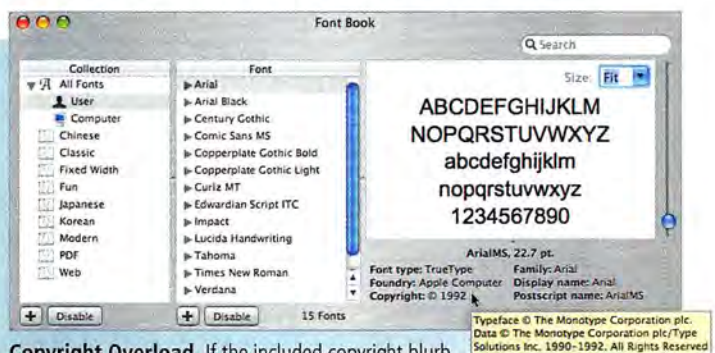
Get the Lowdown on Fonts

If you can't remember where you got a certain font, or if you're wondering where you might find others like it, Font Book's font-information box may provide the data you need.

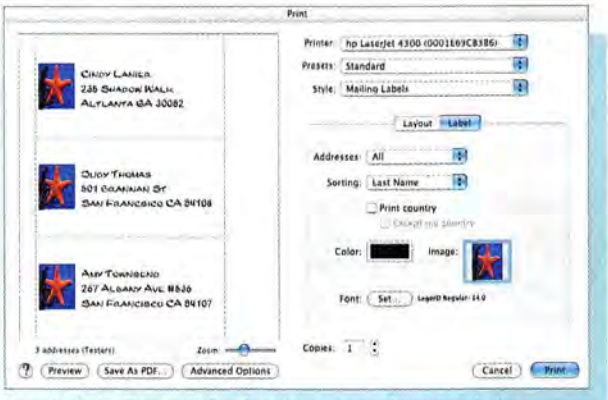
Font Book, Panther's font-management utility, offers a wealth of useful information about the fonts in your collection. Launch Font Book and click on any font name in the Fonts column. Just below the font-preview box, you'll see a small gray dot; double-click on it to reveal a font-information box showing the font's type, its foundry, its family, and additional details. If any of the data is truncated, you can reveal the full content by hovering the cursor over the truncated words. In many cases, hovering over the Copyright line will reveal detailed copyright information (see "Copyright Overload").—RG

Use iPhoto Albums as Screen Savers

In Panther, it's easier than ever to use your favorite photos as a rotating screen saver. Just open the Desktop & Screen Saver preference pane, click on the Screen Saver tab, and scroll down to the bottom of the Screen Savers list. You'll see



Copyright Overload If the included copyright blurb in Font Book isn't enough for you, just hover your mouse nearby; you'll soon see the entire copyright notice displayed in a floating box.



Easy Labels Thanks to Panther, you can now format and print address labels from within Address Book.

all your iPhoto albums—including iPhoto 4's Smart Albums. Select an album, set your timing preference, and then sit back and watch the show.

If you want to see pictures of your pet without waiting around for your screen saver to kick in, you can also use your iPhoto albums as a rotating desktop picture. Open the Desktop tab of the Desktop & Screen Saver preference pane, select the appropriate iPhoto album, click on the Change Picture option, and then choose a rotation frequency from the pull-down menu. Your desktop background will now change, using the photos in the selected album.—DF

Consolidate Software Updates

Software Update is a great way to make sure that you have the latest bug fixes and feature updates for OS X and Apple-provided software. But if you have several computers running Panther, there's really no point in downloading the same software updates—which can be very hefty files—on *every* Panther machine you have. Instead, use Software Update to save updates, so you can transfer the files to another Mac or archive them to CD in case you need to reinstall OS X later.

When you run Software Update (from System Preferences), click on an update and then select Install And Keep Package from the Update menu. Software Update will download and install the update, and it will save a copy of the installer package for later use (in Library: Packages).—DF

Label Your Contacts

To print a simple sheet of mailing labels in earlier versions of OS X, you first had to export all your data from Address Book into a separate application that supported vCard data. Panther greatly simplifies this process by letting you print labels directly from Address Book.

Open Address Book, select the contacts you want to print onto mailing labels, and then select Print from the File menu. From the Style pull-down menu, select Mailing Labels. Then click on the Layout tab and choose the type and style of labels you're using (Avery Standard 5161, for instance). To format your labels, click on the Label tab and specify which address entries to print; then select the sort order, and the font and color of the output. You can even drag an image into the Image box to place a picture on each label—perfect for holiday mailing labels (see "Easy Labels").

When you click on Print, Address Book is smart enough to print labels for only those entries that have an address—preventing you from wasting labels for e-mail–only entries in your database.—RG

TIP USE COLORSYNC TO SHRINK PDF FILE SIZES

One often overlooked Panther feature is the new ColorSync Utility (in Applications: Utilities). Even if you're not a print professional, you can use this program to refine PDF files that you work with on a regular basis, such as image-heavy user manuals, to make them leaner, faster, and more manageable—all without spending a dime on Adobe Acrobat.

Launch ColorSync Utility, and open an image-heavy PDF file (File: Open). In the Filters section of the dialog box that appears, click on New. Double-click on the newly created Untitled filter and rename it Compressed. Click on the Details button, and set the Color pull-down menu to Images (see "PDF Diet"). Set the second pull-down menu to Compression, and the third to JPEG. Choose a Quality setting—for the smallest possible file, choose Least—and then click on the Apply button (located below the Filters section). Go to File: Save As and save your PDF under a new name. To see what you've done, return to the Finder and check out the new PDF's file size—it should be significantly smaller than the original's. In our tests, we shrank a 57MB file to 4MB via this process.

There's much more you can do with ColorSync Utility, such as converting color images to black-and-white, and increasing or decreasing lightness.—RG

PDF Diet Panther's new ColorSync Utility is for more than just previewing profiles. You can also use it to slim down overweight PDF files.

DIE ANOTHER DAY

12 WAYS TO RESTORE LOST FEATURES

In addition to bringing some great new features to the Mac, OS X 10.3 (like previous upgrades to OS X) removes a few features that some Mac users rely on. Here's how to reactivate (or in some cases, rebuild) a few of Panther's obvious omissions.

Return Favorites to the Sidebar

In earlier versions of OS X, the Favorites folder—located in the Finder's toolbar—offered quick access to important files, folders, and servers. If you've mourned its loss in OS X 10.3, you'll be pleased to learn that it's not gone forever. To bring Favorites (and its heart icon) back to Panther's Finder windows and to Open and Save dialog boxes, simply open the Library folder in your user folder, and drag the Favorites folder into the Finder's sidebar.

To add aliases of new items to the Favorites folder, select the items in the Finder and press ⌘-shift-T. You now can use your Favorites folder as a repository for dozens of files and folders without cluttering up the sidebar.—CB

Create Your Own Apple Menu

Do you still miss OS 9's Apple menu, which let you access your favorite applications, documents, and folders from the menu bar? You could shell out a few bucks for a third-party replacement—but why bother, when you can use OS X's Script menu to build your own?

Open the AppleScript folder in Applications and double-click on Install Script Menu. A small script icon should appear in the menu bar. (You'll end up hiding the Script menu's default scripts in the course of this tip, but you can access them at any time from the Library: Scripts folder at the root level.)

By default, the Script menu reflects the contents of the systemwide Library: Scripts folder. However, you can also tell it to look inside the Scripts folder located in your user's Library folder. If you don't have this folder, create one—you must name it Scripts for this trick to work.

To begin building your new Apple menu, select a favored application from your Applications folder and ⌘-option-drag it into the Library: Scripts folder in your user folder. This creates an alias of the original application. Now click on the script icon in the menu bar; you should see your aliased application at the end of the list. Select it to launch the application.

Repeat this process for any other applications, documents, and folders. Adding folders to the Script menu is especially cool since you can create subfolders within these folders to better organize contents—to keep your utilities separate from your applications, for example. But the Script menu's power isn't unlimited—you may run into trouble if you try to add an alias that contains hundreds of items. For best results, reserve the Script menu for items you use very often.

The last thing you need to do is remove all the Apple-provided scripts from the menu—leaving only the aliases you've added to the menu (see "Freebie Apple Menu"). To do this, click on the Script-menu icon and select Hide Library Scripts from the pull-down menu.—RG

Browse AppleTalk Servers

If you use AppleTalk servers, you may be wondering why they seem to have disappeared in OS X 10.3. In fact, they're still there. But Apple has disabled AppleTalk server browsing by default.

To enable AppleTalk browsing, launch the Directory Access utility (Applications: Utilities), click on the lock icon at the bottom of the window, and then enter your administrator password when prompted. Activate the AppleTalk option and click on Apply. When you quit Directory Access, you should be able to browse your network's AppleTalk servers.—RG

Add New Calculator Modes

Do you miss OS 9's Graphing Calculator? Well, you can bring it back to life in OS X 10.3—along with an expression input sheet and a hexadecimal calculator.

First, open the Applications folder and create a duplicate of the default Calculator application (this gives you a backup in case something goes wrong). Control-click on your duplicate Calculator and select Show Package Contents from the contextual menu. In the resulting Finder window, select the column-view mode (View: As Columns), and then go to Contents: Resources. From the Resources folder, drag the Graphing-2D.calcview, ExpressionSheet.calcview, and Hexadecimal.calcview folders into the PlugIns folder in the previous column.

Launch your duplicate Calculator application. You should see three new options listed under the View menu: Expression Sheet, Graphing, and Hexadecimal.—RG

Set Default E-mail and Web Programs

In previous versions of OS X, you could change your default e-mail and Web programs in the Internet preference pane. But you won't find these options in Panther's System Preferences.

Freebie Apple Menu Using the Apple-provided Script menu, you can create your own replacement for OS 9's Apple menu.

GIVE NEW LIFE TO UNSUPPORTED HARDWARE

Does your favorite peripheral not work in Panther? Or worse, does your Mac not even let you *install* the new OS? Not content to let their hardware go the way of the dodo, a few developers have tried to solve these support issues and breathe new life into older computers and devices. Of course, as with any fix for officially unsupported hardware, you use these utilities at your own risk. Although many Mac users have had success with these workarounds, there's always a chance of problems—most notably, system instability.

Install Panther on Older Macs

If you want to install OS X 10.3 on a Mac that isn't officially supported, Ryan Rempel's XPostFacto may be able to help (http://eshop.macsales.com/osxCenter/XPostFacto). This open-source program currently supports a range of older Macs—including the 7300, 7500, 7600, 8500, 8600, 9500, 9600 (as well as clones based on those models), beige G3s, WallStreet PowerBooks, and a few others. Support for additional models is in development. Note that some Mac models have limitations when running Panther; see the XPostFacto documentation for details and troubleshooting advice.

TIP FIX SECONDARY VIDEO CARDS

Several Mac users have reported that Panther disables older video cards they were using to drive second monitors. Here's a possible workaround:

Assuming that you can boot into Panther on your main display, launch Terminal (in Applications: Utilities) and type:

```
sudo nvram boot-args="romndrv=1"
```

Reboot your machine. If all goes well, your second video card should be working again. But while this has worked for many people, there are scattered reports of machines that refuse to boot after this change is made. If that happens, you'll need to do a parameter RAM reset. Press ⌘-option-P-R while restarting your Mac, and keep the keys held down until you hear three chimes. When you release the keys, your Mac should boot successfully.—RG

Revive Defunct USB Devices

Although most USB input devices will work in Panther, you won't have full access to programmable buttons and other features without a specific driver. If your favorite USB input device—whether it's a mouse, a joystick, a game pad, or a trackball—doesn't offer drivers that work with Panther, check out Alessandro Montalcini's USB Overdrive ($20; www.usboverdrive.com). It supports almost all USB input devices, and it lets you assign clicks and keyboard commands to each button.

Save Your Scanner

Many scanner manufacturers have been slow to provide Panther-compatible drivers for their scanners (or drivers compatible with *any* version of Mac OS X, for that matter). Thankfully, a couple of developers have come to the rescue.

VueScan, by Hamrick Software ($60; www.hamrick.com), supports almost any flatbed or film scanner and includes advanced controls for refining your scans. You can download a free trial version of the software before you buy.

Another option is Mattias Ellert's TWAIN SANE (www.ellert.se/twain-sane/), a free OS X implementation of the open-source SANE universal scanner interface. Although its controls are not as polished as VueScan's, it may be a good option for casual scanner users who don't need advanced controls.

New Hope for Video Cards

If you've seen Apple's promotional material for OS X, you know about Quartz Extreme—the graphics technology behind OS X's eye candy. Quartz Extreme, however, is officially supported only by AGP video cards with 16MB or more of VRAM. If your Mac has a PCI card or an AGP video card with too little VRAM, check out Dangerous Wares' PCI Extreme (http://pages.cthome.net/zacks/). This freeware enables Quartz Extreme on a number of ATI cards that wouldn't ordinarily support it.—DF

ON THE CD:

For even more Panther tips, check out the excerpt from our *Total Panther* special issue—on the CD that comes with newsstand versions of *Macworld*. If you're a subscriber, view the contents of the CD online, at cd.macworld.com/2004/04/pig-green.

To set your preferred e-mail program in OS X 10.3, you now have to launch Apple's Mail program. In Mail, select Preferences from the Mail menu, click on General, and then select an application from the Default Email Reader pull-down menu. Similarly, to set your preferred Web browser, launch Safari and change the Default Web Browser setting in the program's General preference pane.—RG

Access Hidden Internet Settings

You may also want to set default applications for other types of Internet data, such as FTP transfers, newsgroups, compressed files, and so on. In OS X, these settings are stored in a single preference file—but Panther doesn't give you access to them. You can work around this problem with the help of More Internet (★★★★½; *Mac Gems*, November 2003), a free preference-pane utility from Monkeyfood.com. After installing More Internet, simply open its preference pane in System Preferences, choose the desired protocol (ftp, news, zip, and so on), and then drag your preferred default application for that protocol to the More Internet window. More Internet even lets you change your default e-mail program and Web browser without having to launch Mail and Safari.—DF

View Missing Software Updates

If you upgraded to Panther from another version of OS X, Software Update may not correctly display all your installed software upgrades—making it hard to figure out which ones you need.

To fix the problem, open your root Library folder, go to Logs, and make a duplicate of Software Update.log—for backup in case something goes wrong. To edit the log file, ⌘-click on Software Update.log, choose Open With: Other, and navigate to TextEdit or a similar text editor. Delete any entries that predate your upgrade to OS X 10.3 (Panther was officially released on October 24, 2003). Save the file and quit the text editor. When you open the Software Update preference pane and click on Installed Updates, you should see a list of all installed Panther updates.—RG

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Tell us about your Mac...

...and you could wind up with a new one.

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*Or faster CPU. Subject to availability at time of drawing.

Macworld

Design Simple Flash Games

EVERYBODY LIKES TO PLAY GAMES. SAVVY WEB-SITE designers capitalize on that enthusiasm with games that encourage visitors to stay longer and come back often. Some companies even turn fun into good business by creating and e-mailing games to clients in lieu of sending end-of-year thank-you gifts. You can join the gaming trend with a well-known program: Macromedia Flash MX 2004 ($499; 800/470-7211, www.macromedia.com).

In arcade games such as Asteroids, Frogger, and PacMan, the player moves a central character around the computer screen while either dodging or intercepting objects in its path. If you're an experienced Flash user who's comfortable with the program's ActionScript, you can create a similar game. □

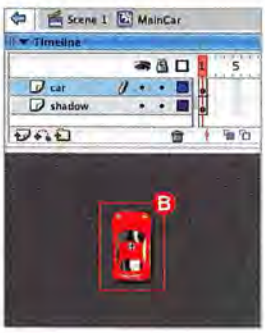
RUSSELL CHUN is the author of *Macromedia Flash MX 2004 Advanced for Windows and Macintosh: Visual QuickPro Guide* (Peachpit Press, 2003). He teaches Flash at the University of California at Berkeley's Journalism School and creates instructional media for an educational science publisher in San Francisco. You can see his work at www.russellchun.com.

1 Create Your Characters

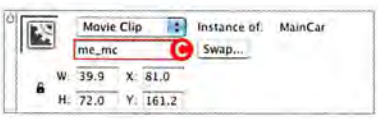
Begin by creating your game's characters. For this example, you'll create one car to represent the central character and other cars of a different color to represent the obstacles.

In a new Flash document, select Insert: New Symbol to open the Create New Symbol dialog box. Enter a name for your new symbol and choose Movie Clip as its Behavior A.

On the stage, draw a red car centered over the crosshair, which represents the registration point of your movie clip B.



Return to the main timeline, and place an instance of your new movie-clip symbol by dragging it from the Library to the stage. In the Property Inspector, enter a name for the movie-clip instance. In this example, I've named the movie-clip instance me_mc C.



Again, select Insert: New Symbol. Create another movie-clip symbol, this time a yellow car to represent the obstacles. On the main timeline, place three instances of this movie clip on the stage. Position the instances side by side above your central character (the first car, me_mc) D.

In the Property Inspector, name the movie-clip instances obstacle0_mc, obstacle1_mc, and obstacle2_mc.

Later, you'll make the yellow cars roar down the stage, where the central character must dodge them.

2 Understand Collisions

Before you give the cars motion and test to find out whether the central character collides with the obstacles, you need to know how Flash handles collision detection.

Collision detection relies on the ActionScript hitTest command. There are two ways to use hitTest: it can test whether one movie clip collides with another, or it can verify whether a specific point collides with a movie clip. Because in this game you want to know whether your central character collides with the other objects on the stage, you'll use hitTest to pit movie clip against movie clip.

Flash detects a collision when the bounding box of one movie clip intersects the bounding box of another. The bounding box is the minimum rectangular area that surrounds the shape of your movie clip—so Flash can detect

a collision even when the actual shapes of movie clips don't touch.

For example, although this car does not actually touch this oil-slick obstacle, their bounding boxes intersect, so Flash would count this arrangement as a collision A. You should keep this limitation in mind when you construct your game's characters.

Now it's time to open the Actions panel (Window: Development Panels: Actions) and enter code. Since the instance name of your central character's movie clip is me_mc, and the instance name of one of the obstacle movie clips is obstacle0_mc, your code looks like this:

```
me_mc.hitTest(obstacle0_mc)
```

If me_mc collides with obstacle0_mc, then hitTest returns a true value. So that you can respond to a collision, put hitTest inside an if statement:

```
if (me_mc.hitTest(obstacle_mc)){
  //collision happens, do something
}
```

To make your code easier to read and edit, assign this if statement to a function:

```
function testCollision () {
  if (me_mc.hitTest(obstacle_mc)){
    //collision happens, do something
  }
}
```

3 Put the Obstacles in an Array

Detecting one collision doesn't make for a very exciting or challenging game. To detect collisions with multiple obstacles, such as the three yellow cars you've placed on the stage, you'll organize the obstacles into arrays.

Arrays are containers that arrange many pieces of related information. Arrays hold data just as variables do, but arrays keep that data in a specific numbered sequence, called an index. The index begins at 0 and is numbered in ascending order so that each piece of data corresponds to a particular index number. The one-to-one correlation between index and data makes it easy to retrieve and modify information automatically. Putting multiple obstacles into an array allows you to perform the hitTest command on a single array instead of on many separate movie clips.

To associate a movie clip with a particular array, first create a new array object and then use the square brackets to reference each index:

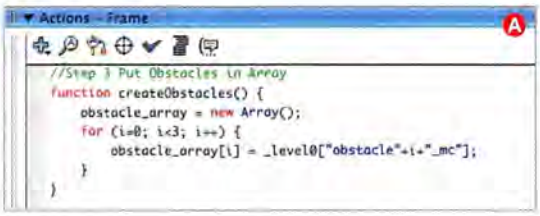
```
obstacle_array = new Array()
obstacle_array[0] = obstacle0_mc
obstacle_array[1] = obstacle1_mc
obstacle_array[2] = obstacle2_mc
```

The first line of code creates a new array called obstacle_array. In the remaining lines, the square brackets access a particular index in the array, and then assign a particular movie clip to that index. In this array, you put a reference to the movie clip obstacle0_mc in index 0, the movie clip obstacle1_mc in index 1, and the movie clip obstacle2_mc in index 2.

Using a loop, you can simplify this process. You can create an action or set of actions that automatically repeats (loops) a certain number of times, making repetitive tasks a cinch. In many cases, you use a variable as a counter, which helps the loop keep track of how many times it must repeat.

The for command is a convenient and compact way to construct a loop. Three parameters control a loop made with the for command: Init, or the starting value of your counter variable; Condition, the expression Flash tests to determine whether to continue the loop; and Next, which determines the amount to add or subtract to the counter variable after each pass through the loop.

Select your game's first keyframe, open the Actions panel, and enter this code A:



The first line after the green comment line creates a function called createObstacles. The second line creates a new array called obstacle_array. The third line sets up the loop to run three times: first when i=0, next when i=1, and a third time when i=2. When i=3, the condition is no longer met and Flash discontinues the loop.

The critical part of this code appears in the fourth line. The name of the movie clip put inside each index of the array changes according to the value of the variable, i. This is known as *dynamic referencing*. First, Flash resolves the expression within the square brackets on the right side of the equal sign (=). Then Flash looks within _level0 (the main timeline) to find that particular named movie clip, and puts it into the array. It may take a while to get comfortable with square brackets as a way to target movie clips, but it's a powerful approach that lets you target objects based on variables.

continues

4 Test for Collisions

Now that you have your three obstacle movie clips inside a single array, you can test for collisions with the central character. Again, you need a loop to test the objects in each of the index positions of the array.

On the next new line of the Actions panel, enter this block of code A:

```
//Step 4 Test for Collisions
function testCollision() {
    for (i=0; i<obstacle_array.length; i++) {
        if (me_mc.hitTest(obstacle_array[i])) {
            //collision occurs; do something
        }
    }
}
```

First, create a new function called testCollision. Within this function, establish another for loop, which begins by initializing a counter variable to 0. In the first pass through the loop, Flash tests for a collision with the movie clip in index 0 of the array. In successive passes through the loop, Flash tests the movie clip in the next higher index.

The loop continues until it reaches obstacle_array.length. Every array has a length property. The length of an array is the number of elements inside it. So an array with its index 0, 1, and 2 positions filled has a length of 3. In our example, if you make your loop continue until it reaches the condition i<obstacle_array.length, you're assured that the loop will repeat until Flash checks all the movie clips inside the array.

Using the length property of your array gives you the flexibility to manage multiple obstacles. For example, you may not yet know how many obstacles the game will have, because you want to randomize the number to keep things interesting. Or you may increase the number of obstacles as the game progresses.

So within a single for loop, you can detect collisions for all three movie clips inside your array. Even if you have 20 obstacles instead of 3, Flash automatically passes through the loop the necessary number of times and checks collisions for all 20. That's a lot of work for just a few lines of code!

5 Create the Motion of Your Characters

Here's where the fun—and the bulk of the work—begins. You create the environment and the challenges that make your game an interesting experience.

With the two functions that you've coded, createObstacles and testCollision, you now have a simple mechanism that detects collisions between your central character and the multiple obstacles. However, this is just the beginning—your character and the obstacles don't move yet, so you don't have much of a game.

Think about how you want your game to function. Do you want your central character to avoid the obstacles or to chase them? Do players move the central character with the keyboard or the mouse? How do the obstacles move, and what happens when they reach the edge of the stage? I can't explore all those questions here, so let's keep it simple. For now, just make the obstacle cars move straight down the stage at varying speeds and let the player control the central character's car with the mouse.

First create the motion of the three obstacles. To make them move at different rates, generate random speeds for each of them by creating another array that stores their speeds.

On the next line of the Actions panel, enter the two functions createSpeeds and moveObstacles A.

In the function called createSpeeds, each index position of the newly created array called speed_array holds a random number between 5 and 10. You can match the movie clip in obstacle_array[0] with its rate of travel in speed_array[0], match the clip obstacle_array[1] with speed_array[1], and so on.

```
//Step 5 Create Motion
function createSpeeds() {
    speed_array = new Array();
    for (i=0; i<obstacle_array.length; i++) {
        speed_array[i] = 5+10*Math.random();
    }
}
function moveObstacles() {
    for (i=0; i<obstacle_array.length; i++) {
        obstacle_array[i]._y += speed_array[i];
        if (obstacle_array[i]._y>Stage.height) {
            obstacle_array[i]._y = 0;
            speed_array[i] = 5+10*Math.random();
        }
    }
}
me_mc.startDrag(true); B
```

In the function called moveObstacles, you use the values in speed_array to move each obstacle. In the third line of this function, the _y property of each movie clip increases by its corresponding speed. An if statement starting on the fourth line of this function checks whether the _y property exceeds the height of the stage. If so, the function resets that particular obstacle's _y position to the top of the stage and then generates a new random speed and assigns it to that movie clip.

To make the central car follow the mouse pointer, use the startDrag command in the Actions panel B. This one line of code will make the movie clip me_mc follow the mouse cursor at its registration point.

6 Invoke the Functions and Create the onEnterFrame Handler

To affect the speed of your obstacles and put them in the array, invoke the functions you defined when you began creating the game. For both collision detection and the movement of your obstacles, you'll create an onEnterFrame handler that's triggered continuously.

On a new line in the Actions panel, invoke the functions createObstacles and createSpeeds Ⓐ. This will establish the two arrays, speed_array and obstacle_array, which you'll use throughout the game.

```
//Step 6 Invoke the Functions and Create the onEnterFrame Handler
createObstacles();
createSpeeds();
_level0.onEnterFrame = function() {
    moveObstacles();
    testCollision();
};
```

On the next new line in the Actions panel, assign the functions moveObstacles and testCollision to the onEnterFrame handler Ⓑ. Flash triggers the onEnterFrame handler at the frame rate of your Flash movie, making onEnterFrame an ideal handler to invoke the moveObstacles and testCollision functions repeatedly. If you set the frame rate of your Flash movie to 12 frames per second, then the code invokes both functions 12 times a second (even when the play head on the Flash timeline is stopped).

When you test your movie (Control: Test Movie), the three yellow obstacle cars move down the stage with varying speeds, occasionally creating gaps between the lanes, through which players can navigate the red car Ⓒ.

If they're too slow or just plain unlucky, the red car might bump one of the obstacle cars Ⓓ, in which case Flash will detect the collision with that particular obstacle.

7 Elaborate on the Game

You can add much more complexity to this basic game.

For a good game, you'll want to add a response to the central character's collision with obstacles. For example, if the player hits a yellow car, you may want to play an animation of a car crash, delete that yellow car, and keep track of the player's remaining lives. To do this, add a simple response, such as making the obstacle invisible, so you can test this collision-detection mechanism. In the Actions panel, add a line of code in place of the comment line (collision occurs; do something) in step 4:

```
obstacle_array[i]._visible = false;
```

Good games also become more challenging as they progress. Perhaps you'll want to make the obstacles travel faster, or multiply, or change lanes randomly.

No matter how elaborate your game becomes, remember that the simple collision-detection mechanism drives the basic game play, and you can use it to create many more variations. It won't take you long to realize that Flash games can be just as fun to design as they are to play.

PIN FLASH SCRIPTS

To prevent Flash from displaying or starting a different script as you select various items on the stage, you can *pin* a script. Pinning forces Flash to continue displaying the same script even if you select a different frame in the timeline or object on the stage. Pinning allows you to examine a variety of elements and situations without losing your place in the script you are creating. To pin the script currently displayed in the Script pane, click on the pushpin icon below the pane; the icon changes to a more upright version of a pushpin.

You can pin multiple scripts. To display a new script to pin, select an item in the Script Navigator. Double-clicking on the item pins its script. Flash adds tabs for pinned scripts to the area below the script pane.

The item currently selected on the stage or in the timeline always appears in the leftmost tab below the Script pane. The tab for a pinned script currently on display is highlighted in blue; tabs for other pinned scripts are gray. Click on a gray tab to select that script. To unpin a script, display it and then click on the upright-pushpin icon.

This is an excerpt from *Macromedia Flash MX 2004 for Windows and Macintosh: Visual QuickStart Guide*, by Katherine Ulrich (Peachpit Press, 2004).

Top Tax Tips

IF THE THOUGHT OF A PERSONAL VISIT FROM THE IRS leaves you trembling in the darkest corner of your receipt-strewn house, chewing your fingernails down to nubs, it's probably time to change the way you handle your finances. Fortunately, with a little bit of software and a minimal amount of organization, you can guarantee yourself a relatively stress-free tax season come April 2005.

Personal Finance Help

Intuit's Quicken ($70; 800/811-8766, www.quicken.com) not only provides an easy way to balance a checkbook and track expenses; it can also make tax time easier for individuals and small businesses.

Tax Categories Quicken ships with a number of tax-related categories in which you group expenses, such as groceries and utilities, to gain a detailed view of how you spend your money. But you can also customize existing categories and create new ones to fit your tax needs. Say you're taking night classes related to your profession and want to track tax deductions for continuing education expenses. Create a new category (Lists: Categories & Transfers) called Continuing Education, with the subcategories Books, Tuition, and Fees, and mark each as tax related. And if you know the correct tax schedule for each expense, you can associate it with the correct form. Now, every time you enter an expense in that category, Quicken will track the amount you spend.

Tax Reports Once you've created your categories and used them to record transactions, Quicken lets you print either a Tax Summary Report—a simple report that details your tax-related income and expenses for your accountant—or a more detailed Tax Schedule Report, which assists the do-it-yourself tax filer by itemizing income and expenses under the relevant tax forms. Quicken uses the same information when you import your expense and income data into TurboTax, eliminating the need to enter it all by hand.

Quicken Tax Planner There's no worse surprise than completing your taxes only to discover that you're not getting a fat refund check after all—*and* that you owe the government a payment on April 15. To avoid this, turn to Quicken's Tax Planner (Activities: Planning Calculator: Tax). This simple tool lets you enter salary information, current withholding amounts, and a variety of other financial information, to determine how much you'll owe at the end of the year. You can then easily adjust your withholding to bring your year-end tax liability closer to zero.

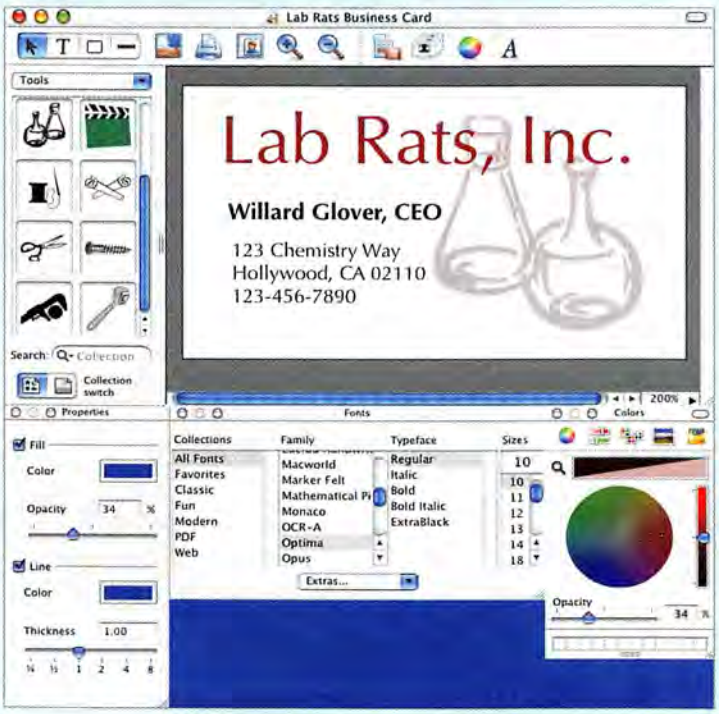
Gaining an Edge with MYOB

MYOB AccountEdge ($299; 800/322-6962, www.myob.com) has an amazing collection of tools for managing nearly every aspect of your business, including your year-end tax needs.

Inventory Management Whether your fiscal year ends in June or December, getting an accurate count of the products on your shelves is nearly as important as getting customers into your store or onto your site to buy them. While AccountEdge can't do the counting for you (you'll need to enter that data), it *can* print an

COMPOSE YOUR OWN CARDS

When you can't afford a professional graphic designer to create your business cards, try Business Card Composer, from BeLight Software ($40; www.belightsoft.com). Version 2 has 30 new designs and provides links to an online print shop that can deliver finished cards to you within days; you can also print your own cards.—TERRI STONE



Inventory Count Sheet (Reports: Inventory: Inventory Count Sheet), detailing your stock information so you can make sure your inventory and your shelves agree.

Quarterly Returns When you run your own business, you must pay quarterly income, unemployment, and withholding taxes. AccountEdge includes several tax and compliance reports (Reports: Payroll: Tax and Compliance) that make it easy to fill out the quarterly IRS forms. Each report indicates, by form and line number, the exact information you need to enter.

Free for All You don't often get something truly useful for free, especially without strings attached—but that's just what MYOB AccountEdge offers. Buy a copy for your business and fill out the form at www.myob.com/us/promo/acctfree, and the company will send a copy of AccountEdge to your accountant, free of charge. No more exporting data to Excel or forcing your accountant to thumb through a coffee-stained copy of your balance sheet: just e-mail your cross-platform data file and sleep easy (at least until you get the bill).

Quintessential QuickBooks

Intuit's QuickBooks Pro 6.0 ($300; 888/246-8848, www.quickbooks.com) uses an intuitive checkbook-ledger interface to keep your business finances in line. And it includes a long-awaited feature: easy data-file conversion between Mac and Windows versions of QuickBooks. Now when you want to send a copy of your data file to someone who uses Windows (as most accountants do), just select File: Create A File For QuickBooks Windows. When your accountant makes changes and sends the file back to you, QuickBooks for Mac opens it without a hitch.

Living Free from Fear

Collecting all the information necessary to create a legitimate tax return isn't much fun, but it beats the heck out of sitting in a sweat-stained chair, face-to-face with your not-so-friendly neighborhood IRS agent. And if the IRS does come calling, you'll be well prepared. Just keep in mind that when your tax situation is complicated, it's wise to bring in a professional. □

6 SAFARI SECRETS

Explore the Internet more boldly with these tips for Apple's free Safari browser (www.apple.com/safari/) tucked under your cap:

1. Check Your Spelling Safari is a Cocoa application, so it can access OS X's built-in spelling checker whenever you type in a text box. For example, if you're in Macworld.com's discussion forums, the easiest way to avoid errors that may make other posters snicker is to enable the Check Spelling As You Type option (Edit: Spelling). It marks misspelled words with the standard red underlines. Control-click on them to see and select suggested replacements. Safari remembers your preferences and makes sure it's on whenever you're typing in a text box. If you don't want the spelling checker on all the time, you can press ⌘-; (semicolon) after you're done typing. The program will leap to the next misspelled word. Repeat as necessary to go through your text and identify each goof.

2. Find That Link If you hit a broken link and suspect that the page you want to see has moved to a new spot in the site, Safari makes finding that page easy. Just ⌘-click on the window's title bar and choose a higher-level directory from the pop-up menu that appears.

3. Stop Typing Don't like entering contact information repeatedly in online order forms? Select Safari's AutoFill option in the Preferences window. Safari will fill in contact information taken from your entry in the systemwide Address Book, so make sure you've created an entry for yourself there. Safari will guess at a lot of other fields in Web forms. You ask it to fill in forms by clicking on the AutoFill button in the toolbar.

4. Open PDFs Painlessly A PDF file on the Web can be annoying, since you must download it, open it in Acrobat Reader or Preview, and then see whether it contains useful information. For a more efficient approach, download and install Manfred Schubert's free PDF Browser Plugin (www.schubert-it.com/pluginpdf/). It lets you view PDFs in Safari (and some other Web browsers), complete with zooming and printing. You can even use it to open PDFs in your default PDF viewer.

5. Don't Get Stuck If Safari seems to get stuck in the middle of downloading a GIF image on a particular Web page, try freeing it up with the age-old Mac shortcut for "Hey, stop that!"—the venerable ⌘-. (period).

6. Seek Out Shortcuts For a stealthy list of Safari keyboard and mouse shortcuts, type this URL into the address field and press return: file:///Applications/Safari.app/Contents/Resources/Shortcuts.html.—ADAM C. ENGST

See the Future Now Quicken's Tax Planner tool helps you predict your future tax liability before it's too late to change your withholding amounts.

REMOTE CONTROL

Netopia has upgraded Timbuktu Pro, the venerable application for controlling computers from afar, to version 7 ($95; 800/485-5741, www.netopia.com). Besides running in Mac OS X 10.3 and supporting its Fast User Switching, Timbuktu Pro 7 has a Profile service that retrieves Apple System Profiler information from your remote machine.—TERRI STONE

JEFFERY BATTERSBY always pays his taxes and has no interest in having a close encounter with the IRS.

Working Mac is a monthly collection of tips that will help you be more efficient—and help you get home in time for dinner. We want to hear from you! If you've got secrets to share or suggestions for column topics—or if you just want to tell us what you think of *Working Mac*—e-mail us at workingmac@macworld.com.

Seeing the Big Picture

BACK IN THE DAYS OF FILM PHOTOGRAPHY, I'D CAPTURE wide vistas by shooting several overlapping photos. Then I'd line up my prints on the dining-room table and paste them together to create a crude panorama.

The digital world is a much better place. Now you can transfer your shots to your Mac and use special software to *digitally* stitch them together into a single, seamless image. When you're done, you can print your panorama on a photo printer or bring it into iPhoto and order prints.

These days, you can get great outdoor panoramas with nothing more than a handheld digital camera and the stitching features in Adobe Photoshop Elements ($99; www.adobe.com) or similar photo-editing software. However, to get the best results from these programs, you need to know how to set up your shots.

Shoot, Turn, Repeat

In a good digital panorama, the seams between overlapping photos should be invisible. Although Photoshop Element's Photomerge feature does a fine job of blending multiple images, it can do only so much. It can't compensate for gaps in your image or vastly different angles or exposures. (For a primer on creating panoramas in Photoshop Elements, see "A Stitch in Time.") To get truly seamless panoramas, you need to shoot your photos with stitching in mind.

Watch the Overlap When you shoot a panorama, keep roughly 20 to 40 percent overlap between each consecutive image. Many digital cameras offer a panorama mode, which displays a small version of your last shot on the left side of the camera's LCD screen. This makes it easy to position the camera for the next shot.

If your camera lacks a panorama mode, you'll need to gauge your overlap manually. As you're taking each shot, locate a landmark or other reference point somewhere in the right half of the frame. Then carefully rotate the camera to make sure that same reference point also appears in the next image. Do your best to rotate the same distance between each shot.

Consistency Counts You also want to avoid significant variations in brightness from one image to the next. You don't need to worry about this if you're using your camera's panorama mode—the camera will lock the exposure and white-balance settings after the first shot to ensure consistent lighting for the remaining shots. However, if your camera lacks a panorama mode, you can maintain consistency by using one of its manual white-balance settings instead of automatic white balance, and by activating its exposure-lock feature. Refer to your camera's manual if you're not sure how to do this.

On the Level Of course, the most important step in getting a good panorama is simply to *stay put.* Any changes in camera location, height, or level may make it difficult to match up photos in the stitching process—creating unwanted distortion and noticeable seams.

Ideally, you should try to rotate the camera over the optical center of its lens. If you're shooting outdoor panoramas of distant scenes, a tripod can help keep things level. But don't worry if you don't have one (I held my Canon S-50 in my hand when taking the example panorama). When holding your camera, firmly plant your feet, lock your elbows as close to your body as possible for extra support, and then slowly rotate your body from the waist to keep a tight arc. And whatever you do, don't adjust your zoom between shots. Remember, consistency is key.

Camera positioning is even more critical for indoor panoramas and for outdoor scenes containing nearby objects. In these cases, even a tripod may not give you sufficient rotation. Because a camera's tripod-mounting hole is typically offset, the camera doesn't rotate over the center of the lens. As a result, your panorama will probably have visible flaws—for example, the edges of a doorway might appear twice.

You can often fix these problems with a little work in Photoshop. Another solution—albeit an expensive one—is to buy a panorama tripod head, such as the $180 KiWi-L, from Kaidan (www.kaidan.com). Its

NOW ON THE iDVD MENU

Tired of iDVD's canned menu themes? To spice up your menus with professional flair, check out the assortment of themes available online. For example, iDVD ThemePak (www.idvdthemepak.com) currently offers six CDs of themes at prices ranging from $29 to $49. Each set contains eight designs—some with animated backgrounds and drop zones. The company also offers several free themes.

Another option is iDVDThemes, which offers standard themes and a collection of whimsical holiday themes, including a snowman with animated snow ($13; www.idvdthemes.com). If you don't want an entire collection, check out iDVD Themetastic, which sells individual themes ranging from soccer to a casino, each for less than $10 (www.idvd-themetastic.com).

Pictures That Awe A single photo can show only a slice of life. To capture the bigger picture, use Photoshop Elements or similar photo-editing software to stitch separate photos together into a breathtaking panorama.

adjustable brackets enable you to position the camera so that it rotates correctly.

Printing Panoramas

Once you've stitched together your individual shots in Photoshop Elements or another stitching program, you should end up with a single panoramic image—a very *wide* panoramic image. At full size, my panorama measures roughly 11 inches tall by 36 inches wide—and it's composed of only *four* images.

Although you can print a panorama on any standard photo printer, a letter-size sheet of paper simply doesn't do your image justice. It reduces your beautiful mountain range or desert vista to a narrow strip only a few inches high. But there are plenty of better ways to commit a panorama to paper.

Roll 'Em Many photo printers can accept roll-fed paper, which can produce dramatic, banner-size panoramas. If your printer is among them, choose the Landscape option in the Page Setup dialog box. Under Paper Size, choose the option that corresponds to roll-fed or panorama paper.

If you're printing from Photoshop Elements, go to Print Preview and click on the Scale To Fit Media option. If you're printing from iPhoto, click on the Print icon and choose Full Page from the Style menu.

Keep in mind that printing panoramas isn't cheap. A 30-foot roll of Epson's photo paper costs about $40—and nothing drains pricey ink cartridges faster than photos two feet wide. Installing and working with roll-fed photo paper is cumbersome, too; I tend to waste a foot or two of paper for each panorama I print.

Ordering Prints For results superior to anything you'll get from an ordinary photo printer, order photographic prints through iPhoto. A 20-by-30-inch print costs $20. However, you can take advantage of the panorama's narrow orientation by placing two panoramas on one print.

In Photoshop Elements, create a new file slightly more than twice as tall as your panorama, and then drag two panoramas into the new file. Save the file in JPEG format with a compression setting of 12. (This minimizes JPEG compression. Next, drag the combined JPEG into iPhoto and order your print. When it arrives, carefully cut the two panoramas apart.

For more tips on creating panoramas, or for information about putting panoramas online as interactive QuickTime VR movies, go to www.macilife.com/digitalhub. □

A STITCH IN TIME

Photoshop Elements isn't the only software than can stitch together panoramic images, but it's one of the easiest to use. Its Photomerge feature (now also included in Photoshop CS) makes short work of seamlessly blending multiple photos.

Step 1: Open Your Shots

In Photoshop Elements, choose Create Photomerge from the File menu. (In Photoshop CS you'll find this feature under File: Automate: Photomerge). From the Photomerge dialog box, open all of the images in your panorama.

Step 2: Refine Your Stitch

Photomerge will attempt to position the overlapped shots and then blend them Ⓐ. You can fine-tune overlaps by hand if necessary. If you find the blends a little choppy, try turning on the Advanced Blending option under Composition Settings Ⓑ.

Step 3: Crop and Polish

If you held your camera while shooting, your panorama will probably have ragged edges. To fix this, select the Crop tool, click on the Front Image button in the control bar, and then drag your mouse to define the area to crop. Press return to confirm the crop.

Contributing Editor JIM HEID stitched his first digital panorama in 1995. He's the author of *The Macintosh iLife* (Peachpit Press/Avondale Media, 2003).

Digital Hub is a monthly collection of tips and strategies for anyone who creates movies, music, or photographs for personal use. We want to hear from you! If you've got secrets to share or suggestions for column topics—or if you just want to tell us what you think of *Digital Hub*—e-mail us at digitalhub@macworld.com.

What's in a Font?

GONE ARE THE DAYS WHEN YOU KNEW WHAT YOU WERE getting when you bought a font—back when fonts could hold about 225 characters (PostScript Type 1s, for example). Now we're in the era of OpenType fonts, which can contain tens of thousands of characters and even do tricks with these characters, such as automatically substituting one for another.

Character-Set Icons At www.linotype.com, icons indicate the contents of each font. Click on an icon to open a window explaining the characters or features it represents.

Some font companies charge more for these tricks. We don't begrudge them the price hike—it does take more work to extend a font's capabilities. But if a particular OpenType font looks and acts just like an old-fashioned font, you wouldn't want to pay extra for it. Once you understand what OpenType fonts have to offer, you can make sure you buy only fonts that have exactly the features you need.

What Flavor to Choose?

OpenType unites the two main competing font formats: PostScript and TrueType. An OpenType font can hold either TrueType or PostScript font data (that is, the scalable drawings describing all the characters a font contains). TrueType fonts use one technology for these drawings; PostScript fonts use another. From an artistic point of view, there's no reason to choose one over the other, and you can edit both in drawing programs such as Adobe Illustrator.

However, there *are* important differences between the two font types.

Character outlines are filled with pixels for on-screen or print display. Because it's hard to reproduce character shapes faithfully with few pixels (as on computer monitors), instructions called *hints* are written into fonts to ensure that an optimal arrangement of pixels is displayed.

TrueType fonts use a more sophisticated hinting scheme than PostScript fonts, so fastidious designers of pages that will be displayed on monitors or TVs tend to favor TrueType fonts or OpenType fonts that use TrueType outline data.

Among print designers, a bias against TrueType fonts lingers. This bias is based on problems—now long gone—with using TrueType fonts on high-resolution imagesetters. Don't let that outdated prejudice sway your buying decision. For imagesetter output, it doesn't matter which kind of outlines your OpenType fonts contain.

Do You Need a Hint? Font vendors rarely advertise which kind of outline data their OpenType fonts have, but most (including Adobe and Linotype) favor PostScript. If you need to know this information, you'll probably have to ask.

A Question of Character Set

The character sets of the vast majority of OpenType fonts vary little from those of older PostScript and TrueType fonts. Most type foundries simply convert their libraries to the new format with a minimal facelift; they may also roll auxiliary expert-set fonts into the principal font. For example, when Adobe converted its entire font library to the OpenType standard format, it added fewer than two dozen new characters. OpenType fonts from Linotype Library have similar standard character sets.

Other font vendors are planning a high-end line of fonts with larger character sets. Popular additions include true small capitals, old-style numerals, fractions and fraction-building numerals, and more liga-

STREAM FLASH ON THE MAC

Because Macromedia's Flash Communication Server MX 1.5 runs only on Windows, Mac users who wanted to stream Flash content that included video had to buy a PC—that is, until Macromedia teamed up with VitalStream to create the Macromedia Flash Video Streaming Service.

Price depends on several variables. To get a price quote for the service, go to www.vitalstream.com/macromedia/streaming-signup.asp. To try before you buy, head to www.vitalstream.com/macromedia/streaming-trial.asp. You can also call 800/254-7554 for a quote or a free trial.—TERRI STONE

tures. Some plan to add Cyrillic and Greek characters for full Western-language support.

Pick the Right Characters There are a couple of ways to determine which extra characters are in a font. Scour company Web sites for content descriptions. On the Adobe and Linotype sites, for example, icons indicate extras such as titling capitals, proportionally spaced numerals, and ornaments. Also, you can often request that a type foundry send you a brochure or sample book that shows exactly what's in a given font.

Layout Features

OpenType fonts can include instructions that describe various *layout features*, which allow them to do more than just serve up a character when you press its key. These features are optional and vary from font to font.

Most layout features relate to non-Latin scripts, but the most significant one for Western Mac users controls how a single character can be represented by alternate glyphs. This means that an OpenType font can, for example, automatically provide old-style numerals (1, 2, 3, 4) instead of the familiar, bulkier lining numerals (1, 2, 3, 4). Or the font might substitute small capitals, fractions, or ligatures.

Another layout feature allows an OpenType font to include several sets of character outlines for use at specific size ranges. Smaller type could be heftier for better legibility, while larger type could be more delicately rendered.

Find the Features You Need When you want font-substitution capabilities, search the marketing material for terms such as "automatic character substitution." Fonts with alternate outline designs may be called "opticals."

OpenType and Applications

To benefit from the snappy layout features in some OpenType fonts, your programs must be OpenType savvy. Only a handful of programs fully support OpenType's layout features, and most (InDesign, Photoshop, and Illustrator) come from Adobe. Quark hasn't pledged such support until QuarkXPress's next major upgrade, probably version 7.0. However, OS X's Character palette grants you access to all OpenType characters, and Font Book can show you the entire character set in a single window (choose Repertoire from the Preview menu).

You Can Avoid Sticker Shock

When you buy a new car, you can read the window sticker to see all the bells and whistles it offers. Unfortunately, font vendors don't yet agree on a way to describe the contents and features of OpenType fonts. Doing your own research requires more effort, but the rewards are worth it. □

NEW TOOL FOR PACKAGING

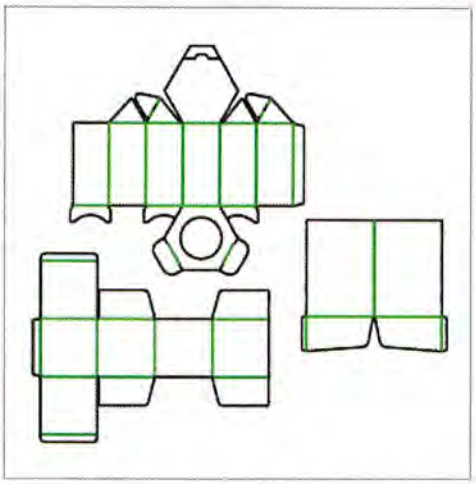
In the past, creating prototypes of three-dimensional packages has been low tech (paper, scissors, and glue) or high tech (expensive, complicated 3-D programs). Either way, it hasn't been quick and easy.

Comnet (www.comnet-network.co.jp/eng) hopes to change that with a $379 plug-in for Adobe Illustrator called FoldUp 3D. It's available from ThePowerXChange (877/940-0600, www.thepowerxchange.com) and Publishing Perfection (800/782-5974, www.publishingperfection.com).

Once you've imported a two-dimensional template or created one in Illustrator, FoldUp 3D lets you fold the template into a three-dimensional object. You can rotate it, try different colors and patterns, and tweak other aspects, such as package openings.

FoldUp 3D runs in OS 9 and OS X, and it's compatible with Illustrator versions 8 through 10 and Illustrator CS.—TERRI STONE

Two Dimensions Begin by importing a two-dimensional template from a CAD program, or create your own in Adobe Illustrator. Then you'll designate the package's folds.



Change Your Mind Not sure whether your box should have a window on the side or on the top? Try them both! The window will retain its transparency regardless of its position.

Detail Oriented You can change significant aspects of your packaging, such as color, and fine-tune subtle details, such as pattern orientation.

JAMES FELICI, one of the founding editors of *Publish* magazine, lives and works in the south of France. He is the author of *The Complete Manual of Typography* (Peachpit Press, 2002).

Create is a monthly column for professional print and Web designers and audio and video pros. We want to hear from you! If you've got secrets to share or suggestions for column topics—or if you just want to tell us what you think of *Create*—e-mail us at create@macworld.com.

Laptop Lockdown

LAPTOP OWNERS ADORE POWERBOOKS AND iBOOKS FOR their snazzy looks, light weight, and excellent resale value. Unfortunately, thieves like them for the very same reasons. And the person who steals your laptop not only nabs your hardware but also may gain access to financial records, corporate data, credit card numbers, and other sensitive information. There are ways to protect your computer and your data. Whether you lash down your laptop with steel cables or apply military-grade data encryption across your hard drive, protecting your laptop takes some effort—but it may be easier than you expect.

Secure It

You spent a lot of money on your iBook or PowerBook, so you don't want to leave it lying around. Although fancy computer cases and bags are great for carrying and protecting your laptop from harm, they're also good at drawing attention to what's inside. When you're on the road, consider dressing down—swap your flashy computer case for a protective notebook sleeve, which can be tucked into any nondescript bag or backpack. Other commonsense techniques provide security that's stronger than any gadget—always lock your laptop in the trunk when you must leave it in a car, or stash it in a drawer when you leave it in a hotel room or an office cubicle.

Lock It Down All Apple portables include a Kensington Security Slot. It's usually located near the modem port, marked by a padlock icon. To physically secure your laptop computer, loop a steel security cable around room fixtures or hefty furniture, and then lock the cable into the slot.

Kensington markets its own MicroSaver brand of cables ($57 to $80; www.microsaver.com) made from aircraft-grade steel and Kevlar fiber. However, since the Kensington-size slot is a widely used standard in the PC world, too, you can often find third-party cables that cost less. Not all manufacturers boast the fancy materials or custom-key solutions that Kensington does, but let's face it—to a grab-and-run thief, steel cables all look alike. If you'd like a thicker cable but don't want to fumble around for keys, check out the $36 Universal Combo Notebook Lock, from AppleLocks.com, which features a combination lock.

A security cable's weak link is a lazy user—tying up a computer is a hassle, and carrying steel cables can be a drag. For some users, Kensington's travel-size $30 Retractable MicroSaver is a sensible compromise between convenience and security, since it uses a thin retractable cable that's more portable. (Note that cable locks are being confiscated from carry-on luggage in some airports, for security reasons.)

Make It Loud Sonic alarms are another way to tie down your laptop. The $50 Targus Defcon 1 Ultra Notebook Computer Security System (www.targus.com) greets would-be thieves with a shrieking, 95-decibel wail. Kensington's $45 SonicLock Motion-Detecting Alarm (www.kensington.com) offers similar protection. Both devices are motion-triggered alarms that also plug directly into the Security Slot; arming or disarming them requires a key combination.

Some alarms, such as the $60 TrackIt (www.trackitcorp.com), consist of a small radio transmitter and a receiver with a sonic alarm. Drop the alarm in your laptop bag, and if the signal between it and the transmitter is lost, the alarm sounds. (These devices punish thieves *and* absent-minded owners.)

Label It For laptops that can't always be hidden or secured (for example, iBooks in a classroom), easy-to-spot "asset recovery" stickers are an excellent way to discourage theft. These prominent identification labels consist of aluminum plates and superglue-strength adhesives; they leave a permanent tattoo on your machine if they're removed. The security plates (and the tattoo) explain that you've registered your laptop with a tracking and recovery agency, and they boldly feature toll-free retrieval numbers that any police department, pawnshop, or Good Samaritan can call.

STOP plates ($26 per plate, includes lifetime recovery service, volume discounts available; www.stoptheft.com) were chosen for the 32,000 iBooks in

PUMP YOU UP!

Next time you need some motivation to exercise, don't call your personal trainer—just reach for your iPod. Judging by the popularity of Arnold "The Governator" Schwarzenegger's Total Body Workout on the iTunes Music Store, fitness and the iPod can go hand in hand. If you're really serious about your workout, check out Personalized Workout Systems' $20 MP3 Gym (www.mp3gym.com).

MP3 Gym gives you 192 different MP3 files covering more than 60 exercises—a personal trainer instructs and motivates you through three levels of workout intensity during eight preset routines. You can also customize your own routines from more than 100,00 workout-routine combinations, and MP3 Gym even includes illustrated PDF routine sheets for following along and taking notes.—JONATHAN SEFF

Henrico County, Virginia, schools. And when you purchase Securitrac tags ($20 per three-plate pack, includes lifetime recovery service; www.securitrac.com), the company pays for shipping and offers cash rewards for the return of lost laptops.

If you can't spring for these expensive stickers, put at least some kind of label on your computer, with a phone number or an e-mail address. Not all missing laptops are stolen—some are just lost.

Protect Your Data

Guarding your data is just as important as securing your machine. After all, buying a new PowerBook is usually easier than fighting a wicked bout of identity theft or corporate extortion.

Login Security For desktop Macs running OS X, automatic login is usually safe. But with laptops, it's better to turn off this option. In OS X 10.3, open the Accounts preference pane, click on Login Options in the lower left corner, and deselect the Automatically Log In As option. To allow for a benevolent individual finding your PowerBook if you lose it, have your Mac log in to a harmless guest account that contains recovery notes but little else. OS 9 users can use the Security control panel for a similar effect. Also, consider enabling a wake-from-sleep or screen-saver password as well.

Unfortunately, a savvy crook can eventually bypass screen savers and login passwords. Real privacy, therefore, demands data encryption, which scrambles your files so that only the correct passkey can unscramble them.

FileVault Apple touts FileVault as one of Panther's best features—it can encrypt your drive using a hefty 128-bit AES encryption scheme. Once you enable FileVault, you probably won't see a difference in day-to-day interaction with your computer—the continuous encryption and decryption of your working files is handled by Mac OS. In theory, it would take a thief a few trillion years to crack into your user folder without the right password. (Some users have experienced data loss when using FileVault. Apple recommends updating to the latest version of Panther to avoid problems, but we suggest using FileVault with caution.)

Disk Image If you're hesitant about encrypting your entire Home directory but need to safeguard a few sensitive files, store them in an encrypted disk image instead. To make one, launch Disk Utility (found in Applications: Utilities), click on New Image, and then choose AES-128 from the Encryption pull-down menu.

Track It Down

Even if someone steals your iBook, it may not be gone for good, thanks to tracking software. Hidden tracking software works like this: If your laptop moves to a new network, and then reconnects to the Internet, a terse message describing the technical details of its new location is secretly broadcast via the Internet. The hapless thief who steals a laptop from your workplace and then test-drives it by logging in to his AOL account at home is in for a surprise—he has unwittingly handed over information that law enforcement and ISPs can use to pinpoint his location.

Some examples of Mac tracking software are SweetCocoa's $25 LapCop 2.0 (http://homepage.mac.com/sweetcocoa/), for Jaguar and Panther, and Stealth Signal's XTool Computer Tracker ($49 for one year, discounts for longer contracts available; www.stealthsignal.com), for OS 9 and OS X. Both apps communicate via a client-server method that's more reliable than other SMTP-based solutions. XTool includes an additional feature that speeds up the tracking process. If possible, it uses the modem to dial a toll-free number daily, thereby initiating a billing process that identifies the phone number being used—even if it's a blocked or unlisted number.

None of these programs will work unless a thief plays around with your computer. To encourage this, set up a guest account on your system, as suggested previously.

Tracking programs aren't fail-safe protection. But if you're keeping guard at a school or a workplace—places where laptops are commonly stolen—the right software can help. □

JASON COOK previously managed product development for HotBot.com and Webmonkey.com. His shiny iBook has been the envy of some of the world's most notorious thieves. But it's still safe.

PORTABLE PROJECTION

Tired of lugging around a bulky projector when you're traveling for business? Check out Olympus's new VP-1 Data Projector (www.olympusamerica.com). This $2,495 compact digital projector produces 1,000 lumens of brightness with a contrast ratio of 2,000:1—in a 2.4-pound package that measures just 1.85 inches high, 7.1 inches wide, and 6.4 inches deep.

The VP-1's Digital Micromirror Device chip and Olympus Zuiko Digital Lens work together to produce an image with tons of detail, and four-way digital keystone correction makes sure your images look good even when they're projected from an uneven surface.—JONATHAN SEFF

Mobile Mac is the place for tips on making the most of your PowerBook, your iBook, or their sidekicks. We want to hear from you! If you've got secrets to share or suggestions for column topics—or if you just want to tell us what you think of *Mobile Mac*—e-mail us at mobilemac@macworld.com.

I Spy with iSight

IN SEVERAL RECENT INCIDENTS, THIEVES HAVE STOLEN equipment worth thousands of dollars from Brigham Young University. The staff of one department took matters into their own hands and set up a surveillance camera. The perpetrators were promptly recorded and arrested. And no high-end, expensive equipment was necessary—just Apple's $150 iSight camera and a $20 software program called EvoCam.

Whether you're checking on your pets or protecting your business from criminals, you can set up your own sophisticated surveillance system.

Just One Look

EvoCam, from Evological Software (www.evological.com), is one of the most versatile applications you can use with an iSight (800/692-7753, www.apple.com). The program provides motion detection, movie recording, built-in Web serving, e-mail notification, and a host of other options.

When you use it as part of a one-camera security system, the setup is straightforward. Point your iSight at the area you want to monitor. If that area is more than a few feet from the host computer, buy additional FireWire cables; depending on the cable quality, you'll gain 20 to 30 feet. To span longer distances, you'll need more cable and a FireWire repeater such as the $39 FH-110, from Macally (626/338-8787, www.macally.com), which adds another 15 feet. You can add a repeater and more cable every 15 feet.

Once you've hooked up the camera, create a motion-detector sensor: click on the New Item drop-down menu in the Items tab of EvoCam's main window, and choose Sensor. Position the movable sensor in an area of likely activity, such as a door. You can create additional sensors if necessary.

SecuritySpy Options SecuritySpy's Camera Setup pane gives you lots of options, including motion-detection capabilities.

Now go to the On Motion drop-down menu and choose Refresh or Record Movie. Refresh takes a still photo when EvoCam detects motion, and Record Movie starts a video sequence. Set the video duration for at least 15 seconds, so you can get a good look at the activity.

In the Recording tab (also in EvoCam's main window), choose compression settings for the captured video. I start with 10 frames per second at medium quality to keep the file sizes down; then I review the sample footage. For better rendering, try 15 frames per second at high quality.

When you return to the area where the iSight has been on duty, you can log on to your Mac and review the still images or movies. If the motion detector is activating too easily, such as when a houseplant bends in the breeze of an air conditioner, use the sliding scale in the Items tab to decrease its sensitivity.

If you have a broadband Internet connection, you can instruct EvoCam to upload still images to your FTP server, or to attach them to e-mail messages and automatically send them to you. You can also set up a constantly refreshing Web page that you can check from any Internet-connected computer. These options provide nearly unlimited flexibility—EvoCam can even send notifications with images to an Internet-enabled phone for nearly real-time monitoring.

Do a Double Take

You can monitor two or more areas, but you'll need more iSights and some supporting hardware. The simplest configuration involves adding a FireWire hub to your Mac and then plugging an iSight into each port in the hub. Your Mac can recognize each camera separately, even though they're connected to the same FireWire port on your Mac.

You have a couple of software options. EvoCam lets you open a window for each camera. You can configure the settings individually or copy them from one iSight to another. You can even show a picture within a picture by clicking on the Items tab and choosing Video under the New Item drop-down menu.

Another application well suited to multicamera setups is SecuritySpy, from Bensoftware ($50 for one camera, $100 for two to four cameras, $200 for five to eight cameras, and $400 for unlimited cameras; www.bensoftware.com/ss/). SecuritySpy includes many of

the same features as EvoCam, such as motion detection, time-lapse capture, FTP upload, Web serving, and e-mail notification. But SecuritySpy's real strength is how easily it manages multiple-camera setups.

With SecuritySpy, you can connect cameras to your Mac in several ways: through FireWire hubs and repeaters; via a network that communicates over Ethernet; with analog cameras connected to a quad video processor (images are digitized by a converter); and even with USB Web cams plugged directly into your Mac. I tested the application using FireWire hubs and repeaters with iSight cameras, but if you already have analog cameras, SecuritySpy makes it relatively painless to migrate to a Mac-based system.

SecuritySpy also lets you pan, tilt, and zoom your camera remotely. Another bonus: you can set up SecuritySpy to automatically restart if it crashes. This feature can keep it up and running, even if your Mac hits a bump in the road.

Many Cameras, No Wires

When I installed my own security system, even the simplest two-camera setup had me tangled up in wires. I wanted to occasionally move the second camera to different locations without having to rewire the entire building. I turned to EvoCam because of its Web-serving setting and its support for Rendezvous, Apple's networking technology.

You can set up a second iSight on an AirPort-enabled Mac, preferably a laptop, and broadcast the feed to the monitoring computer that's running either EvoCam or SecuritySpy. The wireless camera will work seamlessly with other iSights connected by FireWire or other means.

This configuration gives you much more flexibility because the second camera can be as far away as 150 feet (the reach of AirPort), and you don't have to run wire over that distance. The second iSight plugs into the remote computer, which broadcasts the signal to the monitoring computer.

To enable motion detection on the wireless camera, you'll need SecuritySpy on your monitoring computer. Go to Settings: Video Device Setup, and then click on the Network Devices tab. Enter the IP address and port number of the remote camera.

If you're using SecuritySpy on the remote computer, the computer shows the IP address and port number when you enable Web serving. Enter that information into the program's Network Devices dialog box, and then select SecuritySpy from the Device Type drop-down menu. The image from your second camera will appear on the monitoring computer below the image from the first camera. The only hitch is that SecuritySpy is network-aware for registration, too, so you'll have to purchase a $50 single camera code for the remote Mac.

If you don't need SecuritySpy's features for the remote iSight, save $30 by using EvoCam instead of a second copy of SecuritySpy. Enable Web Serving (in EvoCam's Server tab), and note the IP address. On the monitoring computer, go to SecuritySpy's Video Device Setup dialog box and enter the following information: IP Address, *10.0.1.4* (whatever EvoCam lists as the address); Port Number, 8080; Device Type, Manual configuration; and Request, /webcam.jpg.

Click on OK to pick up the image broadcast from EvoCam and display it in SecuritySpy on the monitoring computer. If you enable Rendezvous in EvoCam for the remote iSight, you can also pick up the feed in Safari under the Rendezvous tab on any locally networked computer.

Criminals Beware

For less than $200, you can configure one camera to monitor your treasures and record any illicit activity. With two iSight cameras and $120 in software, you can set up a professional multicamera surveillance system every bit as powerful as the systems most businesses use. Depending on your needs and your budget, the camera can be far from the monitoring computer, whether you run cables or go wireless. And once the cameras are rolling, there are many ways to learn about brewing break-ins and archive video. Explore them all to configure the perfect security system for your needs. □

DERRICK STORY is the author of *Digital Video Pocket Guide* (O'Reilly, 2003) and the managing editor of O'Reilly's MacDevCenter.com.

TIPS AND TROUBLESHOOTING

Although EvoCam and SecuritySpy are already easy to use, these tips will help you get even better performance.

Web Watching If you want to monitor an area but don't need notification and image recording, you can set up a wireless remote iSight with EvoCam, enable Rendezvous sharing in the program's preferences, and observe activity through Safari on any Mac on the local network.

Control Cameras When you're monitoring multiple areas with SecuritySpy, turn on the Camera Status window. It lets you control each camera individually. This is particularly helpful for switching cameras from active to passive modes. In passive mode you can still observe activity for a particular camera, but motion detection and recording is disabled. This is helpful for situations where you know there will be activity but don't necessarily want to record it.

Refresh Regularly If you're using EvoCam to broadcast wirelessly and monitoring the feed with SecuritySpy, you may run into a problem: SecuritySpy telling you that you need to refresh the image. Simply make sure that EvoCam is actively refreshing and saving at a regular interval. If that doesn't work, launch Safari on your monitoring computer and refresh the remote image in the browser.

EvoCam Alerts

Once you've positioned your camera and told EvoCam what areas to watch, there are several ways the software can alert you to motion.

Geek Factor is a monthly guide to pushing your Mac to its limits—for fun, for increased productivity, or for both. We want to hear from you! If you've got secrets to share or suggestions for column topics—or if you just want to tell us what you think of *Geek Factor*—e-mail us at geekfactor@macworld.com.

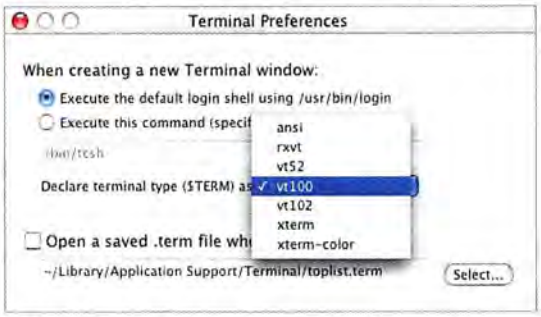
Mac OS X Hints

LEARN A BIT MORE ABOUT THE UNIX SIDE OF OS X, INCLUDing hints on using Terminal to convert manuals to PostScript, copy information to the Clipboard, convert line breaks in text files, identify what's in a given file, and open the current directory folder in the Finder.

Change End-of-Line Characters

If you're using text files from various sources as inputs for static HTML pages or as scripts for the Apache Web server, you may occasionally find a file that looks right but just doesn't seem to work. For example, instead of a page of text, you see only a blank page in your browser.

It's possible that this problem is caused by an *end-of-line* character that Unix doesn't understand—the GUI and Unix sides of OS X use different sets of characters to indicate a new line. If you open the suspect file using the vi editor (change to the file's directory and type vi *filename*) and see a whole bunch of ^M characters, then you have Mac end-of-line characters in your file. The presence of these characters may cause problems for the built-in Web server, so you'll need to remove them. You could fix the problem by opening the file in Bare Bones Software's BBEdit, selecting Save As, clicking on the Options button, and setting the Line Breaks pop-up menu to Unix.



A Clear Winner By changing your declared Terminal type to vt100, you'll prevent certain Unix commands from clearing the screen when they finish their tasks.

Terminal, however, provides a quicker and easier solution. For example, to convert all the line breaks from Mac to Unix style in the file foo.txt, you'd type perl -pi -e 's/\r\n?/\n/g' foo.txt.

Perl (Practical Extraction and Report Language) is a type of programming language, and it's doing the dirty work in the conversion. The -pi argument tells Perl to act on every line in the file and to write its changes back to the same file; -e tells Perl to run the following command as a script. The really complex-looking bit is what actually does the work: s is the substitute command, the forward slashes (/) are separators, \r\n? is the string that finds the Mac line endings (a return followed by a new line), and \n is the new Unix line ending (a new line by itself) to be used as the replacement. Finally, g tells Perl to make the substitution globally—that is, for every match it finds in the file.

When you press enter, the command will execute very quickly, and a follow-up check with vi will show that the Mac line endings are indeed gone.

Read Hidden Perls of Wisdom

If the previous hint has whetted your appetite to learn more about Perl, don't run out and buy a book. Instead, start with OS X itself: an amazingly complete Perl manual is included with the operating system.

SPEAK YOUR MIND

Panther includes a new Unix command, say, for taking advantage of OS X's speech capabilities. (Jaguar users can use osascript -e 'say' to get the same result.) Why might you want to do this? For one thing, it's kind of fun. Type say "hello world" for a basic demonstration of the say command's functionality. But there's much more to it than that; say has some intelligence, too. Type say "I love Mac OS X" and notice how it's pronounced, then try say 723052952 for an example of how the command handles numbers.

If you have remote access to your home Mac via the SSH protocol and there's someone in your house while you're at work, these two commands might be fun to use after remotely connecting to the home machine:

```
osascript -e 'set volume 10'
say "Help! I'm trapped in this Mac!"
```

The first line executes an AppleScript that maximizes the volume setting on your machine before speaking what's on the second line.

But there are serious reasons to use say, too. Using its -f and -o options, you can convert a text file into an audio file for use on an iPod or other portable device. Just type say -f *somefile.txt* -o *spokenfile.aiff*, where *somefile.txt* is the name of the text file and *spokenfile.aiff* is the name of your output file.

OS X (Panther only) will quickly create an AIFF file, and you won't even have to listen to say read every line in the file as it's created. You might also want to use the -v flag to set which voice to use—you can specify any of the voices from the Speech preference pane (-v Junior, for instance).

Open Terminal and type man perl, and you'll get the introductory blurb on the programming language. However, you can learn much more by viewing other sections of the manual, such as Overview and Tutorials. For instance, to read a great introduction to the language, type man perlintro, or type man perlrequick for an explanation of *regular expressions* (a way of finding patterns of characters in text).

Stop the Senseless Screen Clearing

Have you noticed that certain Unix commands in OS X 10.3 (such as vi, less, and man) finish by clearing the screen? If you're reading a manual page and want to copy and paste a portion of it, having the screen clear when you exit the manual-page viewer is highly annoying.

To solve this problem, make a quick trip to Terminal's preferences and set the Declare Terminal Type ($TERM) As pop-up menu to vt100 (see "A Clear Winner"). The next time you create a Terminal window, you won't be bothered by the unrequested clear-screen action. If you ever want the old behavior back, just set the pop-up menu to xterm-color.

Identify Mystery Files

Have you ever visited a Web site with a script-based downloader, and wound up with a file named something like download.php on your desktop? If you'd like to find out what the file is without dragging and dropping it on all of your expansion utilities, Unix may be able to provide additional detail. Open Terminal, type file download.php, and press enter. If Unix is able to figure anything out about the file, you'll see output like this:

download.php: gzip compressed data, deflated, last modified: Mon Jan 5 12:13:15 2004, os: Unix

In this example, the file has been compressed with the Unix utility gzip and needs to be expanded.

Open the Current Terminal Folder in the Finder

You may already know that you can add a folder path to Terminal by dragging that folder into an open Terminal window. This can be useful when you want to change to a very low-level directory, for instance.

But what if you want to view the folder you're working with in the Finder? Just type open . (notice the space and period) and press enter. The Finder will open a new window displaying the current folder's contents.

Access the Clipboard from Terminal

Although you can use the mouse to highlight, copy, and paste text between Terminal and other OS X applications, you can also directly access the Clipboard via the Unix commands pbcopy and pbpaste. Why use the Unix commands instead of the mouse? Consider ls -al, a command that lists a directory's contents, including ownership and permissions. You may want to e-mail the output to your IT person to troubleshoot a problem you're having. If you were using the mouse, you'd run the command, then highlight its output on screen (scrolling up and down as necessary), press ⌘-C to copy the selection to the Clipboard, and then press ⌘-V to paste it into a document or e-mail message.

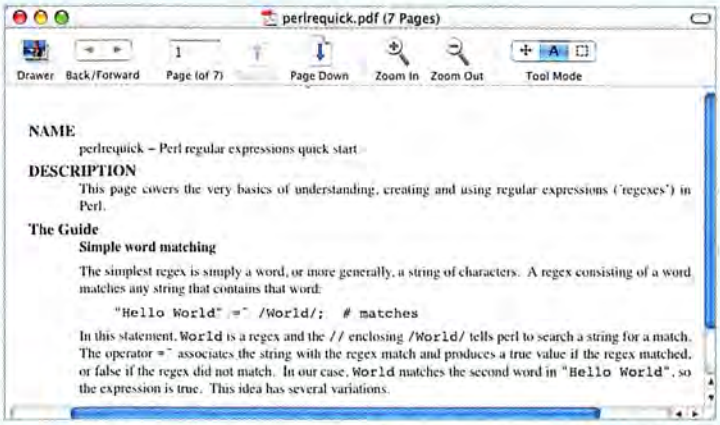
If you use pbcopy, however, the process is much simpler and faster. Just type ls -al | pbcopy. This command creates the directory listing (ls -al) and then sends the listing to the pbcopy command, courtesy of the pipe (the vertical bar, |). On screen, you won't see any output from your command. But if you switch to your e-mail program and press ⌘-V, the directory listing will magically appear. Or type pbpaste > listing.txt to paste the Clipboard's contents into a file named listing.txt.

VIEW MANUALS AS PDFS

You may have a hard time reading the long, complex Perl manual in Terminal—it's not the best way to read such documents. Luckily, Panther includes some Unix utilities that make it a snap to view any manual page as a nicely formatted PDF file. For example, you can open the previously mentioned perlrequick manual in Preview with these two commands:

man -t perlrequick > /tmp/perlrequick.ps
open /tmp/perlrequick.ps

The first command converts the manual into a PostScript file. Executing the open command will then tell OS X to convert the PostScript document into a PDF file—complete with boldface type and other formatting intact—and launch Preview. Using Preview, you can search, print, and easily scroll through the manual. Files saved in the /tmp folder are erased each time you reboot, so you don't need to worry about using up disk space with temporary manual-page files. There are GUI alternatives (ManOpen and manThor, for example) that do the same thing, but this hint is quite handy if you're already working in Terminal and just want to take a quick look at a long manual.



Easy Read A few quick Unix commands are all you need to view manuals as PDF files.

Contributing Editor ROB GRIFFITHS is the author of *Mac OS X Hints, Jaguar Edition* (O'Reilly, 2003) and runs the Mac OS X Hints Web site (www.macosxhints.com).

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Mac 911

LIKE THE GOPHERS WHO DECIMATED MY RECENT AGRICULTURAL efforts, this month's *Mac 911* digs beneath the surface to expose the difficulties of converting iTunes music files, extracting video files from DVDs, putting an end to Office snooping, and bringing light to dim PowerBook keyboards.

Becoming a Convert

I imported my CDs into iTunes as AIFF files. Now that I have an iPod, I'd like to convert those songs to the AAC format. Is this possible or must I rerip all my CDs?

Steve Hawley, *Jacksonville, North Carolina*

You don't need to feed the CDs to your Mac again, as you can use iTunes to convert files from AIFF to AAC. To do so, launch iTunes and select Preferences from the iTunes menu. Click on the Importing tab in the resulting window, select AAC Encoder from the Import Using pop-up menu, and click on OK to close the Preferences window.

Video on Demand
Use a tool such as OpenShiiva to extract video from a DVD.

In the iTunes window, select all the songs you want to convert, and choose Advanced: Convert Selection To AAC. All the selected songs will be duplicated, leaving you with two copies of each song—the original AIFF file and the new AAC version.

To easily locate and delete the AIFF files, choose View Options from the Edit menu, and in the View Options window that appears, enable the Date Added option and click on OK. Click on the new Date Added heading in the iTunes window to sort your songs by the date they were added to your iTunes library. The new AAC files will appear at the top of the list; the older AIFF tunes, at the bottom. Select the AIFF files and press the delete key to remove them from the library.

Move Videos onto Your Mac

I recently purchased a Sony DCR-DVD100 camcorder that writes its output directly to DVD. Although I can copy the output files to my hard drive and play the video clips using Apple's DVD Player, Sony didn't supply Mac-compatible DVD-editing software with this product. Is there any software I can use to edit my movie clips?

Stephen Hart, *Houston, Texas*

The difficulty isn't so much finding software to edit the movie clips—you can use Apple's iMovie once you get your video out of the camera and onto your Mac. The problems are that the DCR-DVD100 lacks a FireWire port and that, as you've discovered, the bundled software is incompatible with Mac OS.

To move video from this camcorder to your computer, you must either use the camera's S-Video port in league with an analog-to-digital converter such as Canopus's $299 ADVC100 (888/899-3348, www.canopus.us) or extract the video from one of the finished DVDs the camera produces.

To extract the video, convert the VOB (Video Object) files on the DVD to a format compatible with QuickTime. For this task, I use OpenShiiva (donations accepted; http://openshiiva.sourceforge.net) to convert the VOB files to MP4 files (see "Video on Demand"). After the files are saved in the MP4 format, drag them into iMovie, where they'll be automatically converted to a format acceptable to the program.

Note that this technique is also useful when you've burned a video with iDVD and deleted the source files from your hard drive, and you later need to extract the video files from the DVD for re-editing.

Office Annoyance

I'm on a closed Ethernet network within my company and use Microsoft Office v. X. Everyone in the office has his or her own copy of the software, yet my copy of Entourage quits at least twice an hour due to a license-conflict message. I have installed a brand-new copy of Office, and the same problem still occurs. Any thoughts on this?

Paul Rosenblit, *Freeport, New York*

TIP OF THE MONTH

Occasionally I'll download a disk image that doesn't mount due to a "no mountable filesystems" error. I've recently learned that I needn't discard these seemingly broken images. Instead, I launch Disk Utility, drag the disk image into the list of volumes in the Disk Utility window, select the image, and click on Repair Disk. If the image can be repaired, Disk Utility will fix it, and afterward the disk image mounts.

Nathan Wilairat, *Berkeley, California*

What you're seeing is the license-checking "feature" that was built into early versions of Microsoft Office v. X. It was created so that you couldn't run the same copy of Office on multiple Macs. Fortunately, this feature disappears after you install the Microsoft Office v. X 10.1.2 Update (www.microsoft.com/mac/DOWNLOAD/OFFICEX/OfficeX_1012.asp).

The Art of iTunes

Where does iTunes store its album art files?

Erik Davila, *San Antonio, Texas*

Album art is stored in each song file. The advantage to this scheme is that when you move a song from one computer to another, the album art moves with it. The slight disadvantage is that song files with artwork are a bit larger than those without.

To see the difference for yourself, drag a song file out of iTunes and onto the desktop. Select it, press ⌘-I, and make a note of its size.

Now go to Amazon.com and download the album art for that song. (For example, I downloaded the cover art from the Who's *The Ultimate Collection*.) Highlight all the songs from that album in iTunes' main window, press ⌘-I, and drag the JPEG art file you grabbed from Amazon into the Multiple Song Information window's Artwork field. After clicking on OK to close the Multiple Song Information window, you'll find that all the songs you selected now carry the album art.

Drag the original song's file to the desktop and press ⌘-I to view its size. The file is larger—how much larger depends on the complexity of the album art.

Console Capers

While glancing through the console.log file on my computer, I found an entry that reads "I got a control baby!" Am I being hacked?

Fausto E. Castillo, *Buffalo, New York*

No, what you see is an example of *programmerspeak*. That message is generated by Microsoft Office v. X's WordPDE.plugin and is completely harmless.

Rummaging through page after page of a log file is more likely to confuse—rather than inform—the average user. But you can put Console and log files to good use.

If, for example, an application crashes every time you perform a particular action, launch Console (found in the Utilities folder within the Applications folder), click on the Clear button to remove other entries from the log, and then perform that action. After The Bad Thing happens, return to Console and see what it has to say.

Granted, a message that reads "Assertion failure in -[NSMenu itemAtIndex:], Menus.subproj/NSMenu.m:638" won't enlighten most of us, but the person or company responsible for the well-being of your ailing application may appreciate such an informative bug report.

Losing the Light

Since installing Panther on my 17-inch PowerBook G4, my keyboard doesn't always light up in dark conditions. Do you have any suggestions?

Mitch Santell, *Oceanside, California*

Judging by messages posted in Apple's Discussions forum, robust keyboard backlighting on the latest PowerBooks remains a work in progress. Although some people found relief only by returning the PowerBook to Apple for repair, others fixed the problem by performing some of the following actions:

1. Cover the speaker grilles with your hands. The ambient light sensor is under the grilles, and covering them briefly may force the keys to shine.
2. Reset the Power Manager and zap the PRAM.

To reset the Power Manager, turn off the PowerBook, simultaneously press and release control-shift-option and the power button, wait five seconds, and then press the power button to restart the PowerBook.

To zap the PRAM, restart the Mac while holding down the ⌘-option-P-R keys and wait for the Mac to chime three times. Let go of the keys and the PowerBook will start up.

3. Repair permissions with Disk Utility (Applications: Utilities).

If none of these procedures work, it's time for your PowerBook to take a trip to Apple. □

UNSOLICITED ADVICE

With the introduction of iTunes 4.2, Apple allows not only those with Apple IDs to shop at the iTunes Music Store (iTMS) but also AOL members who've created credit card accounts through the AOL Wallets feature. If you have both an Apple ID and an AOL account, you're welcome to create an iTMS account for each.

Why bother? This is a useful option if you'd like to purchase and play music from a host of computers. When you purchase music from the iTMS, you're allowed to play that music on as many as three computers per account. If you've already authorized your two Macs and PC at home and later attempt to purchase and play music on your computer at work via your Apple account, you'll find that you can't, because you've exhausted your authorizations. With the additional authorizations that come with your new AOL account, you can purchase and play music at the office as well.

Note, however, that purchased music is identified by the account that purchased it. If you buy music via your AOL identity at the office and want to play it at home on a Mac authorized with your Apple ID, you must authorize that Mac for the AOL account. To do so, simply attempt to play the file. You'll be prompted for your AOL ID and password.

Contributing Editor CHRISTOPHER BREEN appears weekly on TechTV's *Call for Help* program, where he routinely hawks his *Secrets of the iPod*, fourth edition (Peachpit Press, 2004).

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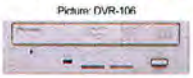

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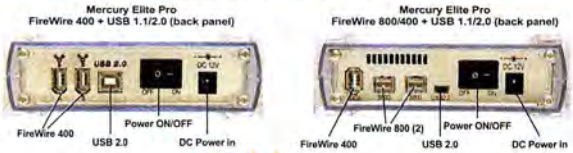

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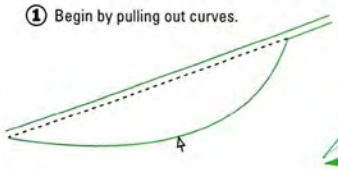
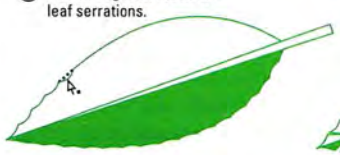
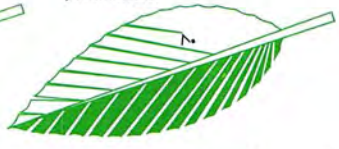


② Tools show your progress as you go.

③ Pull on segments to make leaf serrations.



④ Create realistic detail by pulling points inward.



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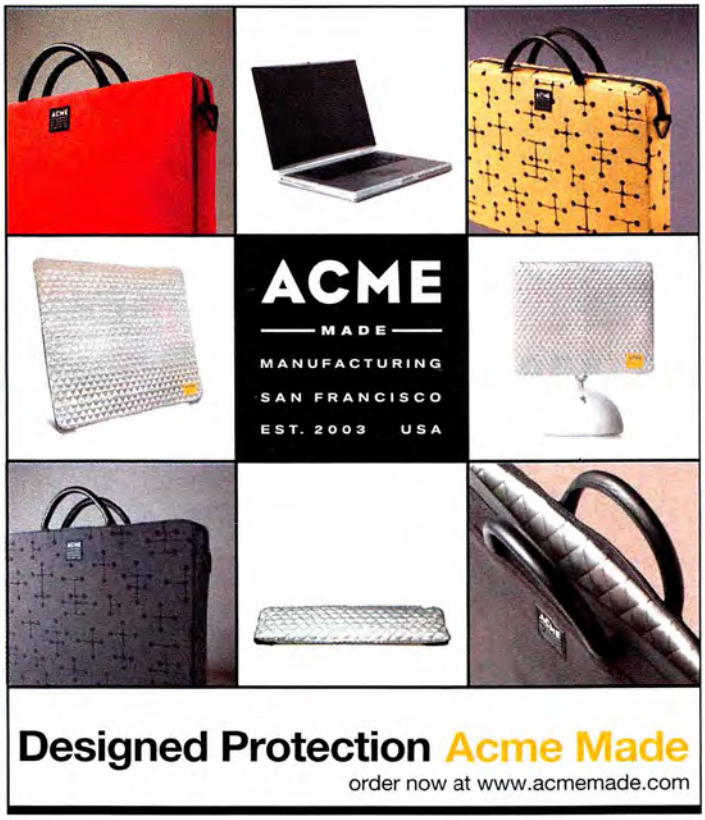

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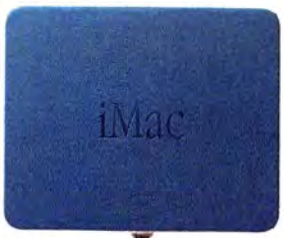

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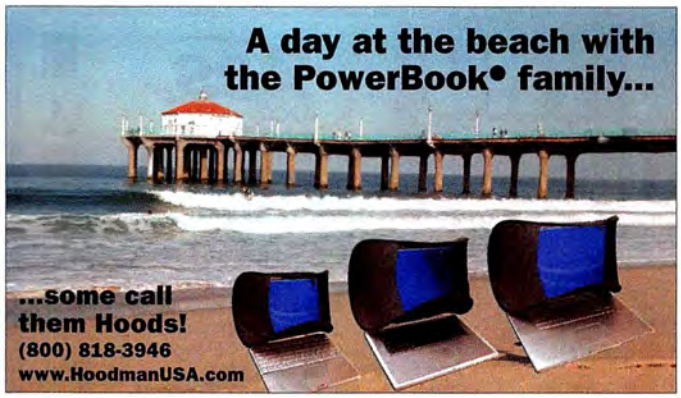

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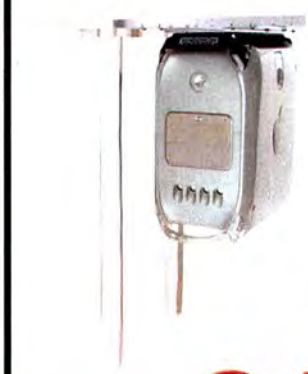

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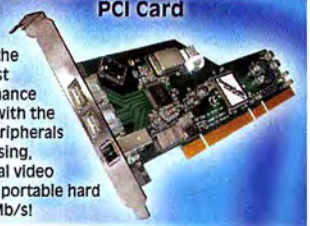

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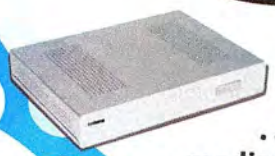
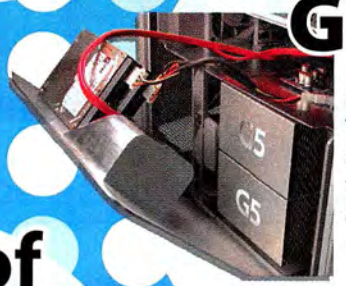


Digital media player.

. . . and then view the media files stored on your Mac through your TV.

G5 Jam



Geek out terabyte-style! The G5 Jam is an internal storage option that provides up to one terabyte of internal storage!

wiebeTECH

G5 Roof

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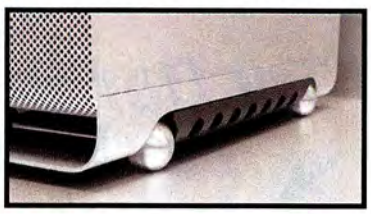
POWER SUPPORT

G5 Skate



Grind the rail with your G5! The G5 skateboard lets you powerslide your big Mac from under your desk for easy access to the rear deck. Dude.

POWER SUPPORT

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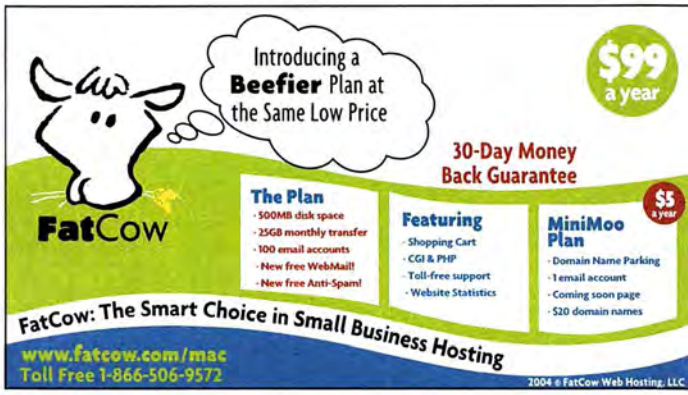

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Hot Stuff

The Month's Coolest Developments

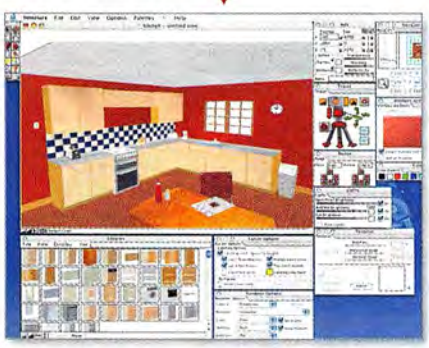
FROM THE EDITORS OF MACWORLD

IntelliScanner Collector

No collection of books, music, or movies is too disorderly for Intelli Innovations' $199 software-handheld scanner package to catalog (www.intellisw.com). The Collection software in particular appeases our inner organizer by scouring several online sources to make sure our database has the most complete information about each item.

Interiors

With Martha Stewart spending more time in court these days than on a tastefully decorated set, you need to look elsewhere for home-designing hints. Fortunately, the $129 Interiors 3.4, from Microspot (www.microspot.com), lets you easily create 3-D rooms for visualizing interior designs that would put the *Trading Spaces* gang to shame.



OmniWeb's Take on Tabs

Playing around with the OmniWeb 5.0 beta, from The Omni Group (www.omnigroup.com), we couldn't help but marvel at the browser's twist on tabbed browsing. Creating a new tab gives you a thumbnail view of the Web page in the tab drawer, so switching from page to page is fast and easy.

Practice Makes Perfect

With GarageBand, you can turn a Mac into your own personal Abbey Road Studios. So maybe it's time to brush up on those long-forgotten music lessons. eMedia Music's $200 Learn to Play Keyboard Bundle (www.emediamusic.com) packages piano and keyboard software with a MIDI keyboard (which you can use with GarageBand).

Salling Clicker

Good news if you have a Sony Ericsson P800 or P900—Salling Software (www.salling.com) is working on a Salling Clicker update that will extend the program's remote-control capabilities to those phones. For the first time, Salling Clicker will be compatible with phones that use Symbian OS, extending the reach of this inexpensive, AppleScript-savvy tool.

WHAT'S HOT A Quick Look at the World of Macs

1. **Apple and Pepsi kick off iTunes Music Store promotion with a Super Bowl TV ad.** *But after the halftime show gets all the attention, the companies promise that future ads will feature fewer music-stealing kids and more nudity.*
2. **Apple's $99 GarageBand Jam Pack hits stores.** *And the music-creation-software add-on has a hidden feature: if you're particularly difficult to work with, GarageBand replaces your vocals with Sammy Hagar's.*
3. **Pixar-Disney talks collapse, forcing Pixar to look for a new distribution deal.** *Hopefully, Pixar can find a distributor, so CEO Steve Jobs will have something to fall back on if this whole personal-computing fad doesn't pan out.*
4. **Mydoom virus strikes Windows users, causing sluggish performance and frustrating troubleshooting.** *And this is different from the normal Windows experience how, exactly?*

THOMAS HAMPSON

Few of the people who attended January's Macworld Expo would be as comfortable with the works of Puccini and Verdi as with those of Apple and Macromedia. But Thomas Hampson is. The renowned opera singer is also a major Mac aficionado (and the publisher of his own Web site: www.hampsong.com). In San Francisco to star in *The Barber of Seville,* the baritone also paid a visit to the Mac trade show, shadowed by a *San Francisco Chronicle* reporter. "I've given [my family] Macs," Hampson told the *Chronicle.* "My father is still a PC person. My sister is still a PC person, but everyone else is Macintosh—my daughter, my other sister, friends. The whole photo thing, the whole e-mail thing. Just keeping in touch on a personal level, it's made things a lot easier."

Read more: www.sfgate.com/cgi-bin/article.cgi?file=/chronicle/archive/2004/01/13/DDGL047P7R1.DTL

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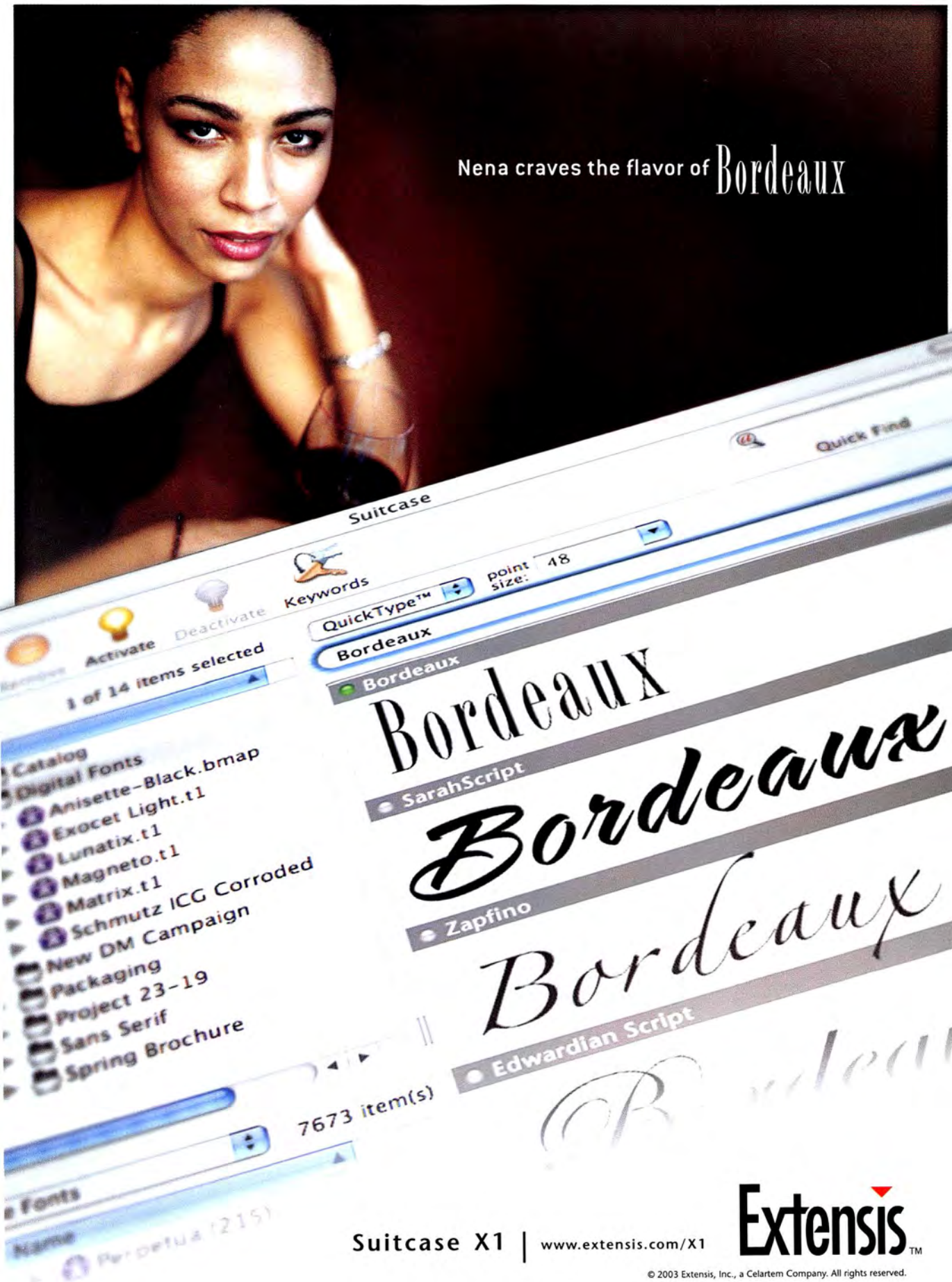

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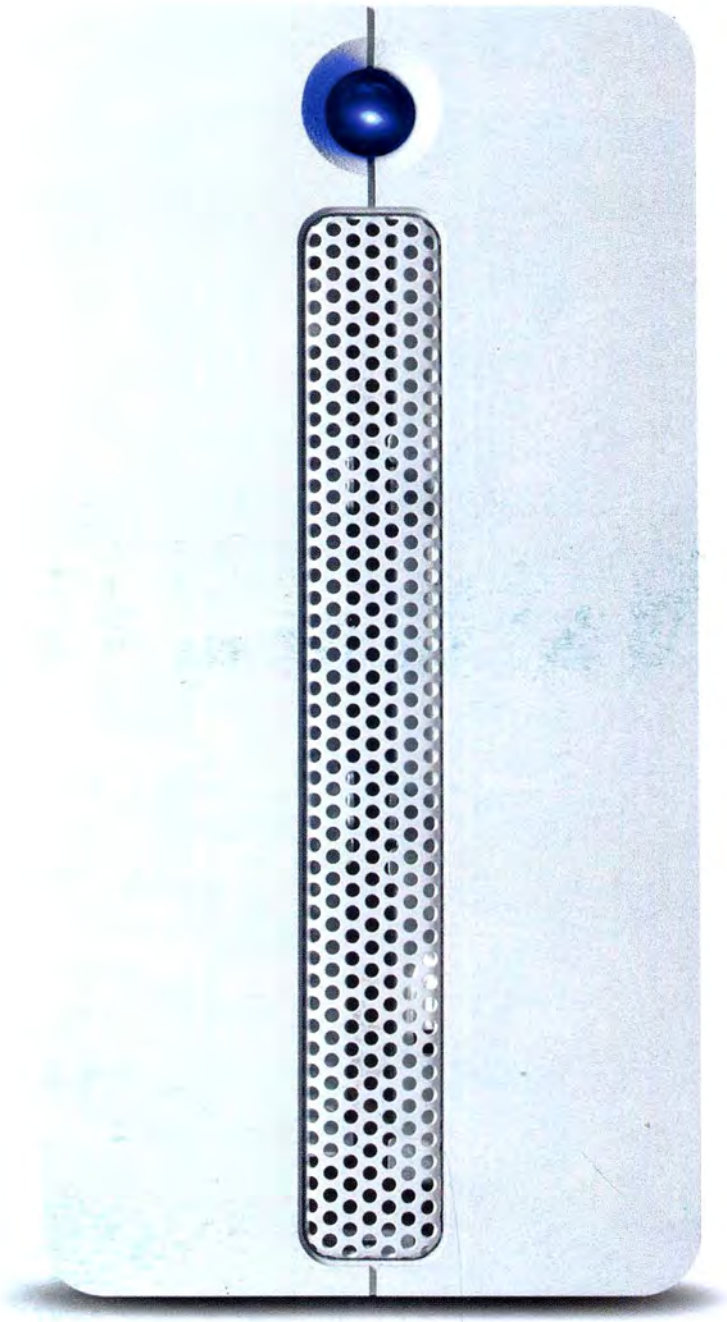

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