MOVE YOUR VHS HOME MOVIES TO DVD

RESTORE, ENHANCE, AND ARCHIVE YOUR VIDEOS WITH OUR STEP-BY-STEP GUIDE, p. 68

Macworld

www.macworld.com | June 2004

The Mac Product Experts

DIGITAL MUSIC SUPERGUIDE

GET BIG, STRONG SOUND—EVEN FROM AN iPOD MINI

CHOOSE THE BEST iPOD CAR ATTACHMENTS

LEARN TO RIP YOUR CDS THE RIGHT WAY

TRICK OUT iTUNES WITH GREAT EXTRAS

MASTER THE iTUNES MUSIC STORE

iPOD ALTERNATIVES

Reviewed: Flash MP3 Players, p. 32

"The biggest advance in computing in recent years."

– ***Peter Lewis***, Fortune

"One thing that's for sure is that the G5 is the biggest advance in computing in recent years, and not just because it is the first personal computer to use a 64-bit desktop processor." – ***Peter Lewis***, Fortune, 10/27/03

"The G5 is amazing. At Pixel Magic, we take advantage of its high-speed data transfer, ultrafast render speeds and screen refresh ability, with a Unix-based OS that does not get bogged down! Bring on those big files!"

– ***Ray McIntyre Jr.***, Pixel Magic

"With the G5 I'm no longer faster than my computer."

– ***Brian Lockwood***, Director/Editor

"The combination of the G5 and Mac OS X Panther is a winner. I opened more than 50 windows on the dual 2GHz G5 and saw no sign of slowdown. Under Final Cut Pro, no matter what I did, the system would keep up."

– ***Marcello Pereira***, RES

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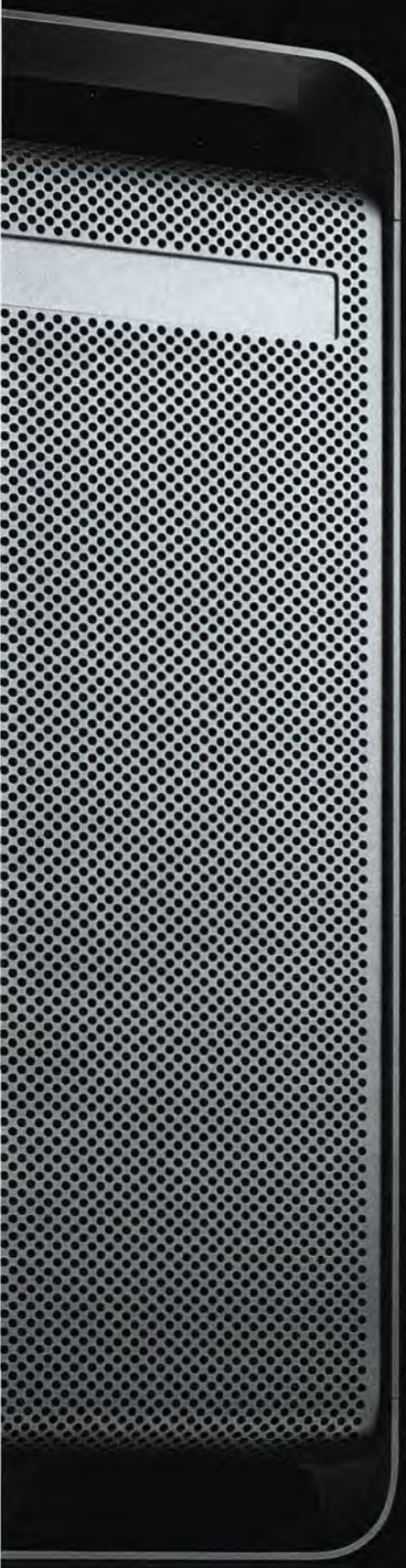

"We push deadlines to the nth, nth, nth degree; it would be difficult to do without this type of technology. We're still discovering all the things the G5 and Final Cut Pro can do." – ***Rick Blue***, Editor, *Scrubs*

"With the Power Mac G5, the increase in speed is threefold over the old machine. Especially in my line of work, this means more rendered scenes in the same amount of time, more freedom to try different versions, or simply a chance to go home before midnight."

– ***Thomas Tannenberger***, Look Effects

"Having Apple Computer's new Power Mac G5 around the office is like having a superhero assistant. If you've got lots of graphics or video heavy-lifting to do all at once, it's amazing." – ***Jon Fortt***, San Jose Mercury News

"I've been driving Final Cut Pro on my lab's Power Mac G5 and marveling at what this platform can do in real time." – ***Tom Yager***, InfoWorld

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Incorporating MacUser

Macworld

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The Virtual CD
Subscribers now have free access to the contents of the CD-ROM that comes with newsstand copies of *Macworld*. To view the contents of the CD, go to the following URL (broadband Internet recommended):
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CHRISTOPHER BREEN AND MICHAEL GOWAN
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EVERYTHING YOU'VE ALWAYS WANTED EVEN THOUGH YOU'VE NEVER

OPTICS • MEGA PIXEL CCD
DV PHOTO PLUS
DIGIC DV • PRINT & SHARE

Let's start with the first thing you should know. DV Photo Plus refers to the four key technologies that give you both premium-quality video and photos from a single camcorder. And assuming that's not everything you wanted to know, here's the rest.

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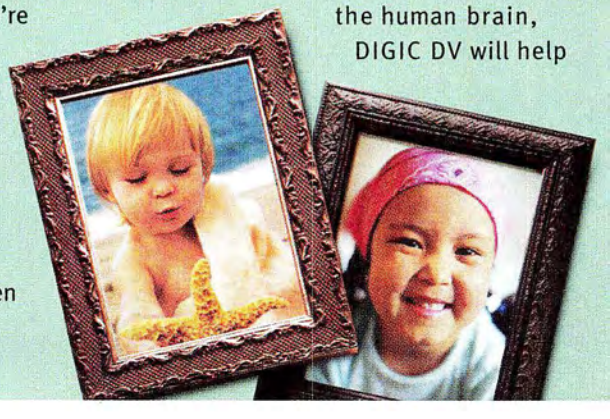
DIGIC DV IMAGE PROCESSOR

DIGIC DV is your camcorder's digital brain; you'll find one in every Canon Mini DV camcorder. This exclusive image processor captures accurate color for both video and digital photos. And like the human brain, DIGIC DV will help



TO KNOW ABOUT DV PHOTO PLUS. HEARD OF DV PHOTO PLUS.

you take better pictures by heightening the emotion in everything you shoot. (Colors become more vibrant, light more dramatic, and the color spectrum wider.) And, since video and digital photos have different color requirements, DIGIC DV uses two different color techniques to maximize video quality on a TV and optimize photo quality on a computer screen. You didn't know that now, did you?

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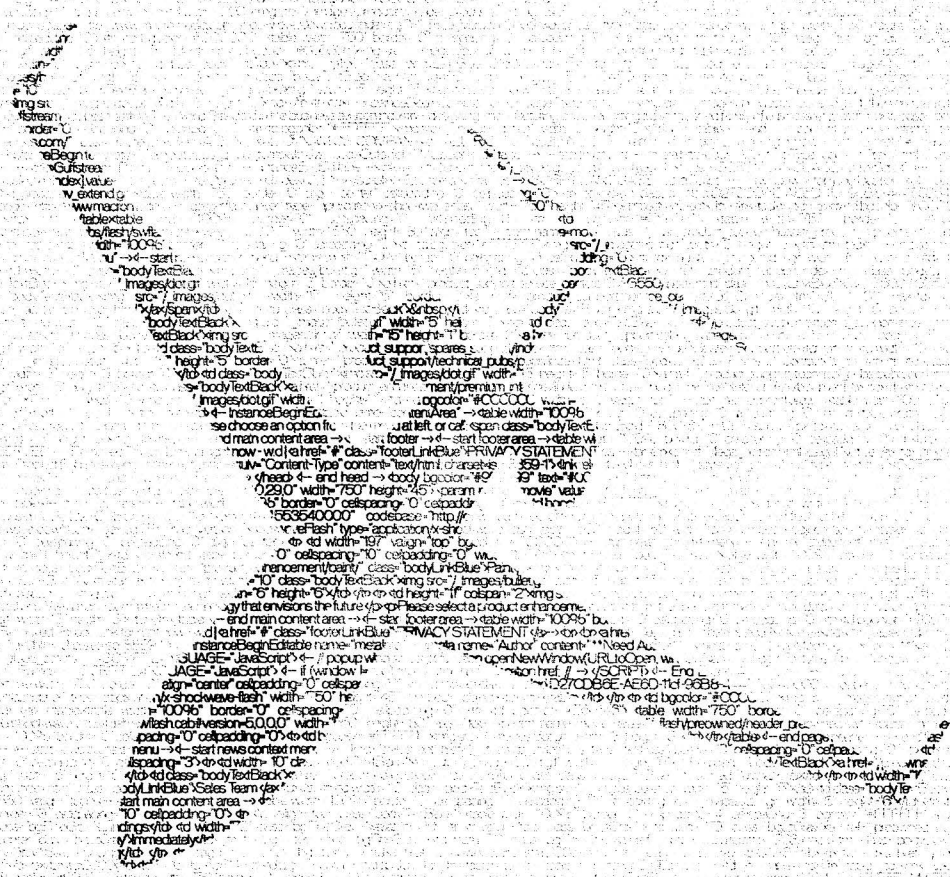

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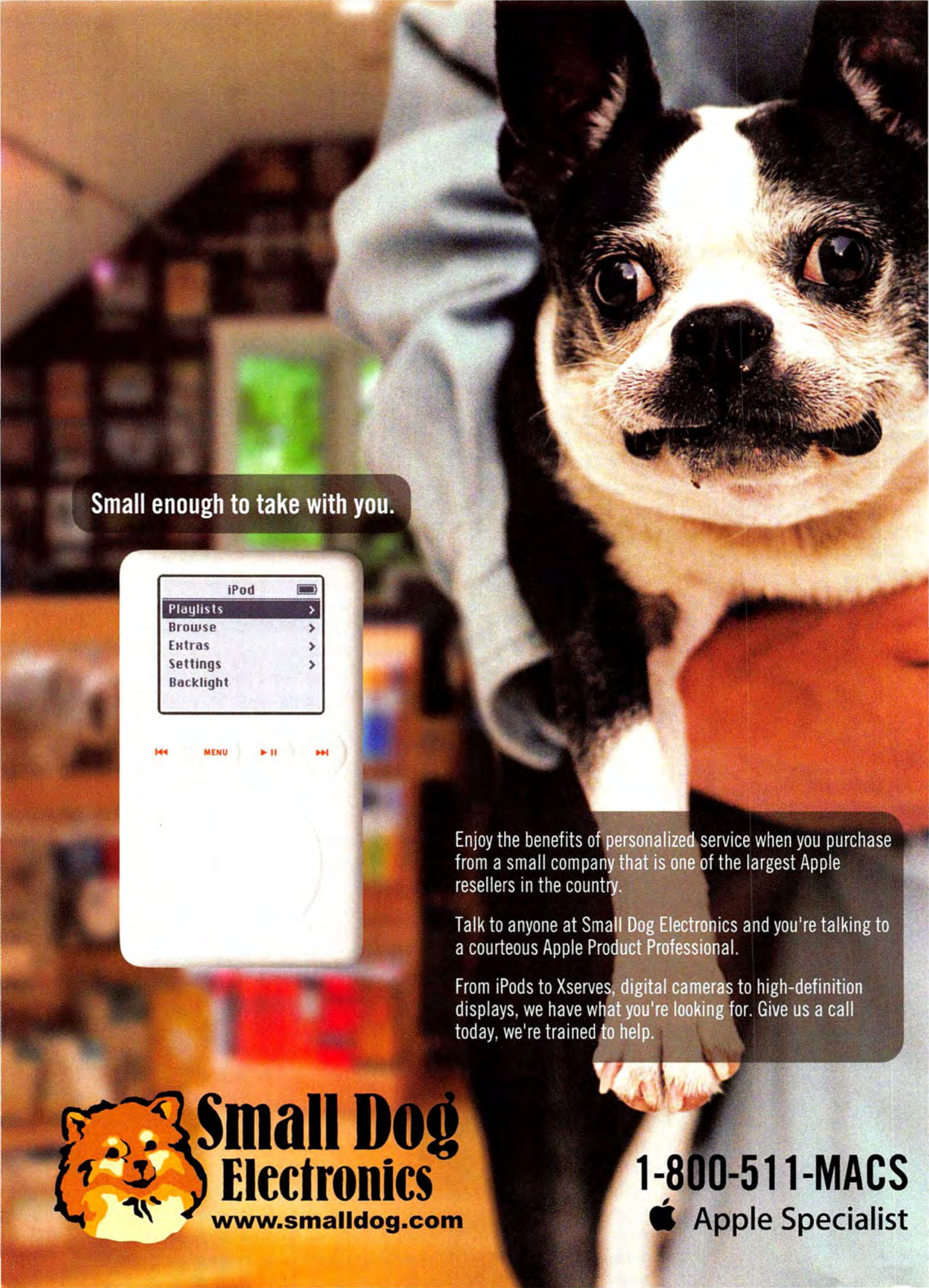
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AS APPLE RIDES A WAVE OF SUCCESS WITH THE iPOD AND iTunes, numerous industry pundits are questioning the company's loyalty to its Mac product line. After all, the thinking goes, if the iPod and iTunes are so popular with Windows users, why should Apple waste its time catering to the comparatively minuscule Mac market?

That way of thinking is crazy: you can't ignore the fact that Apple makes about 90 percent of its money from its sales of Mac-related products. But even if Apple is destined to bring innovative digital entertainment products to the masses, regardless of the platform they're using, the Mac—and Mac users—remain a vital part of that destiny.

Follow Our Lead

Mac users defy convention. We care about computer design and computer interfaces in ways that PC users clearly don't, and we're generally willing to spend more money for our computers to get a high-quality product. But take those traits one step further: Mac users can visualize ways that technology can change our lives. And we have courage enough to take risks, in terms of time, money, and the frustration of living on the cutting edge, so we can be among the first to have our lives changed by groundbreaking innovations.

Twenty years ago, Mac users chose the ease of use of a graphical, mouse-driven interface over the PC's complexity. But more recently, we've embraced digital video editing, digital photography, DVD creation, and digital music. We didn't blink at converting our CD collections to MP3s, and now we're eagerly buying digital music downloads.

The Digital Generation

Take a few pages from my own life. Shortly after the release of iMovie, I bought a digital camcorder. On my return from a trip to Europe, I edited several hours of footage into a 30-minute feature and used iDVD to burn it to a DVD. A week before my daughter's birth, I bought a digital camera and, with the help of iPhoto, churned out a Web site full of photos of the new baby. And today, my daughter's collection of children's music is stored in MP3 format.

The worlds of digital video and audio are changing at a rapid pace, so with this issue, we're tackling both topics in major ways. In Christopher Breen and Michael Gowan's "Digital Music Superguide" (page 58), you'll read about integrating your music and your Mac—from buying high-quality speakers to choosing the best method for converting your CDs to MP3 format. And in Jim Heid's "From VHS to DVD" (page 68), you'll get step-by-step instructions on how to convert your old analog videotapes (not to mention old film reels) to digital format and get them onto DVDs.

I've got some personal experience with that one, too: Not too long ago, I transferred a series of videos my friends and I had made back in 1985 onto DVD. The videotape had noticeably degraded in the intervening years, and I know that if I had let it sit for much longer, that valuable keepsake of my youth would have evaporated forever. Now it's on digital tape and DVD, and it's safe for my daughter to roll her eyes at when she gets older. If you've got old video treasures languishing on VHS, take Jim Heid's advice and save them while you still can. □

ABOUT MACWORLD.COM

Since I picked up a copy of MacSoft's Halo (★★★★½; February 2004) a few months ago, I've been spending too much time playing the game with other people via the Internet. It's taken me back to my days at *MacUser*, when a few of us would stay after work and wait out horrendous traffic jams by playing Halo's direct ancestor, Marathon. Just as playing against talented human strangers beats fighting computer opponents, playing against people you know trumps any battle you might have with someone you run into randomly on the Internet. And that's why I took to Macworld.com's forums (www.macworld.com/forums) to round up a group of *Macworld* readers for a few games of Halo. We've had a great deal of fun with it, and I hope the members of *Macworld*'s online community will use our forums not only to get to know each other better, but also to stoke their competitive urges. Who knows? That guy carrying the enemy flag into your base might just be *Macworld*'s editor in chief.

Got an interesting way you've taken advantage of Apple's innovations? Enjoy firing Halo's Fuel Rod Gun at coworkers? Send your comments to me at jason_snell@macworld.com, or join in the conversation at www.macworld.com/forums.

PORTRAIT BY SVEN WIEDERHOLT

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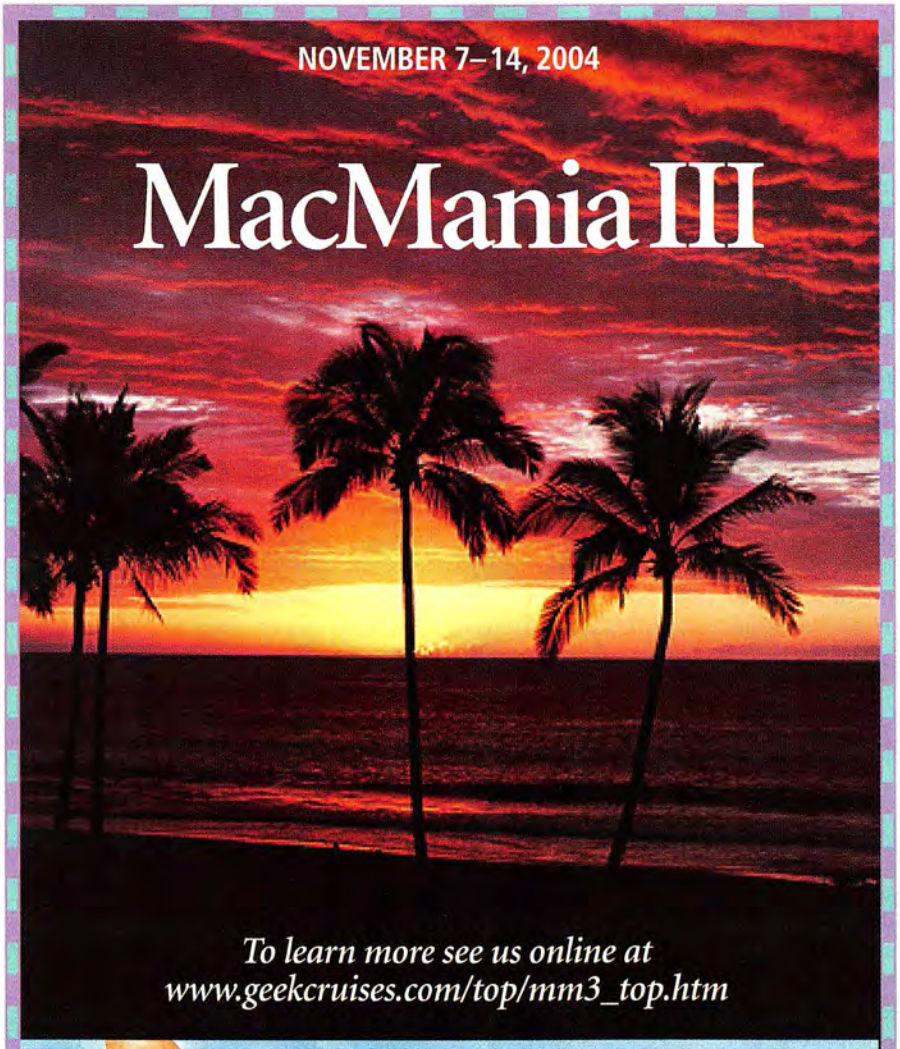

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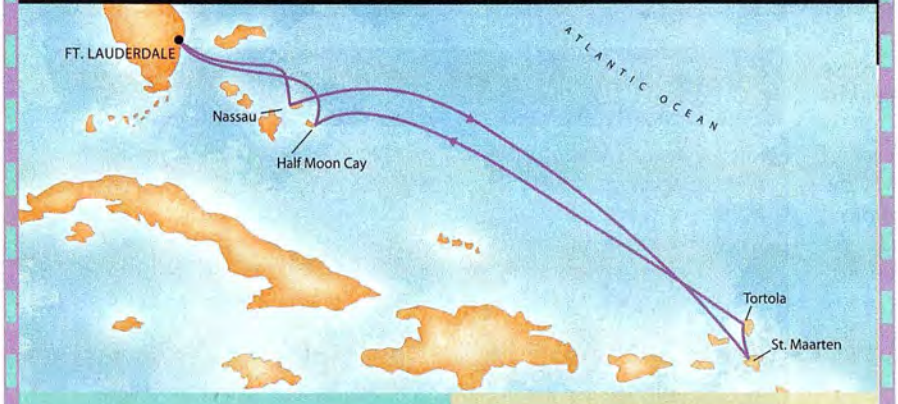

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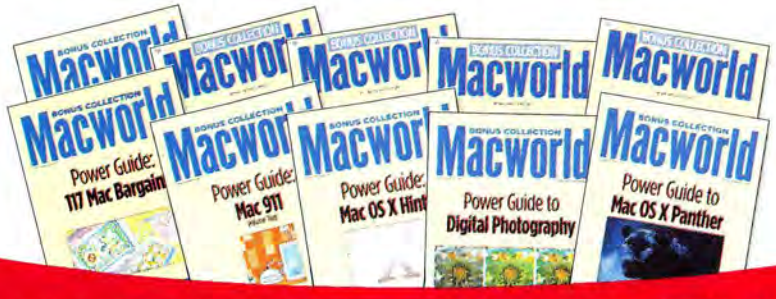

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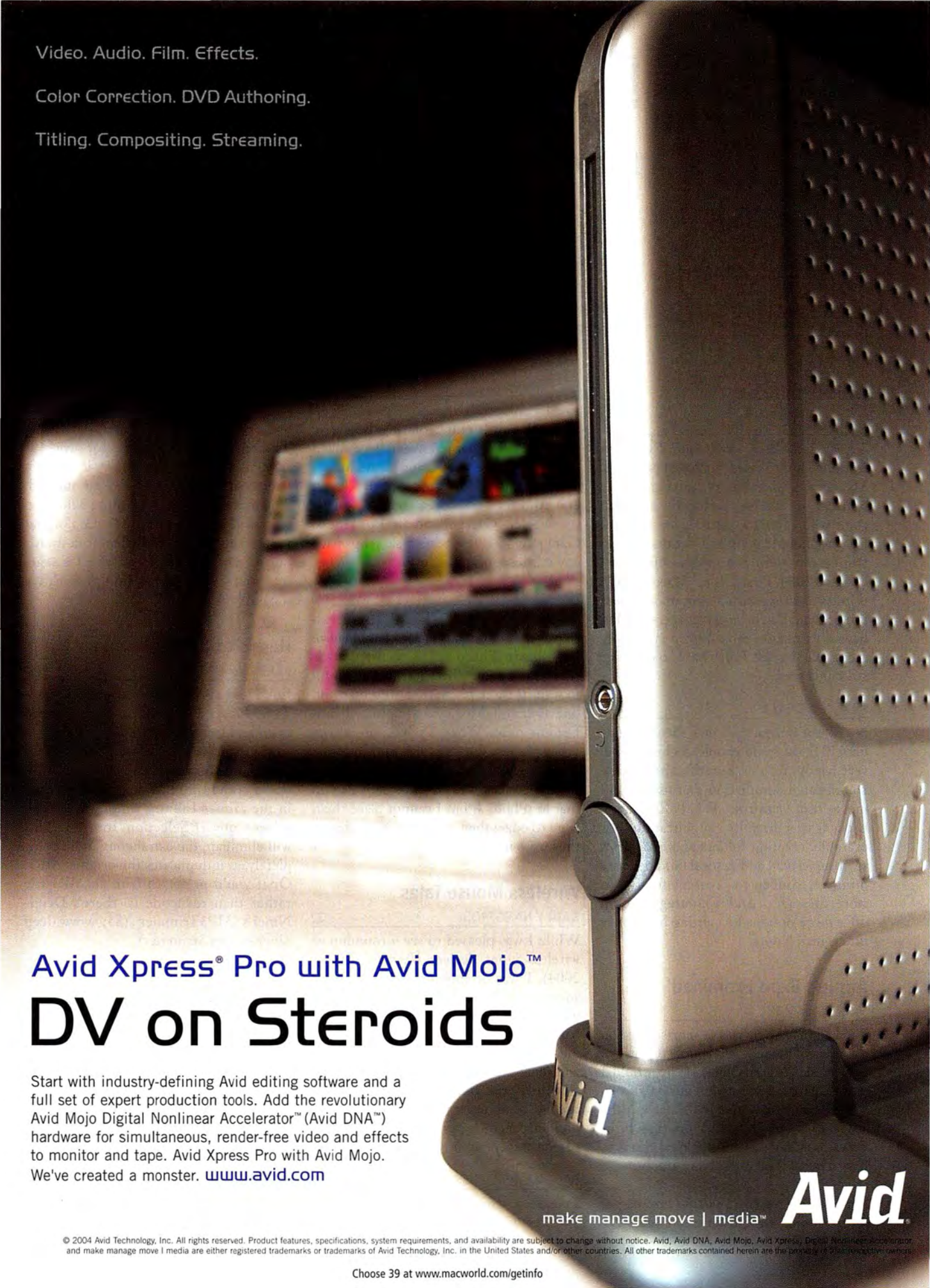

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FEEDBACK

Dispensers of Wisdom

With a March 2004 issue devoted to the new hardware and software announced at Macworld Expo, *Macworld* readers saw plenty of contenders for the title of coolest new product at the Mac trade show. Reader Jon Spangler's choice: the optical-sensor paper-towel dispensers at Moscone Center. They "worked equally well for PC, Mac, Unix, and Linux users, and booted up automatically. And using these hands-free output devices required no new hardware or software updates." Our readers always have a unique perspective on something—even when it's paper-towel dispensers.

Office Politics

DEREK COLLINS

Since Mac OS X came out, I've been working hard to avoid Microsoft products. My main problem is organizing all the e-mails, documents, and to-do lists that come with editing a quarterly newsletter. I have not found a good product that will do that for me—until now. With Office 2004 ("Office 2004: First Look," March 2004), it looks as though Microsoft understands projects and that project managers need to have information cross-linked and easily accessible. I guess I may have to consider switching back.

BILL STEINBICKER

No doubt Entourage's new Project Center will make some people, including me, very happy. Yet I'm leery that this may be complicated automation that usurps still more user control. What Entourage needs is user-friendly simplification. For example, creating folders and categories to group e-mail addresses should be more intuitive, similar to creating folders to store messages. And Entourage should offer more options for putting hyperlinks into e-mail letters.

Apple's Expo Examined

STEVE KOHLMAN

Too bad that Apple was so shortsighted on the price of the new iPod mini ("Center of Attention," March 2004). Why would I pay $250 for a device that holds only 1,000 songs when, for another $50, I can buy the 15GB iPod, which holds more than three times as many songs? Apple is going to have a lot of iPod minis lying around.

Apple, which reported 100,000 preorders of the iPod mini, might disagree with you.—Ed.

GALE WELLS

I really enjoyed Jonathan Seff's article on GarageBand. It points out just how easy GarageBand is to use. I would have added how well it runs with Digidesign's Mbox, as well as how to create loops in Reason 2.5. And let's not forget how easy it is to sweeten GarageBand in Pro Tools. GarageBand is the perfect sketchpad for any musician or music lover.

JOHN TENWOLDE

iPhoto 4 is a step backward, if not two steps. After upgrading, I could not believe how slowly iPhoto ran. Screen redraw is slow to the point where it's almost painful to wait. If three photos are on screen and one is highlighted, that photo will not become clear. When I select one of the other photos, it gets blurry and then the others become clear. In iPhoto 2, I could fill my screen with three images; I can do that in iPhoto 4, but I cannot place them edge to edge; they are also not as large as they were in iPhoto 2.

Wireless Mouse Tales

NANCY NANGERONI

While I was pleased to see a roundup of wireless input devices (*Reviews*, March 2004), I was disappointed that it didn't address make-or-break battery issues more fully. Unanswered questions include battery life and ease of battery replacement. For any cordless device, battery life and renewal is a crucial factor in its overall ease of use. Too much computer technology becomes trash after a too-short life; let's encourage more environmental responsibility and product longevity.

WILLIAM H. SHEPHERD

I've been using my Belkin Bluetooth Wireless Optical Mouse for almost two months now, and found your review lacking. While it took several tries to establish a pairing, the mouse now works fine. The thumb button does not work as advertised, but it can be set in System Preferences to operate Exposé instead. The mouse is strictly for those willing to use rechargeable batteries—it's a big fat power hog. But since a Bluetooth multibutton mouse with a scroll wheel is a rarity, your readers may find it worth a second look.

Here's to the Hub

BARRY JAY LEVINE

Jim Heid states that you need QuickTime Player Pro to remove extra audio from an iTunes file ("Record Streaming Audio," *Digital Hub*, March 2004). Actually, once you've set the start and stop times in the Info box, just select the file in the iTunes Library window and then select Convert Selection To MP3. This will eliminate the extraneous audio completely, as it duplicates the original MP3. Or if you'd prefer to trim an MP3 file rather than reencode it, there's DeepNiner's MP3Trimmer ($5; www.deepniner.net/mp3trimmer)

If you've recorded directly into MP3 or AAC, using the Convert command means compressing the audio twice, thereby compromising sound quality considerably. In these cases, you should avoid using the Convert command.—Jim Heid

Mystifying Mythology

DAVID KATSAROS

Peter Cohen's calling Age of Mythology a "flawless Mac conversion" (*The Game Room*, March 2004) is a bit of a stretch. There's misinformation in the system requirements printed on the box, which say

it will run on a 450MHz processor with 16MB—it won't even run on a 600MHz with 16MB. There are also system freezes during play. No problem, MacSoft says—just turn off one of the processors before you play. This game shows some great potential but needs work, and MacSoft needs to be more honest in the way it markets its product.

MacSoft tells me this problem is not endemic to all dual-processor Macs but only a small percentage of customer systems. The company has since released an update that fixes the problem.—Peter Cohen

Book 'em, Macworld

PAUL CALAMAI

In "Develop Safari's Power" (*Geek Factor*, March 2004), Dori Smith recommends using BBEdit or TextEdit to write bookmarklets code, copy the code, and paste it into Safari's address bar, and then dragging the corresponding globe icon into Safari's address bar. A faster approach is simply writing the code directly into Safari's address bar, thus avoiding the copy and paste steps. Here's another bookmarklet your readers might appreciate:

```
javascript:location.href='mailto:?
SUBJECT='+document.title+'&BODY='+
escape(location.href)
```

This script opens a new e-mail message window, places the URL of the Web page you're browsing in the message's body, and places the Web page's title in the message's Subject line. I find this easier than using the Services: Mail: Send To procedure when I want to point someone to an interesting Web page I've found.

For experienced scripters, typing directly in Safari's address bar is definitely faster. But for those with little or no scripting experience, typing the code in a text editor makes it much easier to debug code because you can see all of it at a glance (as opposed to the few characters that appear in an address bar). The suggested bookmarklet looks handy; one enhancement that might make it even more useful would be to add `+'\r'+window.getSelection()` *to the end. This would add any text you've selected on the Web page to the body of the e-mail, so the recipient would know a little more about the recommended page.—Dori Smith*

Hotspot Insecurities

KURT WIMMER

"Hop on a Hotspot" (*Mobile Mac*, March 2004) spotted—sorry—a number of important issues, but I was disappointed by its lax attitude toward security. Sure, if a stranger shares music files using your AirPort, you're unlikely to be tagged for it. But as an Internet lawyer, I've seen tougher cases. Suppose that stranger hacks into a company's Web site. Whose IP address has been left behind? Yours. You'll eventually be able to prove that your computers didn't access that site, but only after the police's forensic types have crawled carefully through all your computers. It's a nice legal theory to think "I'm an ISP," but don't ask me to be the test case. My security's turned on.

Hewlett-Packard Responds

HUGH AMICK (VICE PRESIDENT, MAC-CONNECT MARKETING, HEWLETT-PACKARD)

A *Macworld* reader expressed concern about the HP Designjet 120nr's Mac OS X support (*Feedback*, January 2004). We

continues

would like an opportunity to shed some light on the matter. Shortly after the introduction of the HP Designjet 120n/120nr, we released the HP PostScript RIP 3.1, which supports Mac OS X 10.2, followed by an enhanced version, RIP 3.2, in December 2003. In addition, HP has been providing the non-PostScript raster driver for Mac OS X 10.2, and it includes support for the new OS X 10.3. Recently, HP has also successfully tested RIP 3.2 with OS X 10.3. Customers can currently request a free, updated CD that now includes Panther support through HP support channels. Look for the details on www.designjet.hp.com.

Regarding RagTime

BOB HORST (PRESIDENT, COMGRAFIX)

We appreciate Galen Gruman's review of RagTime 5.6 (April 2004); however, there are some errors and omissions that should be pointed out. The review claims there was no printed documentation; two copies of the full RagTime package with documentation were sent to *Macworld* but were apparently not forwarded. Gruman wrote that he wished "there had been a keyboard shortcut for importing text and images." Any menu command can be given a shortcut by adding it in a menu item. He also wrote, "You can't create multiple text boxes on a page and link text between them." There is a tool in RagTime that allows you to do this quite easily.

RagTime has the largest AppleScript dictionary of any Mac program. The education and nonprofit price is $95. A noncommercial-use version of RagTime Solo is available for free. First Steps, an interactive tutorial, was created with RagTime.

Gruman never contacted RagTime with questions or requests for support. The questions were asked after the review was published. RagTime has received many favorable reviews; for links to them, see www.comgrafix.com/ragtimereviews.html.

I was wrong to say that you can't link text boxes on the same page. I should have said that it can be hard to do. The product provides two linking tools; only one works for flowing text. I stand by my criticism that there is no shortcut for importing text and images; permitting users to create AppleScripts to access common tasks is inadequate. It's true that users can buy copies with printed documentation, but users who choose to download the software get PDF documentation that is difficult to follow and not very useful. I did try to resolve the text-flow issue with tech support but I did not use my real name, to avoid special treatment.—Galen Gruman

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CORRECTIONS

"Wireless Input Devices," (*Reviews*, March 2004) mistakenly included Logitech's MX700 cordless optical mouse in a list of ambidextrous mice. It is designed only for right-handed use.

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HOW ANTIPIRACY FEATURES AFFECT YOU

Activation Nation

When the hard drive on Edward Coles's Power Mac G4 failed in February, the Ohio designer decided to upgrade to a Power Mac G5. Switching over the software from his old machine, Coles went to install QuarkXPress 6. The program displayed a message saying that Coles had exceeded the number of installations allowed. The same thing happened when he tried to reinstall Macromedia's MX 2004 suite.

Coles ran into a roadblock thrown up by software activation, a feature that developers are increasingly adding to their programs. Activation is an antipiracy tool that prevents users from installing software on unauthorized systems. While developers see activation as an easy solution to the very real problem of software piracy, some users are put off by what they view as an intrusive and burdensome addition to their applications.

"These software companies are not my business partners; they are my vendors," says Coles, who was blocked by activation features because he didn't deactivate the programs before switching computers. "I should not have to ask permission to reinstall the software."

All about Activation

Activation is a familiar concept in the Windows world, where it's featured in Microsoft's Windows XP and Office XP, among other software. But activation is only now coming to prominent Mac programs. Quark (www.quark.com) added an activation system for single copies of QuarkXPress 6, its page-layout application. Macromedia (www.macromedia.com) now includes activation features in its MX 2004 products and in Contribute 2. MYOB (www.myob.com/us) requires that users authenticate AccountEdge annually, to make sure they're legitimate owners of the software.

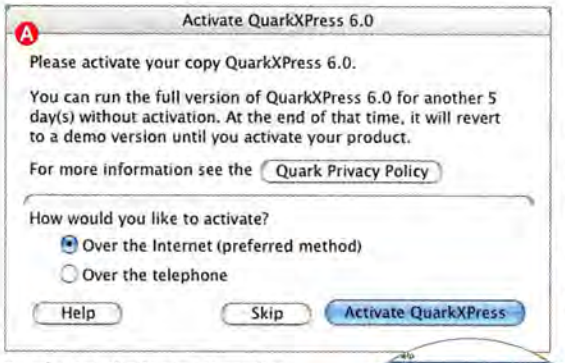
Software developers have a clear motivation for making sure that people using their products paid for licenses. The Business Software Alliance (BSA), an industry trade association, contends that the lion's share of the $13 billion that software publishers lose each year to piracy comes from workplace over-installation—putting copies of a program on more computers than the license allows. By linking a copy of a program to a specific computer, software activation puts the brakes on that practice.

"Activation ensures the software people are using is licensed and authorized," says Bob Kruger, the BSA's vice president of enforcement. "It can deter casual copying with little impact on legitimate use and legitimate customers."

"Reduced piracy allows us to invest in product development," adds Glen Turpin, Quark's director of communications. "And that's where we want to spend our energies."

Here's how activation works with QuarkXPress 6: When you install the software, it pulls the ID numbers of your Mac components, such as the hard drive and the RAM, to create identification. Quark stresses that it isn't collecting any personal information: "All we're doing is creating a unique number of a unique system," Turpin says. That activates your copy of QuarkXPress; if you move your software to

ILLUSTRATION BY LUBA LUKOVA



Ready, Set, Activate To combat piracy, Quark requires that XPress 6.0 users activate their copies of the software A. The company says that this one-time process takes just a few minutes via the Internet B.

another system, you'll have to reactivate QuarkXPress.

Adobe takes a similar approach for the Windows version of Photoshop CS: when a user registers the program, Adobe logs Photoshop's serial number and a randomly generated machine-identifying number. "Our secondary objective is to combat piracy," says Drew McManus, director of worldwide anti-piracy for Adobe. "Our first is that the honest customer isn't hassled by the program." (While Photoshop for Windows is Adobe's only product that currently features activation, the company plans to introduce it to other programs and platforms in the near future.)

MYOB features a slightly different process: after a year, AccountEdge prompts you to verify your company information. You have a 30-day grace period to authenticate with MYOB; after that, you won't be able to update information in your files until you complete the process, though you can still view and print information.

Customer Complaints

But activation doesn't always work as smoothly as advertised. A year ago, Intuit added activation features to its TurboTax software for the 2002 tax year (but not to the Mac version). After customer complaints, Intuit dropped activation from the 2003 version of its TurboTax line.

Consumer concerns over activation generally cover two areas—privacy and ease of use. Software users are uneasy with anything that even hints of exposing their personal data to someone else. And they're even less enthusiastic about a feature that could infringe upon their fair-use rights to a product they paid for.

Take the experience of Yvonne Walker, a certified MYOB consultant who saw a client reject AccountEdge because of the program's authentication requirements. The client expressed concerns about privacy and being locked out of his own files.

MYOB stresses that its authentication method doesn't intrude upon private data. "We're not interested in anything more than a match between a serial number and a company's name," says Cynthia Mackewicz, MYOB's general manager. The company claims that it gives plenty of advance notice when authentication is required, to avoid lock-outs. "We're trying to make this a very user-friendly experience," Mackewicz adds.

Some consumer advocates see activation driving a wedge between companies and consumers. "Ultimately, the business decision for [software companies] is whether this extra protection is worth the inconvenience to customers, driving them to other, better alternatives," says Wendy Seltzer, staff attorney for the Electronic Freedom Foundation (EFF), a digital-rights group.

Getting It Right

The BSA's Kruger concedes that some software makers have stumbled when adding activation to their products. "You always have to have missteps for others who come afterward to get it right," he says. "But I absolutely believe our companies are committed to getting it right."

Quark, for example, recently released an update to QuarkXPress that includes improvements to its activation feature. Originally, users could not copy and paste the lengthy activation code Quark sent them onto the software's activation screen; with QuarkXPress 6.1, they can. The update also lets users reactivate XPress over the telephone, instead of just online.

"We realize there is a balance between protecting our intellectual property and not wanting to inconvenience users," Quark's Turpin says.

The willingness of developers to improve upon activation features should offer some comfort to users, especially since it looks as though activation will be around for a while—or at least until software pirates figure out a way around it.

So how do companies implement it properly? The EFF's Seltzer would like to see companies spell out and stick to clear privacy guidelines while adopting features that continue to give users a range of rights. Many of those suggestions are endorsed by the BSA (see "Practices Make Perfect").

"As long as companies respect the interests of the end users, the [activation] technology can coexist alongside a very positive end-user experience," Kruger says.—PHILIP MICHAELS

Additional Reporting by Jeffery Battersby

Practices Make Perfect

While software developers must figure out how to include activation features in their products, the Business Software Alliance offers a list of best practices. Available at www.bsa.org/usa/antipiracy/Product-Activation.cfm, the list covers the following areas:

- **Privacy:** Activation shouldn't collect personally identifiable data without users' knowledge and should follow applicable data-protection laws.
- **Ease of Use:** Activation shouldn't be burdensome to the end user and should, ideally, be limited to a one-time process per machine.
- **Full Disclosure:** Software makers should clearly explain the activation process, including what data is collected and how it's transmitted, to users.
- **Support:** Users should have access to documentation and tech support to help with activation questions.
- **Security:** Activation methods should protect stored and transmitted activation data.
- **Speed:** Activation should be taken care of as quickly as possible.
- **User Control:** Activation should allow users to easily move programs to a new or upgraded computer in whatever way is authorized by the software licensing agreement.

ADOBE UNVEILS AFTER EFFECTS 6.5

Still in the Picture

Video may have killed the radio star, as the Buggles once sang, but on the Mac, the success of Apple's digital-video apps has helped kill Mac versions of Adobe's video software. In a little more than a year, Adobe (www.adobe.com) has dropped Mac support for Premiere while killing a Mac version of Encore DVD before ever releasing it (see "No Adobe, No Problem?" *Mac Beat*, June 2003), citing the dominant position enjoyed by Final Cut Pro and DVD Studio Pro on the Mac.

But when it comes to After Effects, Adobe isn't backing away from the Mac. The latest update to the motion-graphics, compositing, and visual-effects tool has a host of new features that boost speed and productivity, including enhanced support for PowerPC G5 processors. While After Effects has offered RAM previews of real-time playback, version 6.5 adds disk caching as well. That, coupled with better OpenGL support, should make for faster previews.

After Effects 6.5 has more than 60 new effects, including Particle World, Light Burst, and Toner, as well as the Cycore FX bundle. The update, set to ship before the end of June, includes Synthetic Aperture's Color Finesse—normally a $595 plug-in—for improved color correction. The program's Clone Tool adds user-definable presets while the Advanced Clone Tool now lets you see source and target at the same time. After Effects' Eraser tools have greater control and flexibility.

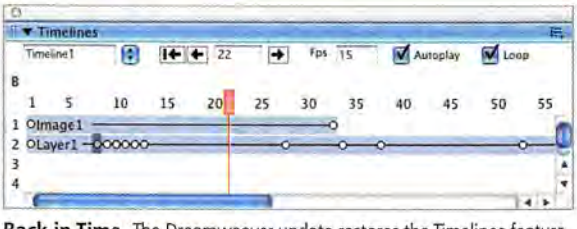
Among text features, After Effects includes more than 250 new text-animation presets for quickly switching between animation options. A new Effects & Presets palette lets you save effects, transformations, expressions, and text-as-animation presets—a real time-saver if you use the same settings again and again.

In addition to the $699 Standard edition, After Effects 6.5 is available in a $999 Professional edition. (You can upgrade to either from version 6.0 for $99.) The Professional version includes enhancements to motion tracking for improved accuracy and new scripting support for automating commands, which speeds up repetitive tasks. It also has Add Grain, Match Grain, and Remove Grain effects for making video look more like film and for matching grain among various film stocks.—JONATHAN SEFF

MACROMEDIA UPDATE PROMISES IMPROVEMENTS

Sweeter Dreams

Nobody likes hearing criticism—especially software makers when it comes to the usability of their products. But that's largely what Macromedia (www.macromedia.com) heard last fall after it released Dreamweaver MX 2004 (●●●½; January 2004). Many Mac users found the new version of the Web-design and -development software wanting; some people even questioned Macromedia's commitment to the Mac. But Macromedia hopes to answer those complaints with a Dreamweaver 7.0.1 update aimed at bolstering stability and performance.



Back in Time The Dreamweaver update restores the Timelines feature.

Many basic tasks—such as launching the program, switching between documents, and editing inside complex nested tables—are noticeably faster; the update also improves find-and-replace, CSS editing and rendering, and FTP performance.

Version 7.0.1 fixes a slew of bugs, more than any previous update to the program, according to Dreamweaver's product manager Jen Taylor. That's good news for Panther users who can't use the eye-dropper tool in MX 2004 and who struggle with a disappearing Insert bar and Property Inspector. The Timelines feature also returns in 7.0.1. And Macromedia hopes that Mac users' goodwill returns with it.—DAVID SAWYER MCFARLAND

CREATIVE BEAT

Amapi 7 Pro, from Eovia (www.eovia.com): 3-D–modeling software adds OpenGL-based real-time 3-D display ($799; upgrade from Amapi Designer 7, $329; from Amapi 6, $429).

BabelColor, from The BabelColor Company (www.babelcolor.com): Software translates color coordinates between RGB spaces ($65).

Box Editor, from Apago (www.apago.com): Adobe Acrobat plug-in uses new XML data format for easier exchange of data between publishers and advertisers ($29).

GraphicConverter 5.0, from Lemke Software (www.lemkesoft.de/en): Graphics-conversion software now supports lossless cropping of JPEGs and conversion to CMYK ($35; upgrade, free).

Mover 5, from e-on software (www.e-onsoftware.com): Animation software for Vue d'Esprit and Vue Professional adds ability to import complete animations created with Poser 4 or 5 ($99; upgrade, free).

TransPoser, from Eovia (www.eovia.com): Plug-in imports animation created with Poser 4 or 5 into Carrara Studio 3 ($129).—COMPILED BY PHILIP MICHAELS

PRODUCTIVITY BEAT

Final Draft 7, from Final Draft (www.finaldraft.com): Word processor for screenwriting adds Panels System, for splitting the screen into separate panels ($229; upgrade, $89).

QuicKeys X2 2.1, from CE Software (www.cesoft.com): Automation utility adds multistep functionality for jumping to a particular step in a shortcut ($100; upgrade from version 2.0, free; from version 1.5, $20; from version 1.0, $35; from Classic version, $70).

XTension 5.0, from Sand Hill Engineering (www.shed.com) Automation software for controlling home appliances such as lamps, motion detectors, and heating systems is OS X compatible ($150).—COMPILED BY PHILIP MICHAELS

ICONS BY PAUL HOWALT

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MA/MW 6/04

DOTPHOTO HELPS PROS, AMATEURS SELL THEIR IMAGES

Every Photo Has Its Price

eBay has made the Web one of the easiest way for individuals to sell items—from bric-a-brac to automobiles—to buyers far and wide. For photographers, dotPhoto (www.dotphoto.com) makes it just as easy to connect with potential purchasers. For the past three years, the online service has served as an online outlet for photographers looking to sell their prints without the hassle of turning to a major image-licensing firm, such as Corbis, or of setting up their own e-commerce site.

But that's not to say dotPhoto is only for professional photographers. "We like to say that each person has at least 50 or 100 great photos inside of them," says Samuel Kolodney, dotPhoto's vice president of marketing and development. Of the site's 6,000 or so custom-pricing users, fewer than 1,000 are pros (that is, dotPhoto users who receive regular royalty checks). Clearly, dotPhoto is the great equalizer—it allows event photographers, newspapers (close to 300 use dotPhoto), and average Joes and Janes to show and sell their work.

Picture Changes dotPhoto is rolling out several new features that will make it easier for photographers to sell their digital images on the Web.

Here's how the service works: as a dotPhoto user, you upload your digital pictures to the site. You can then add watermarks and keywords, remove the ability to download preview images, and even set up a password for viewing your albums. You set prices for each print size; once your account hits a certain amount, dotPhoto sends out a check or makes an electronic transfer to your bank account—after subtracting a 15 percent commission, a 3 percent credit-card fee, and a standard fee based on photo size.

dotPhoto plans several enhancements, which should be in place by the time you read this. Right now, you can buy only prints from the site; dotPhoto wants to add templated licensing agreements to help users sell digital images in different sizes and for different purposes (a high-resolution image for use in a 100,000-subscriber magazine, for example). Stock-photo retailers such as Corbis already offer that capability. dotPhoto will also update its search engine to show every image that conforms to a search, not just the top 50 hits. Shoppers will be able to vote on photos, so image rankings will change accordingly. All of the changes are aimed at helping you turn that hard drive full of photos into a wallet full of cash.—JONATHAN SEFF

APPLE ADDS SPOKEN INTERFACE TECHNOLOGY TO OS X

Speaking of Access

Mac users have never enjoyed many options when it comes to screen readers—applications that attempt to speak what's happening on screen so that users with visual impairments can navigate a computer's interface. And when Alva Access Group dropped support for its inLarge and OutSpoken readers last year, the list of options shrank even further.

But now Apple plans to provide an option of its own, which will be incorporated into Mac OS X. Called Spoken Interface, this new technology combines speech, audible cues, and keyboard navigation to help blind users work more easily with OS X. With Spoken Interface, users can access the Dock, menu items, tool bars, palettes, and other on-screen objects; press buttons; activate sliders and check boxes; select radio buttons; and use all the other interface elements of OS X and its applications.

Apple believes that Spoken Interface is more effective at addressing the needs of visually impaired users than a third-party screen reader. "Those apps have been after-the-fact solutions," says Mike Shebanek, Apple product manager for OS X. "They've always been bolted on to the operating system by third parties and have had to play catch-up when changes are made." The technology uses a single set of key commands for a unified, consistent user interface. It also integrates with OS X's existing Universal Access features (see "Access Granted").

Spoken Interface will appear in the next major revision of OS X, but Mac users can preview it by filling out a form at www.apple.com/accessibility/spokeninterface/questionnaire.html. The preview also features apps that have been enhanced for Spoken Interface, including Safari, Mail, TextEdit, and System Preferences.—PETER COHEN

Access Granted

These Universal Access features—accessible via System Preferences—already exist in OS X 10.3.

> **Black on White:** This option increases a display's contrast, for easier-to-read text.

> **Modifier Keys:** If using a keyboard is difficult, you can press modifier keys (⌘, option, control, or shift) sequentially instead of simultaneously.

> **Mouse Alternatives:** If you have difficulties using a mouse, Panther lets you move the cursor with the keyboard.

> **Screen Flashes:** If your hearing is impaired, you can set your Mac's screen to flash, instead of beep, for alerts.

> **Speech:** You can use speech recognition to launch and control programs.

> **Zoom:** This display option magnifies what's on your screen.

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ADOBE DROPS MAC SUPPORT FOR FRAMEMAKER

Out of Frame

Move over, PageMaker. Make way, Premiere. Another Adobe application is headed for the Mac graveyard, which is filled with programs that either weren't updated for OS X, no longer run on Macs, or have been Windows-only from the start.

FrameMaker, a linchpin application at shops that publish long technical documents, is the latest Adobe Mac app to fall by the wayside. Adobe stopped offering technical support for FrameMaker, for free or for a fee, in April.

FrameMaker's fate, while disappointing to its corps of devoted Mac users, is hardly surprising. The software giant hadn't issued a Mac update to FrameMaker since 2002. And that release, FrameMaker 7, ran only on the aging OS 9—not on OS X.

Karl Matthews, group product manager, and Tony Yun, product manager, put the blame for the death on FrameMaker's small Mac base. Without a market, Adobe executives contend, it wasn't good business for the company to continue developing the product.

While Adobe offers an InDesign PageMaker Plug-in Pack as a way for displaced PageMaker users to migrate to InDesign CS (see our review of Adobe PageMaker Plug-in Pack, page 43), the company is mum on whether similar plans are in the works to add FrameMaker functions to Adobe's remaining Mac page-layout program. With no other application quite like FrameMaker, fans of the late program hope that it lives on, even in such an altered form.—TERRI STONE

EXAMINING 1984'S OTHER LANDMARKS

Class of '84

Sure, Apple made big news in 1984 when it launched the Macintosh. That doesn't mean everything else stood still as the first Macs began rolling out of Cupertino. Plenty of other products, programs, and people got their start 20 years ago. But which ones matched the Mac's staying power over the past two decades, and which ones faded from memory like yesterday's Rubik's Cube? Here's a look at some other headline grabbers that made their debut alongside the Mac in 1984, and at how they've fared since then.—PHILIP MICHAELS

MIAMI VICE

The Details: Ultrahip cop show blends music, fashion, and morally ambiguous plot lines to wow audiences and inadvertently spawn Don Johnson's singing career.

Mac Connection: Detective Crockett's pastel-hued fashions presage the iMac's color scheme by more than a decade.

Staying Power: *Vice* petered out after five years (1984 to 1989), sticking around longer than the Lisa (1983 to 1985), but not as long as John Sculley (1983 to 1993).

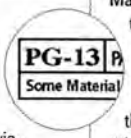
SONY V. UNIVERSAL CITY STUDIOS

The Details: The Supreme Court rules that Sony did not violate copyright laws by selling VCRs that let users tape TV shows. Motion Picture Association of America president Jack Valenti comments: "The VCR is to the American film producer and the American public as the Boston Strangler is to a woman home alone."

Mac Connection: Mr. Valenti, meet peer-to-peer file sharing.

Staying Power: The VCR remains a staple of the American home-entertainment setup, with folks now able to record and watch programming on their Macs. There's been no word yet on whether Hollywood has crumbled into ruin as a result.

PG-13 RATING



The Details: After the PG-rated *Indiana Jones and the Temple of Doom* and *Gremlins II* prove too violent for some parents' tastes, the Motion Picture Association of America creates the PG-13 rating for films containing material that may be inappropriate for children under 13.

Mac Connection: Many feature films, including some containing material that may be inappropriate for children under 13, will be edited with Final Cut Pro.

Staying Power: Of the 25 highest-grossing films released in 2003, 13 carried PG-13 ratings. (The highest-grossing G-rated movie? *Finding Nemo*, from Steve Jobs's other company.)

HULKAMANIA

The Details: Hulk Hogan pins The Iron Sheik to capture the WWF Heavyweight Title, sparking an unprecedented boom in the popularity of professional wrestling.

Mac Connection: Hogan wins the title on January 23. The next day, Apple unveils the Mac. Coincidence?

Staying Power: After Andre the Giant cheats Hogan of the title, Hogan's first championship reign ends in 1988. The same year, Apple sues Microsoft, claiming the software giant cheated by stealing the look-and-feel of the Mac's interface. This is starting to get spooky.

ROGER CLEMENS

The Details: The six-time Cy Young Award winner makes his Major League Baseball debut on May 15, 1984.

Mac Connection: Clemens has spent the bulk of his career pitching in Boston and New York, both of which have hosted Macworld Expos. (Alas, there are no plans for a Macworld Expo Houston.)

Staying Power: Twenty years later, The Rocket—like the Mac—is still in the game.

Other Classmates

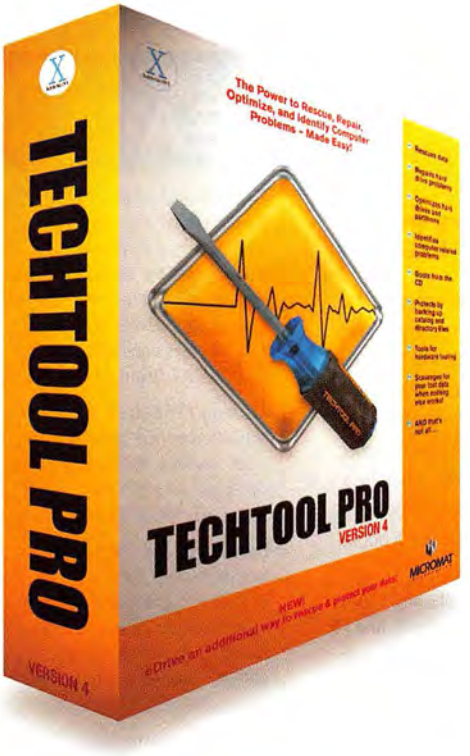
These other products and developments grabbed headlines in 1984.

> **IBM's PC Jr:** Technically, IBM announced this product in 1983, but it didn't ship until March 1984. IBM's attempt to make the Computer For The Rest Of Us wound up being the Computer That Was Discontinued A Year Later.

> **Bell Labs' megabit memory chip:** The chip, the first to store 1 million bits of electronic data, quadrupled the capacity of existing memory chips. RAM capacity has climbed considerably since then.

> **Hewlett-Packard's LaserJet:** Billed as the world's first desktop printer, the LaserJet featured 300-dpi resolution and a $3,500 price. Between this and the Mac, 1984 turned out to be a pretty good year for desktop publishing.

> **Cyberspace:** The term, coined by William Gibson in his 1984 debut novel *Neuromancer*, described "a consensual hallucination experienced daily by billions of legitimate operators, in every nation, by children being taught mathematical concepts. . . . A graphic representation of data abstracted from the banks of every computer in the human system. Unthinkable complexity." Presumably, Gibson was not envisioning AOL.—PHILIP MICHAELS



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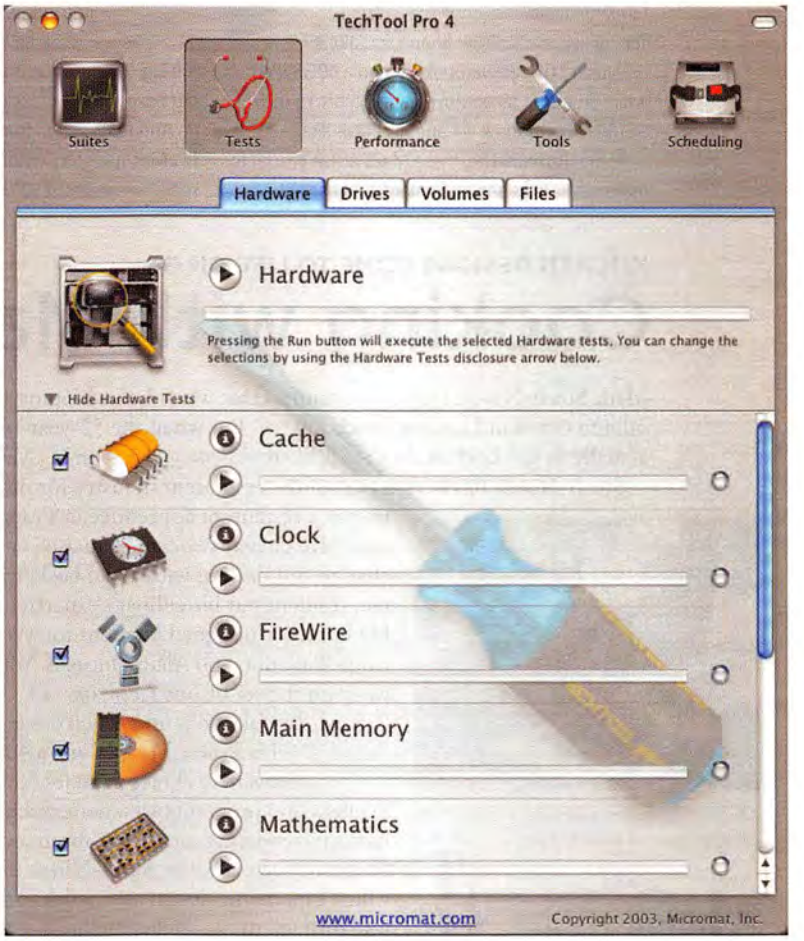

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MACS AT WORK

ROCK BAND TAKES ITS MACS ON THE ROAD

Macs Are Instrumental

When Sune Wagner hits the road with his band, The Raveonettes, one piece of equipment needs to accompany him everywhere—and it's not necessarily his guitar. Instead, Wagner's 15-inch PowerBook G4 is the most important thing he takes on the road.

"The best thing is that I have it at all times," the Raveonettes lead guitarist and singer says.

Wagner's attitude is shared by the rest of The Raveonettes, a Danish rock band that's developing a following stateside. (The band's 2003 album, *Chain Gang of Love*, made *Rolling Stone*'s year-end Top 50 list.) Bass player Sharin Foo owns a 12-inch 1GHz PowerBook G4 and a 40GB iPod, while drummer Jacob Hoyer jams on his 15-inch 867MHz PowerBook G4 and his 20GB iPod.

To The Raveonettes, these Macs are as crucial to making music as any instrument. Wagner not only uses his PowerBook to create beats before performances, but also keeps it powered up on stage as the band plays, running a long Apple Pro Tools session with some backup beats, additional percussion, and harmony. The band records all its music via the Mac. Sometimes, Wagner even moonlights as a DJ when he's on tour, hooking up his iPod to a set of speakers to share a good mix of music.

"I'll run Pro Tools, and I'll put in songs [the day before], and I'll edit a really good set with a nice flowing set and will import it as one long DJ set into the iPod," he says. While he loses the spontaneity of live mixing, Wagner says it saves him from transporting boxes of records and CDs to parties.

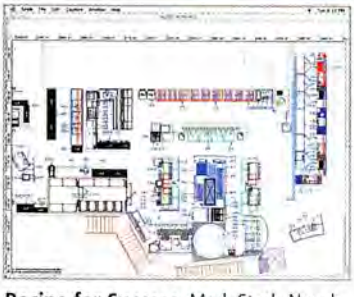
And for Wagner, that's reason enough to keep his Mac gadgetry within arm's reach. "I can't really live without it," he says.—CYRUS FARIVAR

KITCHEN DESIGNS COME TO LIFE ON G4

Cooking with Macs

Mark Stech-Novak feels most comfortable when he's whipping up a plate of wild salmon cured in Lapsang souchong tea. But when the 52-year-old former chef isn't actually *in* the kitchen, he's most likely *designing* one—on his Mac.

Stech-Novak has been a part of the restaurant industry for more than 30 years, first as a restaurant apprentice in France and later as the executive chef at two San Francisco eateries. Seeking a change and dealing with a bad back, the Oakland, California, resident put his culinary expertise to work as a designer. He has since designed kitchens for Wolfgang Puck, Jean-Louis Palladin, and Alain Ducasse. You can see his handiwork on the set of *Iron Chef America*.



Recipe for Success Mark Stech-Novak designs these kitchens with a Power Mac G3 and a G4.

Stech-Novak cooks up kitchen designs for his clients on a dual-1.42GHz Power Mac G4 and a 400MHz blue-and-white G3. His software of choice includes Nemetschek's VectorWorks CAD program (www.nemetschek.com) and Abvent's Artlantis rendering tool (www.abvent.com). Once he creates a design in VectorWorks, Stech-Novak imports it into Artlantis, which exports the design as a QuickTime VR file for a virtual walkthrough of the kitchen before any construction begins.

Stech-Novak believes he'd have a harder time designing a kitchen with a PC. "I've been using a Mac since the early 1980s [and] once you get into it, you don't feel like changing it," he says. "[If you do change,] you're searching for some of the shortcuts that aren't there."

Stech-Novak does own two PC laptops, which he uses for showing clients his creations. But he adds, "Would I design on [a PC]? Not on your life."—CYRUS FARIVAR

STORAGE BEAT

400GB SimpleDrive, from SimpleTech (www.simpletech.com): External drive with USB 2.0 and FireWire 400 interfaces features a 7,200-rpm mechanism compatible with both Mac and Windows operating systems ($500; USB 2.0–only, $470).

Alchemy FW 800 CB card, from Miglia Technology (www.miglia.com): FireWire 800 expansion card plugs into PC Card slot of a PowerBook G3 or G4 ($89).

DRX-700UL, from Sony (www.sonystyle.com): External DVD+R burner supports double-layer recording, allowing users to record up to four hours of MPEG-2 video on a single compatible disk ($330).

MacBurn, from macXware (www.macxware.com): Program for burning data to CDs and DVDs and audio tracks to CDs supports MP3, MOV, WAV, AIFF, MPEG, and other file formats ($30).—COMPILED BY PHILIP MICHAELS

MULTIMEDIA BEAT

CinéWave 4.5, from Pinnacle Systems (www.pinnaclesys.com): Digital-video–editing and –compositing system adds new real-time high-definition capabilities optimized for the Power Mac G5 and full support for RT Extreme (contact Pinnacle for standard pricing; upgrade, free from CinéWave 4, $295 from prior versions).

DeckLink Extreme, from Blackmagic Design (www.blackmagic-design.com): Uncompressed 10-bit PCI capture card includes SDI, analog component, NTSC, and PAL support ($895).

Mayhem, from Audio Damage (www.audiodamage.com): Suite includes four VST audio plug-ins ($149).

Traktor Final Scratch 1.5.1, from Stanton and Native Instruments (www.finalscratch.com): DJ software for mixing digital-music libraries adds optimization and stability improvements for OS X 10.3 ($69; download, $49).—COMPILED BY PHILIP MICHAELS

FAST vs FURIOUS

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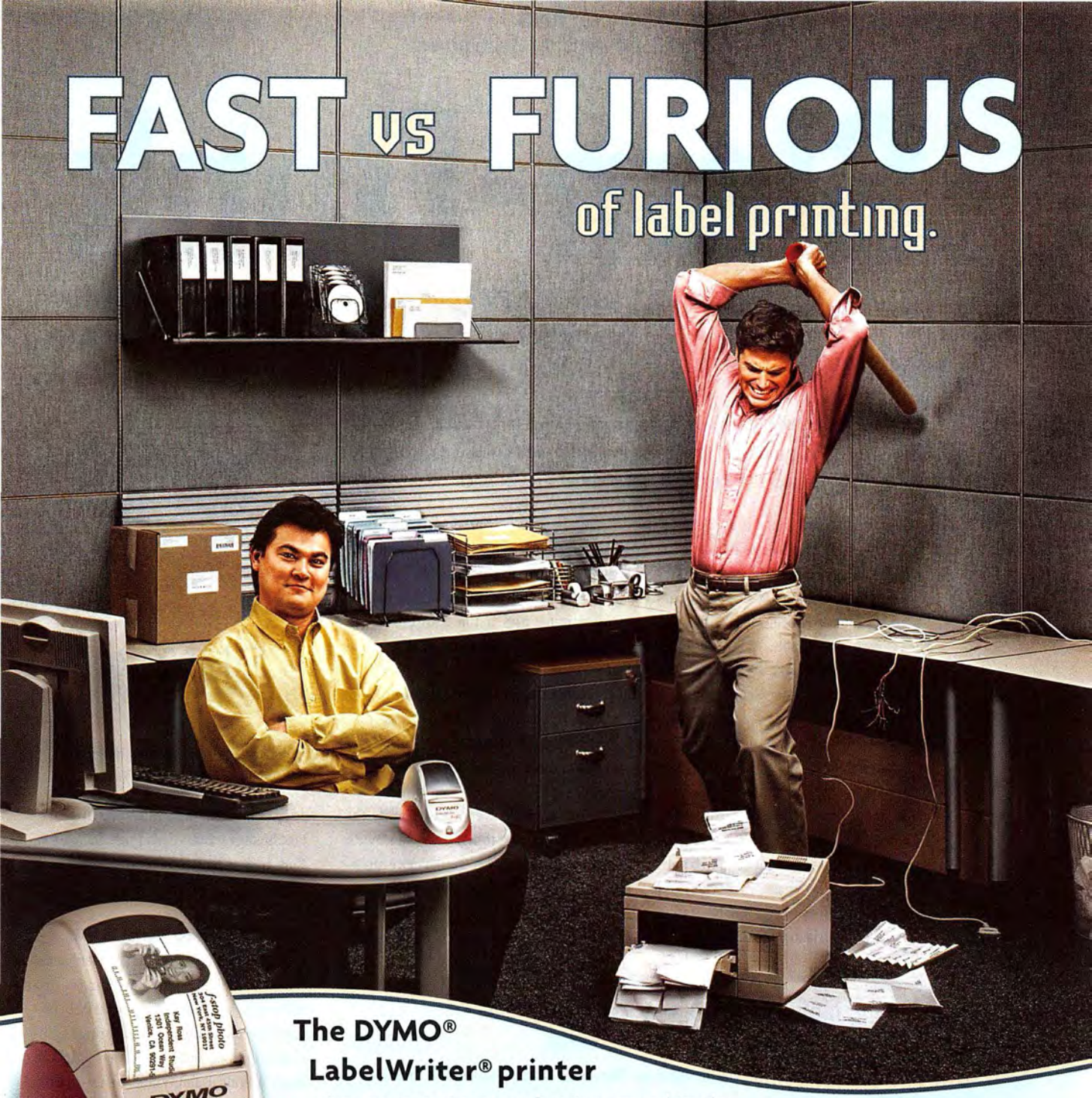

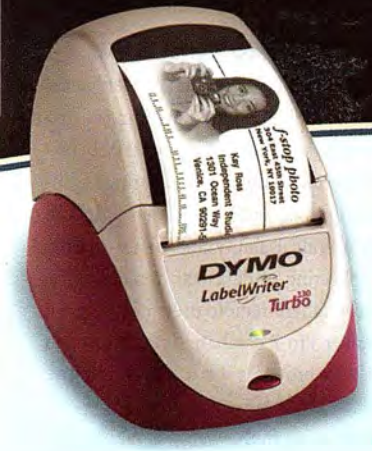

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Slam-Dunk

Richer Web publishing, an advanced new security system, and ease-of-use breakthroughs make FileMaker Pro 7 a must-buy upgrade

To the basketball fan, a slam-dunk is a sure thing. In the database world, a slam-dunk product is one brimming with so many useful, accessible productivity features that buying it is just about a no-brainer.

That neatly sums up the new FileMaker Pro 7. This latest upgrade of the database software of choice for millions of users worldwide is the easiest-to-use, most customizable ever. It is brimming with user-friendliness that enables powerful functionality. And FileMaker Pro 7 is packed with true business value that makes it a most compelling upgrade—a slam-dunk.

With FileMaker Pro 7, users can store and manage almost unlimited amounts of data—an amazing 8 terabytes—in just about any format. Advanced security features make easy work of ensuring that the right people access the right data. Web publishing capabilities make it quicker and easier than ever to work the Web by sharing business-critical data online. FileMaker Pro 7 sports superb new productivity features, like the ability to open multiple windows simultaneously to gain speedier access to information. FileMaker Pro 7 is highly customizable and is tuned to effortlessly manage a broad spectrum of data—and any file.

The bottom line is that FileMaker Pro 7 makes it easier than ever to manage your information. The experience of early users of this exciting upgrade serves as an exclamation point.

"They've made it a lot easier to do the many different things we do with FileMaker," notes Alex Perilla, vice president of the Strategic Communications Group at the National Council of La Raza, "For example, the enhanced report-generating capabilities are tremendous. It used to take literally weeks to file financial reports. Now it is a matter of minutes. It's been absolutely eye-opening."

FileMaker Pro 7 is the most important upgrade in FileMaker history.

Leveraging the Web

For Perilla and others, the Web enhancements to FileMaker Pro 7 are a major and welcomed addition. These new Web features include improved rendering, additional controls, and 70 new Web scripts to boost overall usability and better sharing and collecting of data with remote users. Moreover, these remote users can access a FileMaker Pro 7 database directly through their Web browsers via a highly intuitive interface.

"Publishing to the Web was taking a lot of development time," says Perilla. "It will take far less with FileMaker Pro 7, which to me holds great promise for reducing both the time and expense of Web publishing."

Antonio Rodriguez, manager of technology at New York Cares, a nonprofit group, echoes this praise for FileMaker Pro 7's Web functionality. The group makes extensive use of its Web site, including securely cap-

Included among more than 100 new and enhanced features in FileMaker Pro 7 are the following:

- **Import, store, and export any file: PDFs, photos, Microsoft Office documents, music files, and more**
- **Open multiple windows in the same database at the same time for unprecedented multitasking**
- **Super-expanded 8-terabyte database storage; container fields can store up to 4 gigabytes and text fields up to 2 gigabytes**
- **A new option lets you confirm data and layout changes before you commit them, so you can experiment with new layouts**
- **New relational model to streamline the creation of simple and complex databases**
- **New relationships graph to link data between tables just by clicking and dragging**
- **Enhanced Web publishing capabilities, all with point-and-click ease**
- **Advanced security features using account names and passwords and simple assignment of custom privileges for any user**
- **Designed from the ground up for Mac OS X and Windows XP/2000**

turing information from the volunteers that are the lifeblood of New York Cares. "The Web publishing process has been greatly simplified. We no longer need middleware solutions to go between the Web and our databases. FileMaker Pro 7 takes a lot of stress off Web publishing."

Advanced Security System

Of course, in all aspects of business computing today—from Web publishing to report generation to database management—security is of foremost importance. If customers have any doubts about the sanctity of the data you gather from them or about them, they just won't do business with you. For this reason, users are warmly embracing the enhanced, built-in security attributes of FileMaker Pro 7.

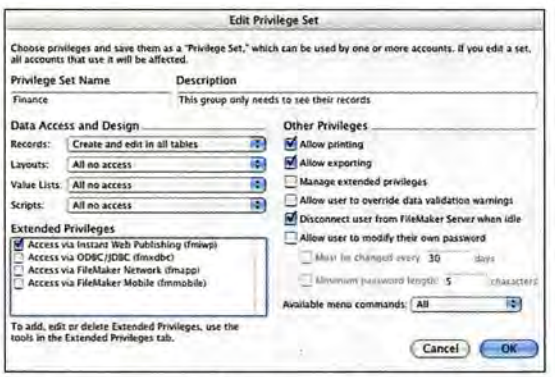
The advanced security features of FileMaker Pro 7 secure the database with account names and passwords while allowing administrators to easily assign custom privileges to individuals or groups. For example, senior managers may gain access to all information in customer records, but salespersons can only access records on customers in their territories. Web publishers can use the security and user definitions from their desktop solutions, including record locking and other security features extended to Web users. So security levels that are set up at the desktop also apply when the database is shared with other FileMaker users or over the Web.

The net result of these enhanced security features and functions is that all users can get just the information they need, but no more. Administrators can quickly create data entry views, manager views, reporting views, and more, and then easily authorize just who gets access to what data.

The Web publishing process has been greatly simplified in FileMaker Pro 7, and users are warmly embracing the greatly enhanced, built-in security attributes.

"The security features of FileMaker Pro 7 are very important to us," says Ken Newell, programmer/analyst at the Hamilton Glaucoma Center at the University of California at San Diego. "In the past, our developers had to create their own log-in system. Now these and a lot of other security features are built in so our developers don't spend valuable time scripting. From my perspective, security in FileMaker Pro 7 is integral, a key component."

Security is definitely mission-critical at the Hamilton Glaucoma Center, where data protection must conform to the strict standards set by the federal government by way of HIPPA requirements to protect confidential data. Newell's organization works with a combination of file types, including very complex medical files. These files, or any other type of file, can now be stored in new, agile Container fields. Moreover, users and developers can choose to link to different kinds of files instead of storing them. The variety of files that can be imported, stored, and exported include: digital images and photos; movies; music; Microsoft Word, PowerPoint, and Excel documents; PDFs; and many others.



Security counts with FileMaker Pro 7. Users can get exactly what they need, but no more.

"We need a development environment that is very flexible," Newell notes. "With FileMaker Pro 7, that's just what we get. It's amazing the way it handles all sorts of different data types with such ease. And it protects both the integrity of our data and the privacy of patients."

Users also have the option to confirm record and layout changes before they are actually saved. This ensures more accurate data entry and far safer updates, and it saves time and trouble by avoiding mistakes that need to be corrected later. It also allows users to experiment with new layout changes without committing to a new design.

To find more information on the new and enhanced features of FileMaker Pro 7, click on www.filemaker.com/ mwld2.

Using an old version of FileMaker Pro? For a limited time, users of FileMaker Pro 6 all the way back to FileMaker Pro 2.1 may upgrade to FileMaker Pro 7 for only $149 (save $150 off full price).* *See www.filemaker.com/mwld2 for details.*

*Only licensed users of FileMaker Pro software are eligible for this promotion. For FileMaker Pro 2.1-5.x customers, this offer expires Sept. 17, 2004. After Sept. 17, 2004, only FileMaker Pro 6 customers will qualify for this offer.

REVIEWS

OUTSTANDING:
VERY GOOD:
GOOD:
FLAWED:
UNACCEPTABLE:

Reviews you can trust: Macworld rates only final shipping products, not prototypes. What we review is what you can actually buy.

Flash-Memory MP3 Players

Portable Audio Players Offer Music to Go, on the Cheap

BY MATHEW HONAN

When Apple's iPod burst onto the scene, many people who previously hadn't thought about buying an MP3 player snapped to attention. Flash-memory–based players had been fairly inexpensive but very frustrating to use with Macs. Now the hard-drive–based iPod and iPod mini are the best-selling MP3 players on the market. Given this new context, we decided it was time to look at the alternatives, for people who are on a tight budget and who just want to use a player at the gym or during a commute, and not for storing a huge music collection.

We tested seven flash-memory–based MP3 players: Rio's Fuse, Chiba, and Cali; Pogo Products' AudioRave; TDK's Mojo 128F; First International Digital's irock 860; and SmartDisk's Rover. Most of these devices are designed exclusively as portable audio players and recorders, and all offer extra features, such as voice-recording functions, stopwatches, FM tuners, and equalizer presets. The PoGo AudioRave and the SmartDisk Rover are both marketed as thumbdrives (or tiny USB drives) with the added ability to play MP3s. Of these players, the Rio Cali was the clear winner.

TDK's Mojo 128F

Rio's Chiba

Battery Life

When you take your portable audio player out for a jog or a bike ride, you don't want to outlast its batteries. None of these players comes with rechargeable batteries (though all will work with them), yet each device has enough battery life for several outings. In our tests, we inserted fresh batteries, set the players to repeat, and played music at maximum volume until the batteries were exhausted. We tested each player twice and averaged the results.

Although all of the players fared well, the irock 860, which is the only player that uses a AA battery (the rest use one AAA battery), fared dramatically better than the rest, clocking 28 hours of play. The Fuse came in second, at more than 14 hours, and it was closely followed by the Chiba and the Rover, both of which lasted just less than 14 hours. The Cali came in next, at 12 hours, and the Mojo 128F and the AudioRave rounded out the pack, at 8.5 and 7 hours, respectively.

Storage Capacity

The Chiba, Cali, and irock 860 are 256MB players; the rest of the players we tested are 128MB devices. Some of these players (including the Cali and the Chiba) are available in multiple memory configurations. None will hold a full complement of songs—in other words, you can't actually fit

Flash-Memory MP3 Players Compared

COMPANY	PRODUCT	MOUSE RATING	PRICE	OS COMPATIBILITY	CONTACT	BATTERY LIFE[A]	PROS	CONS
First International Digital	irock 860	♦♦♦½	256MB, $150	X	866/694-7625, www.myirock.com	27:54	Best battery life; well-designed user interface; included FM tuner.	Causes occasional iTunes crashes; installation problems (company says these have been remedied).
PoGo Products	AudioRave	♦♦♦½	128MB, $100; 256MB, $150	9X	866/367-7646, www.pogoproducts.com	7:06	128MB player is inexpensive; plugs directly into USB port.	No iTunes compatibility; short battery life.
Rio	Cali ★	♦♦♦♦	128MB, $130; 256MB, $180	X	800/468-5846, www.rioaudio.com	12:04	Great user interface; included FM tuner, stopwatch, belt clip, and arm strap; Secure Digital expansion slot.	Slightly bulky.
Rio	Chiba	♦♦♦½	128MB, $130; 256MB, $180	X	800/468-5846, www.rioaudio.com	13:50	Great user interface; included FM tuner and stopwatch; Secure Digital expansion slot.	Slightly bulky.
Rio	Fuse	♦♦♦♦	128MB, $100	X	800/468-5846, www.rioaudio.com	14:18	Great user interface; excellent battery life; small; stopwatch.	None significant.
SmartDisk	Rover	♦♦♦	128MB, $100	9X	239/425-4000, www.smartdisk.com	13:46	Plugs directly into USB port; included FM tuner and voice recorder.	Confusing user interface; hard-to-use buttons; no ID3 tag display; no iTunes compatibility.
TDK	Mojo 128F	♦♦♦½	128MB, $160	X	800/835-8326, www.tdk.com/cdmp3/	8:30	Great user interface; best iTunes integration; included FM tuner and voice recorder; Secure Digital expansion slot.	Short battery life; expensive for storage space.

★ = Editors' Choice. [A] Battery life is in hours:minutes.

PHOTOGRAPHS BY PETER BELANGER

32 MP3 players
First International Digital irock 860
PoGo Products AudioRave
Rio Cali
Rio Chiba
Rio Fuse
SmartDisk Rover
TDK Mojo 128F

36 Remote desktop application
Timbuktu Pro 7.0

38 Color laser printers
Brother HL-2700CN
Hewlett-Packard Color LaserJet 3500n
Konica Minolta magicolor 2350en
Lexmark C510n
Oki Data C5300N
Xerox Phaser 8400/B

41 Desktop computer
Power Mac G5/dual-1.8GHz

42 Backup software
Retrospect 6.0

43 Desktop publishing plug-ins
PageMaker Plug-in Pack

44 FireWire analog-to-DV converters
ADS Technologies Pyro A/V Link
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Datavideo DAC-100
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46 Font utility
Font Doctor 6

46 Large-format ink-jet printer
Epson Stylus Pro 4000

47 External storage drive
LaCie Bigger Disk

47 Graphics tablet and pen
Wacom Graphire3 6×8

48 Design package
The Print Shop Mac OS X Edition

51 The Game Room
Unreal Tournament 2004, The Lord of the Rings: The Return of the King, Super TextTwist, Super WhatWord, and Call of Duty

56 Mac Gems
FaxEmailHelper, iPod It, Mail-Enhancer, MenuPrefs, Safari Extender, and ToDo X

128MB of MP3s on any of the 128MB players—due to the software and settings that come installed on the players. However, these take up a negligible amount of space—less than 1MB in most cases. For a sense of how this translates into actual music time, 128MB gives you enough storage for about 139 minutes of MP3s encoded at a bit rate of 128 Kbps, whereas you'll get about 279 minutes with 256MB of storage. That's plenty of music to get you through a morning jog and then some, but if you want to keep your entire music collection stored on your player, you'll prefer a larger-capacity, hard-drive–based player such as the iPod or the iPod mini.

The storage capacity of the Chiba, Cali, and Mojo 128F can be expanded by adding a Secure Digital (SD) expansion card. This is an easy way to dramatically boost those players' capacities; however, expansion cards are rather expensive. A 512MB memory card—the largest the Rios can hold—will set you back $150 to $200. At that price, the argument for buying an iPod or an iPod mini gets even stronger.

Transfer Rate

As we expected, transferring MP3s to these players took much more time than transferring music files to an iPod. We transferred 122MB of MP3s (about three albums' worth) to an iPod, which uses FireWire, and it took only 22 seconds. But transferring the same amount to the Fuse and the AudioRave took a painful 5 minutes, and they're just a small sample of the players we tested; all the flash players we tested transfer at USB 1.1 speeds.

The much slower transfer rate is a trade-off for the lower price you pay for a flash player, and it's one to consider carefully. If you're always on the go and must be able to transfer music quickly, you'll probably be dissatisfied with one of these players. And remember that because these players have lower capacities, you'll be transferring music to them more often than you would to an iPod or an iPod mini.

Rio's Cali

PoGo Products' AudioRave

Installation and iTunes

Out of the box, the Rio players work with iTunes, assuming you're using a recent version of the program. The Mojo 128F and the irock 860 are also iTunes-compatible, but you have to install the drivers from the CD. Installing the software for the Mojo went without a hitch, but we had problems running the installation CD accompanying the irock. Although we were able to install the drivers, we had to do so manually, circumventing the installation program that shipped on the CD. First International Digital says it's aware of the problem and no longer ships CDs with this bug.

Neither the AudioRave nor the Rover is iTunes-compatible, although PoGo Products says it hopes to add iTunes compatibility in the future. Neither of these players requires any software installation.

The Mojo 128F has the best iTunes compatibility of any of the MP3 players. It has more features that work while the player is connected to your iTunes library, with options for erasing tracks, updating the player's firmware, and adding or removing folders. Like the Mojo 128F, the Rio players show up in iTunes as playlists, so it's easy to drag and drop files from your iTunes library to the attached device. The Rios do a better job of displaying track information—they list the full ID3 tag information (data stored in an MP3 file, including artist, song name, album title, genre, and more), whereas the Mojo 128F lists only song names.

The irock 860 also shows up as a playlist in iTunes, but it crashed the program on several occasions when we tried to add and remove songs. First International Digital says this is due to iTunes' inability to deal with long file names and certain characters. However, we used the same playlist for each player, and the irock was the only player that caused iTunes to crash or freeze. In any case, it's unreasonable to expect users to rename all the songs in a music library to get the songs to work with a specific player. We found it easier to add and delete songs via drag and drop, with the irock mounted as a removable disk, instead of doing it in iTunes.

We vastly prefer players that work with iTunes, for several reasons. First, it's easier to organize music files within the iTunes music library itself than to hunt for them in the Finder. Second, when you drag and drop files to the Trash from the Finder, they remain locally on your device until you empty the Trash. Because the Trash folder is hidden on removable devices, this can baffle first-time users and leave them wondering where all their drive space went.

User Interface

Rio released the first portable MP3 player on the market, and the company's long experience shows in its players' user interfaces. Rio says it aims to produce a product that's so easy to use, customers can throw away its instructions. We did, and we were able to operate the Rio players without a problem.

An MP3 player is a consumer audio device and should be no more complicated to use than a portable CD player. We asked several average users to try out each player in this review without looking at any instructions. Everyone chose the Rios as the easiest to use. These players have the best button placement, and they operate as users expect them to.

continues

First International Digital's irock 860

The Mojo 128F was another favorite among our testers. Although it doesn't have as many functions as the Rio players do, the Mojo 128F performed its tasks quite well, and our testers didn't have problems accessing even some of its more-advanced features, such as equalizer settings. Likewise, the irock 860 has a straightforward, easy-to-use interface. However, a couple of testers accidentally set the irock to FM Tuner mode and had trouble switching it back (to do this, you have to hold down the Menu button). We didn't consider this a major problem. The AudioRave was also easy to use, but it wasn't as intuitive as the others.

The Rover is the only player with a poor user interface. It doesn't display ID3 tags; rather, the Rover displays the file names of songs being played. So if you have several songs with similar file names (as is often the case with songs from the same artist and album), finding the right one can be difficult. In addition, the Rover's Menu button, located on its side, is flimsy, sensitive, and very awkward to use. We also had a great deal of difficulty accessing menu functions and navigating between songs on this player.

Most of these players have equalizer presets, typically programmed for a specific genre of music (jazz, rock, vocals, and so on). The Mojo 128F has the most presets—seven—plus a user-configurable setting. The Rio players have six settings, as well as the ability to adjust bass and treble. The Rover and the irock 860 have five equalizer presets, while the AudioRave has none.

Form Factor

All of these players are quite compact, and any will work well for exercise. The Rio Fuse manages to pack Rio's gold-standard user interface into a minuscule package—it will easily fit in the coin pocket of a pair of jeans. We also liked the irock 860, whose ability to hold a AA battery seems like sleight of hand. The Chiba and Cali have similar designs, but the Chiba is slightly squarer than the rounded Cali. We preferred the Cali because it comes with an armband, which securely attaches it to your body.

Extras

All of these devices do more than just play MP3s. Our favorite extra feature is the built-in FM tuner, which is in all of the players except the Fuse and the AudioRave. The FM tuner on the Rover, however, is built into the included headphones, which means that if you want to use a different pair than the ones that ship with the player, you lose this function. The Rover's FM tuner also requires an additional battery.

Another feature we used extensively was the stopwatch built into all three Rio players. For using an MP3 player while exercising, we found the stopwatch with a lap timer to be a fantastic addition. The belt clip and armband that come with the Cali made it great for exercising, as did the belt clip for the irock 860.

The Mojo 128K and the Rover have built-in voice recorders. Although this seems to be a novelty, we could imagine several scenarios in which it could be useful. Both players have sufficient audio quality for recording and playing back voice memos, but we wouldn't want to record music with either one. Since voice memos are recorded in WAV rather than in MP3 format, they take up more space, but not significantly more. A simple 30-second voice memo takes only about 128K of space in the Rover. The Mojo 128F has two settings: the low-quality setting takes about 120K for 30 seconds; the high-quality uses 330KB. At these rates, even the high quality setting on the Mojo will allow more than three hours of voice recording time—plenty for classes or meetings.

Mini Competition

Although these players' low prices and extra features may be attractive, none matches the value of the iPod mini (★★★★½; May 2004). And while some of the flash players are very good products, the only reason to purchase one is if you can't justify spending $70 to $150 more for an iPod mini. If you can afford the mini, you'll get about 16 times the storage capacity, blazing fast FireWire transfer speeds, perfect iTunes integration, rechargeable batteries, and the excellent iPod interface. The mini's storage space translates to about 99 albums' worth of MP3s (encoded at 128 Kbps), as opposed to about three or six albums on a flash player; its transfer rate is only seconds whereas a flash player's is minutes; its rechargeable battery will save money compared with replaceable batteries; and its intuitive interface means less hassle. The mini is a lot more for just a little more money.

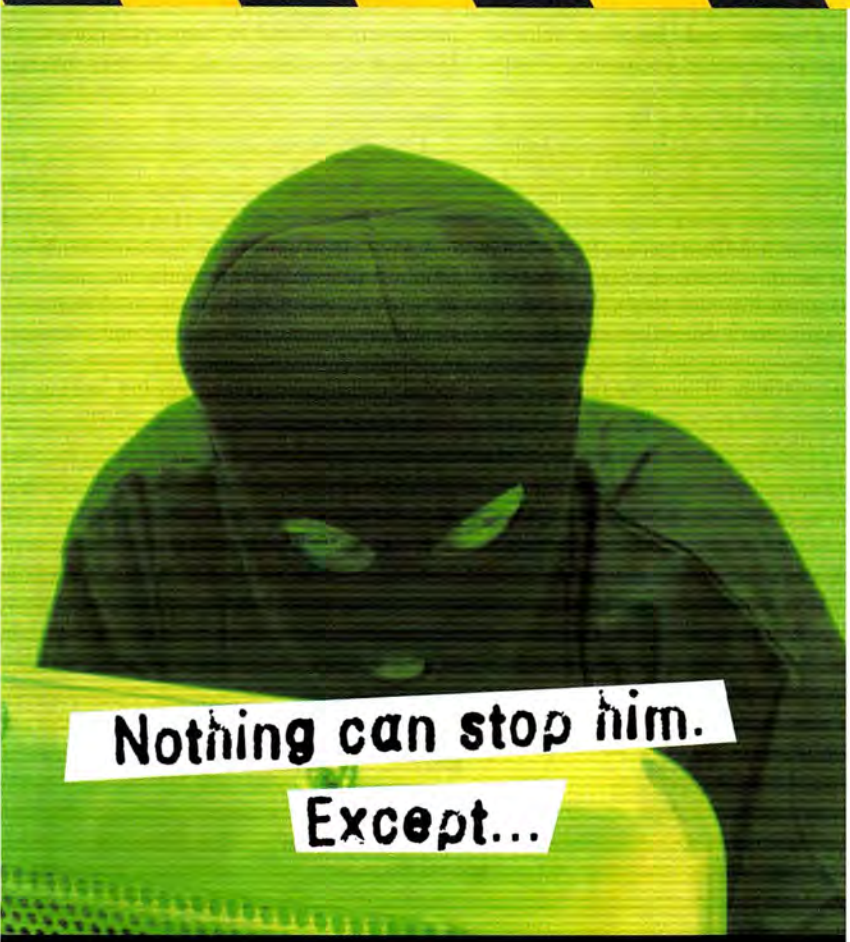
Rio's Fuse

There's a perception that hard-drive–based players such as the iPod are more easily damaged than flash-memory players. For this reason, users with active lifestyles often want a flash-memory–based player for exercising. But the reality is that the better hard-drive–based players spin up so infrequently that this concern is negligible for the vast majority of users.

SmartDisk's Rover

Macworld's Buying Advice

The Rio Cali is our favorite player of the bunch—hands-down. This player is especially appealing for its great functionality and excellent interface design. The Cali works flawlessly with iTunes out of the box and comes with a handy armband, making it the player of choice for über-portability. If you're more concerned about price, the best player for around $100 is the Rio Fuse. And if you prefer a USB thumbdrive that also plays MP3s, go with PoGo Products' AudioRave. □



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Timbuktu Pro 7.0

Panther Update Brings Few New Features

BY ANDREW T. LAURENCE

Your friends, family, or coworkers are asking you for Mac help. They're snowbound and you're sipping a mai tai in Miami Beach, so you can't just swing by their home or office. Worse, they don't know an application menu from a folder, so you're not going to get far with verbal explanations. It's not long before you wish you could get your hands on their keyboard and mouse and see the screen.

Netopia's Timbuktu Pro solves this very problem. Whether over a TCP/IP network or via a direct modem connection, you can assist a befuddled user or administer a remote Mac or PC server as though you were sitting in front of it. A mainstay of Mac tech support since 1988, Timbuktu now faces competition from Apple Remote Desktop and the free, open-source VNC. Timbuktu Pro 7.0 eschews aggressive enhancements, however, and stays the course with Panther compatibility and a handful of new features.

Access Options Aplenty

The Observe (formerly Look) and Control features are Timbuktu's heart and soul. Respectively, they let you see and control a remote computer's screen. You can change the bit depth of the remote display, expand its image to fill your screen, or shrink it to fit within the screen-sharing window. Copying the Clipboard contents between computers is an easy click, as is capturing screen shots or QuickTime movies of the remote display. Timbuktu now observes user permissions during Panther's Fast User Switching, by disconnecting remote sessions when you switch users. Version 7.0 also adds support for mice with scroll wheels and multiple buttons, along with more choices for display resolutions.

The new Profile service is wonderfully simple and a boon to tech support. It runs System Profiler on the remote computer and saves the text report to your local hard drive. It's just that simple.

Timbuktu's Exchange enables file transfers between computers. It now uses the standard Mac OS X shortcuts for the Applications, Home, Desktop, and Favorites folders. Exchange is otherwise unchanged. Disappointingly, it still uses a two-column interface, and it isn't threaded for simultaneous transfers. (A transfer must be complete before you can browse and begin another transfer.)

With the long-standing Invite feature, you can invite another person to connect to your computer. An instructor can use Invite to let students use the Observe service and view a presentation on his or her screen, for example.

Notify (formerly Knock) is an old friend that reports keyboard and mouse activity on a remote machine. If the help-desk staffers don't respond to your Invite, Notify alerts you when they get back from lunch, the water cooler, or wherever they wandered off to.

The Send service is similar to e-mail, letting you send text notes and file attachments to the remote machine. The Chat and Intercom services seem redundant in the world of iChat AV, as they enable text chat and audio conversations, respectively. Since Timbuktu's services all run on the same network port, however, these stalwart features remain useful if a machine is behind a firewall or otherwise unavailable for e-mail or iChat.

Multiple Sessions Timbuktu's Control service directs a remote computer's action, including other Timbuktu sessions. Additional features are available via the Service menu.

Speaking of Security

Fear not—Timbuktu Pro doesn't roll out a welcome mat for miscreants who want to invade your computer. After installation, you must explicitly activate each of the TCP/IP and Dial Direct methods for allowing access to your Mac. By default, the anonymous Guest user can use only the Notify and Send services. As you add Trusted User accounts, you can grant or remove access to each service. Alas, while Timbuktu for Windows can find users in LDAP directories and authenticate them via Active Directory, the Mac version of Timbuktu remains blind to these repositories. We'd like to see Mac OS X's Directory Services adopted as an available source for Timbuktu accounts and privileges.

The Only Accept Incoming Connections When Application Is Open preference should not be overlooked. When you select this option, the logged-in Mac OS X user owns the Timbuktu Host process (which monitors incoming connections) and inherits that user's permissions. If you don't select the preference, the Unix root account owns Timbuktu Host; remote connections are possible in the login window, but beware their unfettered access to the file system.

You can easily change Timbuktu's TCP contact port for coexistence with corporate firewalls. This feature makes it easy to configure a Timbuktu computer for a network's DMZ, with an obscure port open to the outside world, while retaining normal contact with the internal network. Other options include proxy server support and advertising a public IP number in a Network Address Translation (NAT) environment. Timbuktu doesn't use proper encryption but it does dynamically scramble keystrokes on a per-session basis.

Macworld's Buying Advice

With relatively few new features, this release feels more like a 6.5 than a 7.0. Profile is a welcome addition, but this version banks on Panther compatibility for its appeal. If you don't need Panther compatibility, you probably don't need the upgrade.

Timbuktu has always been remarkably good at what it does, and it's a model of AppleScript support, but it should further embrace Mac OS X's capabilities. That said, Timbuktu remains the indispensable, cross-platform support tool it has always been. □

RATING: ♦♦♦♦

PROS: Panther compatibility; stable and reliable; cross-platform support; easy integration into secure networks.

CONS: Few new features; Exchange interface is outdated; no support for enterprise directories.

PRICE: single copy, $100; two-pack, $190; volume licensing available

OS COMPATIBILITY: Mac OS X

COMPANY: Netopia, 800/485-5741, www.netopia.com

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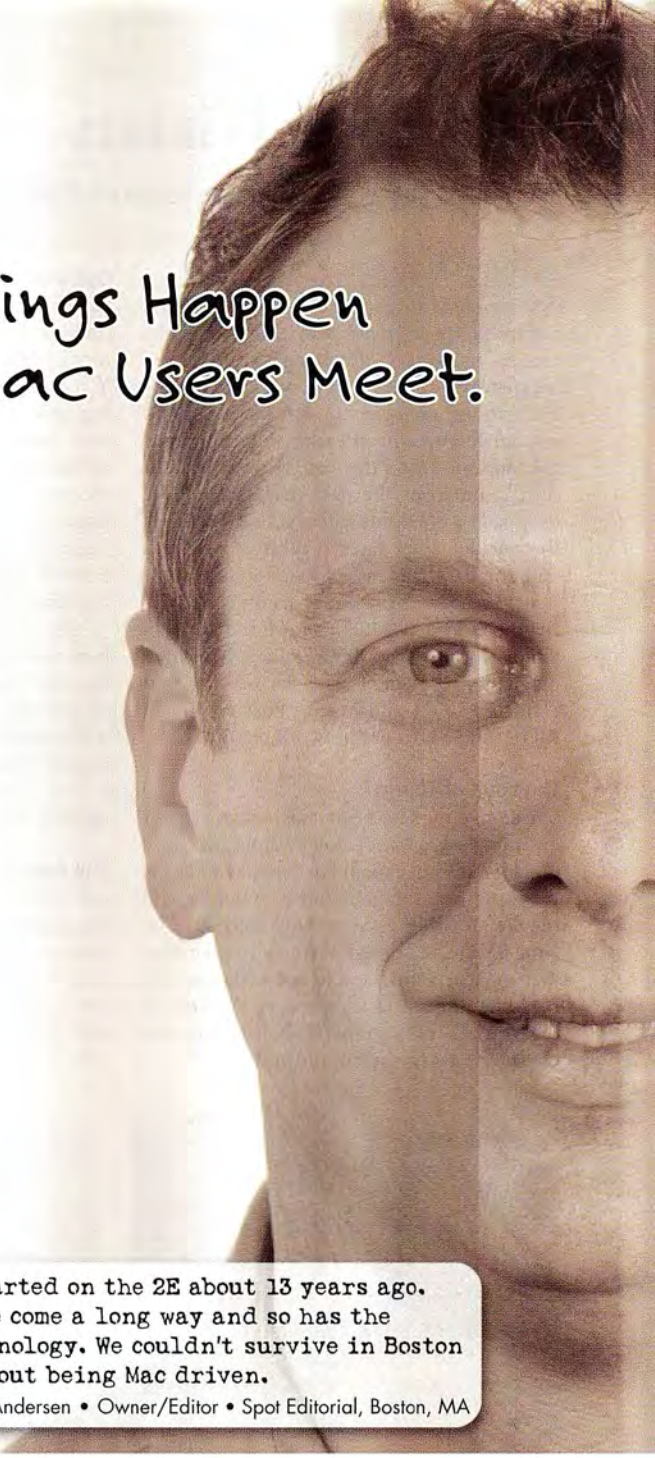

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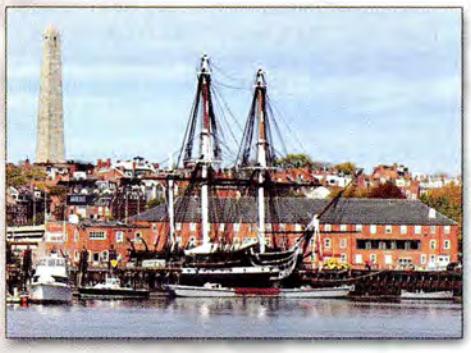

I started on the 2E about 13 years ago. We've come a long way and so has the technology. We couldn't survive in Boston without being Mac driven.
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Color Laser Printers

Six Models in the $1,000 Range Feature Enhanced Speed and Print Quality

BY JAMES GALBRAITH

Adding color to your work documents has always come at a price in terms of time, money, or both. Color ink-jet printers are inexpensive and great for printing photos from your digital camera, but the paper and ink can cost an arm and a leg, the print times are often slow, and the text is not up to laser clarity. But over the past year, prices have dropped to the point where it's now feasible to consider color laser printing for homes and small offices. We looked at six color laser printers priced at around $1,000: Brother's HL-2700CN, Hewlett-Packard's Color LaserJet 3500n, Konica Minolta's magicolor 2350en, Lexmark's C510n, Oki Data's C5300N, and Xerox's Phaser 8400/B. All but the Xerox are network ready.

The Look of Things

Since none of these printers is designed to sit on your desktop, they don't require dazzling good looks. They're all fairly loud and large, weighing on average about 65 pounds, and they're all either gray or putty colored. The Konica's unusual design features an open tray that you load from the side; accessing this tray could be difficult in tight spaces. Also, all of the Konica's connections (USB, Ethernet, and power) are on the side of the unit.

Options, Options

All of these printers have a variety of extra options. You can expand all of them to handle more paper by using a different paper tray. You can upgrade all but the HP with duplexing units that allow automatic printing on both sides of the page. And you can upgrade all but the HP with more memory. The more memory a printer has, the faster it can handle large and numerous print jobs. The Konica, Lexmark, and Xerox printers ship with 128MB of RAM, while the Brother, HP, and Oki Data printers ship with 64MB.

The only printer that had memory problems was the Oki Data. A 22MB Photoshop file would not print with the standard amount of memory until it was downsized to 21.3MB. Although the larger file would spool and the printer would indicate that it was processing a job, it never produced a page. A memory upgrade would have solved the problem.

The Real Cost

All of the printers except for the HP ship with low-capacity starter cartridges that require that you buy replacement toner sooner than you would with standard cartridges. Konica and Lexmark sell two replacement cartridges, with different capacities. The more expensive, higher-capacity ones are a better value. Taking into account the cost of the toner and inks alone (not the more durable components such as the fuser and the waste-toner bottle), the printers with the lowest ink cost per page (about 9 cents) were the Brother, Lexmark, and Oki Data. The most expensive was the HP, at a cost of 12 cents per page. These numbers were supplied by the vendors.

All the Pretty Colors

We printed several different kinds of files and assembled a panel of experts to evaluate each printer's ability to reproduce accurate color.

Even if you're in the market for a color laser printer, you'll probably have to print plenty of black-and-white text documents. We printed a simple Word document with a variety of text sizes ranging from 9 to 14 points at best resolution, and had our panel rate the output. Although some of the text appeared a little lighter or heavier, all the printers received a Very Good score, and our jury was unable to pick a clear winner.

Next we challenged the printers' ability to produce fine curved lines and gradients. Only the Lexmark scored a Very Good rating for both tasks. The Brother had some obvious bends within the curved lines and dropouts in the color gradients. The Konica and the HP produced smooth curved lines, but the smaller point sizes had some noticeable breaks.

Color Laser Printers We reviewed (from left to right) Brother's HL-2700CN, Hewlett-Packard's Color LaserJet 3500n, Konica Minolta's magicolor 2350en, Lexmark's C510n, Oki Data's C5300N, and Xerox's Phaser 8400/B.

PHOTOGRAPHS BY PETER BELANGER

Color Laser Printers Compared

COMPANY	PRODUCT	MOUSE RATING	PRICE	OS COMPATIBILITY[A]	CONTACT	RAM (INSTALLED/MAXIMUM)	DPI	PROS	CONS
Brother	HL-2700CN	♦♦♦	$799	9 X	800/276-7746, www.brother.com	64MB/576MB	600 × 600	Least expensive; Rendezvous capable; ships with toner cartridges installed.	Poor image quality; photos have too-red cast; kinks in curved lines.
Hewlett-Packard	Color LaserJet 3500n	♦♦♦	$1,000	9 X	800/752-0900, www.hp.com	64MB/64MB	600 × 600	Rendezvous capable; fast Photoshop print speed.	Memory not expandable; networking requires power brick; highest ink cost per page.
Konica Minolta	magicolor 2350en	♦♦♦½	$1,099	9 X	201/825-4000, www.minolta-qms.com	128MB/384MB	600 × 600	Generous RAM configuration; ships with toner cartridges installed.	Quirky design; high ink cost per page; not Rendezvous capable.
Lexmark	C510n ★	♦♦♦♦½	$1,019	X	800/539-6275, www.lexmark.com	128MB/320MB	600 × 600	Very good image quality; low cost per page; generous RAM configuration; ships with toner cartridges installed.	Not Rendezvous capable.
Oki Data	C5300N	♦♦♦♦	$1,154	9 X	800/654-3282, www.okidata.com	64MB/320MB	600 × 1,200	Good print quality; low cost per page.	Required more RAM to test our 22MB file; not Rendezvous capable.
Xerox	Phaser 8400/B	♦♦♦½	$999	9 X	800/275-9376, www.xerox.com	128MB/512MB	600 × 600	Fastest time to print a single page; generous RAM configuration with Panther.	No Ethernet; slow to warm up; driver incompatibilities.

★ = Editors' Choice. [A] OS 9 support is part of the manufacturers' specifications, but we did not test the printers in OS 9.

Macworld LAB TEST

	TIMED RESULTS			JURIED RESULTS		
	TEN-PAGE BLACK-AND-WHITE WORD DOCUMENT	ONE-PAGE BLACK-AND-WHITE WORD DOCUMENT	22MB PHOTOSHOP CS IMAGE	FINE LINES	COLOR FIDELITY	COLOR PHOTO DETAIL
Brother HL-2700CN	0:36	0:16	2:12	Flawed	Unacceptable	Flawed
HP Color LaserJet 3500n	1:15	0:28	0:52	Flawed	Flawed	Flawed
Konica Minolta magicolor 2350en	0:51	0:21	3:36	Good	Flawed	Good
Lexmark C510n	0:33	0:15	2:18	Very Good	Very Good	Very Good
Oki Data C5300N	0:57	0:28	N/A *	Good	Very Good	Very Good
Xerox Phaser 8400/B	1:17	0:08	1:42	Very Good	Good	Flawed
	<Better	<Better	<Better			

BEST RESULTS IN **BOLD**. * N/A = Not applicable. The Oki Data couldn't print this file; it printed a 21.3MB file in 1:54.

For the full results of our benchmark tests, see www.macworld.com/2004/06/reviews/colorlaserprinters/. TIMED RESULTS: All scores are in minutes:seconds. We tested the printers on a dual-1GHz Power Mac G4 system with Mac OS X 10.3.2 and 512MB of RAM installed. We set displays to 1,024-by-768-pixel resolution and 24-bit color. We recorded the time it took each printer to print a one-page and a ten-page Microsoft Word document at Good quality. We then timed the printing of a 22MB Adobe Photoshop file at Best quality. JURIED RESULTS: A panel of experts looked at a variety of prints and rated each as Excellent, Very Good, Good, Flawed, or Unacceptable.—MACWORLD LAB TESTING BY JAMES GALBRAITH

We used our standard Photoshop test image, a picnic scene with many different elements, to judge the printers' ability to produce accurate colors and photographic detail. When comparing the output to a color-corrected print of the file, our jury rated both the Lexmark and the Oki Data as Very Good. The Brother and, to a lesser extent, the Konica printed too red, and the HP's reds looked almost pink. Concentrating on some shadow detail in a bowl of peppercorns and on handwritten text on a recipe card, our jury again thought the Lexmark and Oki Data devices fared well, rating them as Very Good.

Next we printed a gray-scale photograph on each printer. All but the HP showed some kind of color cast. Unfortunately, the HP print was so dark that it lost much of the photo's shadow detail. The Brother print had a light green cast and some strange colors in some of the transitional grays.

Speed Rules

Although digital photography may not be a color laser's strong suit, speed is. If you're printing large or multiple jobs, the speed of these color lasers is nearly as important as their print quality. To see just how fast they are, we printed several different types of files and recorded the time it took each printer to complete each job. If you mostly send one- or two-page jobs to your printer, you'll really appreciate the following statistics: sending a one-page black-and-white Word document to the printer took 8 seconds for the Xerox and 28 seconds for the HP and the Oki Data; the rest fell somewhere in between.

To test the speed on longer jobs, we timed the printing of a ten-page black-and-white Word document. Interestingly, the Xerox, first to print a single page, came in last here, at 1 minute and 17 seconds. The Lexmark, which took nearly twice as long as the Xerox to print the first page, won this round in 33 seconds, followed closely by the Brother at 36 seconds. Our 22MB Photoshop CS document, printed at each printer's best-quality setting, proved to be a killer for the Oki Data. Unlike ink-jet printers, which let the computer do most of the heavy lifting in preparing data to print, a color laser printer relies on the onboard processor and memory for much of that work. The Oki Data, with 64MB of RAM, was just a little underconfigured for this test. Downsizing the image to 21.3MB let this printer complete the test in a respectable 1 minute and 54 seconds. The HP shone in this test, printing the file in only 52 seconds, more than four times faster than the last-place Konica, at 3 minutes and 36 seconds.

Setup and Networking

All the printers were easy to set up. The Lexmark, the Brother, and the Konica even shipped with the toner cartridges already installed. The rest shipped their toners or ink cartridges in separate bags. Only the Oki Data printer's installation caused me to get toner on my hands.

All of the network printers support DHCP, for automatically assigning IP addresses. But the Brother and the HP are the only printers that support Rendezvous, Apple's zero-configuration networking feature. This lets users view the printer status page in Safari (from a menu-bar pull-down menu) without needing to know the printer's IP address.

The HP is the only network-ready printer that comes with an external print server, which was a breeze to configure. The server plugs into the printer's USB port; unfortunately, it requires an external power brick to operate. The Xerox is the only printer that ships without network capabilities; it requires a USB connection. (For $300 more, you can get a network model.) Xerox says a change in the way Panther handles USB printers caused a driver problem we encountered: the documents would print and they looked fine, but in the Print Center window the Status column wouldn't clear the job after completion, and the print icon in the Dock also indicated that the job was still printing. Xerox gave us a new driver that worked just fine; it should be available from the company's Web site by the time you read this. And though the Xerox isn't technically a network printer, we were easily able to use Panther's print-sharing utility (via the sharing icon in System Preferences) to print to it from another Mac on the network.

Macworld's Buying Advice

Any of these printers would be an acceptable choice for printing heavy text and occasional color graphics. But we recommend the Lexmark C510n for its generous RAM configuration, expansion options, great print quality, and rapid speed. □

UNDER THE HOOD

The printers in this roundup use several different technologies to produce color laser output. Most are standard four-color CMYK (cyan, magenta, yellow, and black) laser-toner printers.

Here's how this technology works: A laser, directed by moving mirrors, draws an electrostatic image on an imaging drum. The first color attaches itself to the charged areas of the drum, which applies toner to the sheet. The sheet then goes to the fuser, which melts the toner and fuses it to the paper. The process repeats for the remaining three colors in the sequence.

The Oki Data uses the same basic system, but instead of a laser it uses a stationary array of digital LEDs to charge the drum. Oki Data says the benefit of LED technology is that it's solid-state, so the print head doesn't have any moving parts that can get out of alignment.

The Xerox doesn't use toner at all, but solid ink, similar to a crayon. You drop the waxy ink sticks into their keyed slots. A heater melts them down and uses ink-jet technology to apply the melted ink to the page. Solid-ink technology has its benefits: It uses fewer costly consumables such as cartridges or drums, and it doesn't have any moving parts to break down. Also, you don't have to worry about disposing of or recycling empty cartridges. On the downside, the printer can take longer to warm up from an off state; it emits a smell (like a candle burning); and, most important, the ink isn't fused to the paper, but rather sits on top. Although this allows the Xerox to print on a wide variety of media, you can scrape off the ink with a fingernail or a pen. If you expect your prints to be manhandled, you may be better off with a toner-based printer.

Choose 23 at www.macworld.com/getinfo

Dual-1.8GHz Power Mac G5

The Middle Desktop Configuration Is a Surprisingly Good Value

BY HENRY NORR

When Apple brings out a new Mac model, it typically offers three standard configurations: "good," "better," and "best." In the case of the first Power Mac G5s, the "best" model—the dual-2GHz configuration—was clearly the standout: the performance boost that the second G5 chip provided easily justified the price premium, at least for the professionals the Power Mac line is designed for (see *Reviews*, November 2003).

It didn't take buyers long to figure that out. The high-end configuration sold quickly, while sales of its single-CPU siblings lagged. Less than three months later, Apple responded with a $200 price cut on the "good" configuration (with one 1.6GHz G5 chip) and the addition of a second 1.8GHz processor to the "better" model.

Of course, that second CPU isn't free: at $2,499, the dual-1.8GHz configuration costs $100 more than its single-chip predecessor. But after putting the new model through its paces, we're sold: in terms of value, the dual-1.8GHz G5 is now the pick of the Power Mac litter.

Aside from the second CPU and the price change, the new 1.8GHz configuration is identical to the old one: it comes with 512MB of DDR (double data rate) memory (8GB maximum); a 160GB, 7,200-rpm serial ATA hard drive; a SuperDrive CD and DVD burner; an Nvidia GeForce FX 5200 Ultra video card in an 8× AGP slot; three free PCI-X slots; Gigabit Ethernet, FireWire 400 and 800, and USB 2.0 ports; and internal slots for optional AirPort Extreme and Bluetooth wireless-connectivity cards.

Compared with the dual-2GHz model, the only difference (aside from the obvious one in processor clock speed and a corresponding 10 percent difference in the speed of the bus that connects the CPU to memory) is the video card. The top-of-the-line configuration comes with ATI's Radeon 9600 Pro instead of the Nvidia card that's standard in the other two Power Macs.

For hard-core gamers, that difference may matter: in our Unreal Tournament frame-rate test, the dual-1.8GHz configuration delivered significantly fewer frames per second than the dual-2GHz system; in fact, the dual-1.8GHz model barely edged out the single-processor 1.6GHz model in this test (see the benchmark chart for more test results).

But in the rest of our performance tests, the dual-1.8GHz configuration came in just a shade behind the blazing dual-2GHz model. In Macworld Lab's Speedmark 3.3 tests, the new model racked up a score of 199, only a few points below the dual-2GHz model (204) and way above the single-processor 1.6GHz and 1.8GHz systems (154 and 168, respectively).

Macworld's Buying Advice

The dual-1.8GHz Power Mac G5 delivers 97.5 percent of the performance of the top-of-the-line Power Mac for less than 85 percent of its $2,999 price. Any way you slice it, that's a bargain. □

RATING: ★★★★½

PROS: Excellent performance; quiet; huge memory capacity; packed with cutting-edge technologies; great value.

CONS: Large case size; limited space for internal storage.

PRICE: $2,499

OS COMPATIBILITY: Mac OS X

COMPANY: Apple Computer, 800/692-7753, www.apple.com

Macworld LAB TEST	Speedmark 3.3 OVERALL SCORE	Adobe Photoshop CS SUITE	Unreal Tournament AVERAGE FRAME RATE
Apple Power Mac G5/dual-1.8GHz	**199**	**1:24**	**40.1**
Apple Power Mac G5/dual-2GHz	***204***	***1:18***	***56.6***
Apple Power Mac G5/1.8GHz	***168***	***1:44***	***40.1***
Apple Power Mac G5/1.6GHz	***154***	***1:56***	***39.3***
	>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/g5dual18ghz/. Speedmark 3.3 scores are relative to those of a 1GHz eMac (G4), which is assigned a score of 100. Photoshop scores are in minutes:seconds. All systems were running Mac OS X 10.3.2 with 512MB of RAM. The Photoshop Suite test is a set of 14 scripted tasks using a 50MB file. Photoshop's memory was set to 75 percent and History was set to Minimum. We used Unreal Tournament's Antalus Botmatch average frames-per-second score; we tested at a resolution of 1,024 by 768 pixels. For more information on Speedmark 3.3, visit www.macworld.com/speedmark.—MACWORLD LAB TESTING BY KRISTINA DE NIKE AND JAMES GALBRAITH

THE PORTABLE, POWERFUL NEW i80 PRINTER.

Introducing the printer that goes where you go. The i80 delivers borderless, photo-realistic color prints in sizes up to 8.5"x11". Better yet, you can print without your PC by connecting your Bubble Jet Direct or PictBridge compatible digital camera or camcorder* directly to the i80. And, with the optional portable battery kit, you can print whether you're at home, at work, or somewhere in between. So plug in today. True-to-life color prints could do wonders for your commute. To learn more, visit www.usa.canon.com/consumer, or call us at 1-800-OK-CANON.

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Retrospect 6.0

Powerful Backup Program Adds Panther Compatibility and Enterprise Features

BY ADAM C. ENGST

Everyone has a mission-critical application—that one program they can't work without (Adobe Photoshop, Microsoft Excel, or Apple's Final Cut Pro, for example). But backup programs are mission critical for all users, no matter how they earn a living. Dantz Development's Retrospect backup software, the most popular of this genre, performs full and incremental backups of local and networked Macs and saves data to a wide variety of storage devices.

Many people waited to upgrade to Mac OS X until Retrospect 5.0 (♦♦♦♦; July 2002) was available for the platform. And many people have also held off on upgrading their servers to Mac OS X 10.3 (Panther), due to its incompatibilities with Retrospect 5.1. Retrospect 6.0 addresses those incompatibilities but otherwise offers only a few new features, which are aimed at people using Retrospect to back up very large amounts of data.

New Features

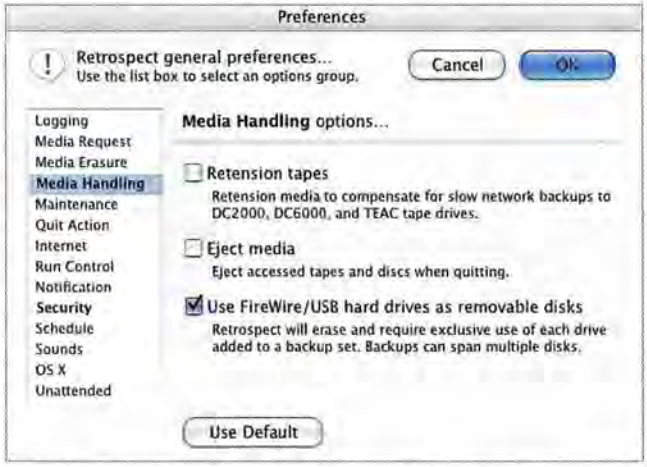
The main change in Retrospect that's likely to get non-enterprise users to upgrade is Panther compatibility. Panther introduced FileVault and Fast User Switching (among other things), and Panther Server introduced case-sensitive HFS+ (in which documents named thisfile and ThisFile can exist in the same folder). These changes caused trouble in Retrospect 5.1, forcing careful users to either work around the problems or hold off on upgrading the Macs running Retrospect to Panther, though client Macs could be upgraded individually without ill effects.

Panther Issues

In our testing, Retrospect 6.0 successfully worked around such obvious issues with Panther by adding an option to ignore FileVault-sparse images (a disk image of your entire Home folder that, when any small change occurs, must be backed up in its entirety, adding many gigabytes to your backup set every day) and refusing to allow multiple users on the same Mac to launch Retrospect simultaneously. These changes make it possible to upgrade any Mac running Retrospect to Panther.

Retrospect's most compelling new feature is its improved backup to hard drives, which are now the most cost-effective backup media for small to medium-size networks, thanks to low prices and ever-increasing capacities. Retrospect 6.0 significantly improves backup performance to external FireWire drives.

Another major change, however, is support for backup sets that span multiple hard drives as though they were tapes or optical discs. This allows a hard-drive–based backup set to grow indefinitely, something that wasn't possible before. In Retrospect 5.1, a backup set was limited to the size of the drive, which forced manual intervention in the form of erasing the backup disk and starting over, or starting a whole new backup set when a drive filled up. This change makes hot-swappable FireWire drive bays such as Granite Digital's FireVue (♦♦♦♦; *Reviews in Brief*, January 2004) and WiebeTech's BayDock (866/744-8722, www.wiebetech.com) particularly attractive backup devices, since you can now back up to a series of inexpensive hard-drive mechanisms installed in hot-swappable trays.



Multiple Drive Backup Sets One of Retrospect 6.0's best new features treats external FireWire and USB hard drives as removable media, so backup sets can grow indefinitely, rather than being limited to the size of the drive.

Enterprise Benefits

Enterprise users will appreciate Retrospect's other new features, though they may be left wanting more. The program now supports the Xserve RAID, as well as SCSI and Fibre Channel tape-drive libraries, with features such as bar-code inventory (which allows the program to quickly locate and identify tapes) and more than 128 tape slots. Users running OS X 10.3.3 with a tape autoloader or Fibre Channel library must download Retrospect's free upgrade (to version 6.0.193), which enables these drives to work again. A change in 10.3.3 had rendered such drives inoperable with Retrospect 6.0. In addition, Retrospect's backup sets can grow beyond the previous limit of 1 terabyte, a necessity for organizations with massive quantities of data generated by video, genomics, or other data-intensive fields. For people who have bumped up against Retrospect 5.1's backup-set size limits or been forced to jury-rig a backup strategy for lack of appropriate device support, Retrospect 6.0 is worth considering.

Not Looking Back

Although Retrospect 6.0 can read and restore backup sets created by previous versions, the addition of Unicode and terabyte support forced a change in the backup-set format such that users must reset existing backup sets or create new ones, an annoying requirement for companies with complex backup procedures. The Retrospect 6.0.193 update enables new media backups to backup sets created by previous versions. This is a welcome change that lets companies add to existing backup sets without erasing old media, an act that could be troubling for legal or auditing reasons.

All Must Upgrade

The lack of backward compatibility extends to Retrospect clients as well; all copies of Retrospect Client on networked OS X Macs must be upgraded to version 6.0. Although Retrospect 6.0 can update all connected clients and is smart about updating only those that need it, ensuring that every Mac on a large network is updated is onerous. It would help if Retrospect could use OS X's Wake For Ethernet Network Administrator Access feature to wake sleeping Macs for backup or client update.

Administrators of networks large and small must still initiate file restores for users who have lost data, since the Retrospect Client software running on each networked Mac doesn't let individual users restore their own files. Such a feature would potentially reduce the load on network administrators. Lastly, unlike the Windows version of Retrospect, which can run multiple simultaneous executions, Retrospect for the Mac is still limited to a single execution at a time. Multiple simultaneous executions improve overall backup speed and administrator productivity, in

continues on page 45

RATING: ♦♦♦½

PROS: Panther compatibility; faster hard-drive–based backup; hard-drive backups now span multiple drives; better large-media support.

CONS: New features appeal mostly to enterprise users; may need to reset or create new backup sets; no backward compatibility for networked clients; can't run multiple simultaneous executions.

PRICE: Retrospect Desktop, $129 (upgrade, $60); Retrospect Workgroup, $499 (upgrade, $199); Retrospect Server, $799 (upgrade, $349)

OS COMPATIBILITY: Mac OS X

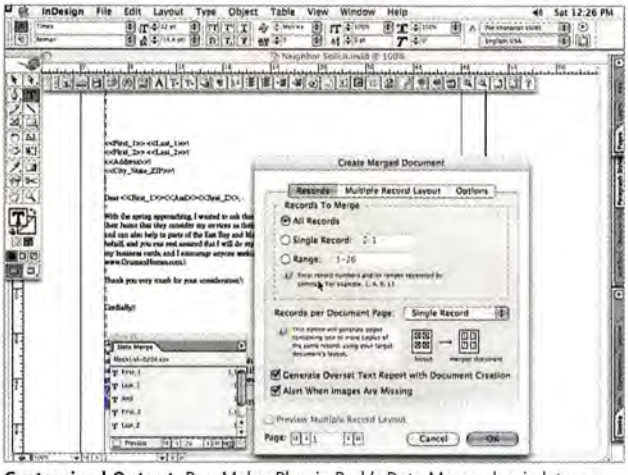
COMPANY: Dantz Development, 925/948-9000, www.dantz.com

Adobe PageMaker Plug-in Pack

Basic Add-ons to InDesign CS Enhance Its Functionality for Diverse Users

BY GALEN GRUMAN

InDesign long ago overtook PageMaker as Adobe's publishing flagship, but the company has let the OS 9–only PageMaker 7 languish on life support. Even with the new InDesign CS, Adobe is not quite ready to let go. PageMaker lives on, sort of, via the new PageMaker Plug-in Pack that adds to InDesign CS eight PageMaker modules, three of which are from version 7. Though it's marketed as a transition aid for PageMaker users, the pack isn't a bridge from PageMaker; rather, it's a collection of PageMaker tools that InDesign should have featured in the first place, along with some InDesign interface enhancements.



Customized Output PageMaker Plug-in Pack's Data Merge plug-in lets you create form letters, catalogs, and other simple semicustomized documents.

Data Merge Improvements

The most useful plug-in of the pack is Data Merge, which lets you create documents featuring variable text, form letters, catalogs, and business cards. Just set up a comma-delimited or tab-delimited text file with your data (text and/or links to images), and import the data into InDesign. This process is similar to using Microsoft Word's Mail Merge feature, except that Data Merge has no way to set up conditions for variable-text handling. That means you can't insert or remove words conditionally (say, to create a form letter addressed to both individuals and couples).

Adobe has fixed a bug in the PageMaker 7 version of this plug-in so that it properly lays out merge items destined to be placed several times on a page, such as for printing labels.

Plug-in Pack's bullet and numbering features are welcome, since InDesign has no simple way to produce these things; they work as they do in Word, renumbering automatically as needed. As with Word, you can't choose the bullet type, and adjusting the spacing means modifying the paragraph. I'd prefer a more sophisticated implementation.

Plug-in Pack also includes a lowly apprentice production's InBooklet SE tool to create folded brochures. The plug-in arranges the pages in the correct order for printing—double-sided and ready for folding. It's easy and can even adjust each page's layout automatically to allow for *creep*—a phenomenon that occurs when material on the outside pages creeps into the fold due to the thickness of the folded pages. In addition, Plug-in Pack comes with templates and a template viewer.

Plug-in Pack also adds two interface features. One is a handy toolbar taken from the Windows version of PageMaker 7 that gives you one-click access to common functions such as opening a file or inserting pages. This adds yet another palette to InDesign CS's cluttered interface, but it's worth it. The other is the Position tool; it selects an object's container or content contextually, instead of forcing you to pick the correct tool, as you would with InDesign. But you'll still need to use InDesign's Selection and Direct Selection tools since the Position tool doesn't completely replace them.

Finally, Plug-in Pack lets you import PageMaker 6.0 files, in addition to the PageMaker 6.5 and 7 formats that the standard edition of InDesign supports.

Macworld's Buying Advice

PageMaker Plug-in Pack will prove useful to many InDesign users. It adds long-established PageMaker automated-bullet and -numbering tools, as well as options that simplify access to InDesign's various functions. It's a good deal for $49. □

RATING: ♦♦♦

PROS: Handy utilities for automated bullets and numbering; booklet support; basic data merge; simplified access to InDesign functions.

CONS: Features are too basic and lack sophistication; manual tweaking is needed, as some plug-in modules will need adjustments with the selection tools.

PRICE: $49; InDesign CS PageMaker Edition upgrade (includes InDesign CS and the Plug-in Pack), $349

OS COMPATIBILITY: Mac OS X

COMPANY: Adobe Systems, 866/692-3623, www.adobe.com

Digital-Video Converters

Analog-to-Digital Hardware Bridges the Video Generation Gap

BY ROBERT ELLIS

You can't remember the last time you bought or rented a video, but you still have shelves full of your well-worn favorites. And then there's that shopping bag filled with old Hi8 tapes of birthday parties and vacations gathering dust in the closet. What can you do to preserve your video library and bring all of this analog stuff into the digital age?

An analog-to-DV converter allows you to capture video from your VCR or analog camcorder and convert it to digital video. Once you've captured it, you can edit it and burn it to a DVD (for more on this process, see "VHS to DVD," page 68). Or you can export it back to analog format (to a brand-new videotape, for example).

We tested ADS Technologies' Pyro A/V Link, Datavideo's DAC-100, and Miglia Technology's Director's Cut Take 2 bidirectional (analog to digital and back to analog) converters. We also looked at the Canopus ADVC55, which converts in only one direction, from analog to digital. (We've already reviewed the Canopus ADVC-100 [4½; September 2002], another excellent bidirectional converter.)

While the ADVC55 doesn't specifically claim OS 9 compatibility, we successfully captured and exported video with all the units in both OS 9 and OS X. At a reasonable price of $199 and with excellent picture quality, the DAC-100 is the best buy of the bunch for most users.

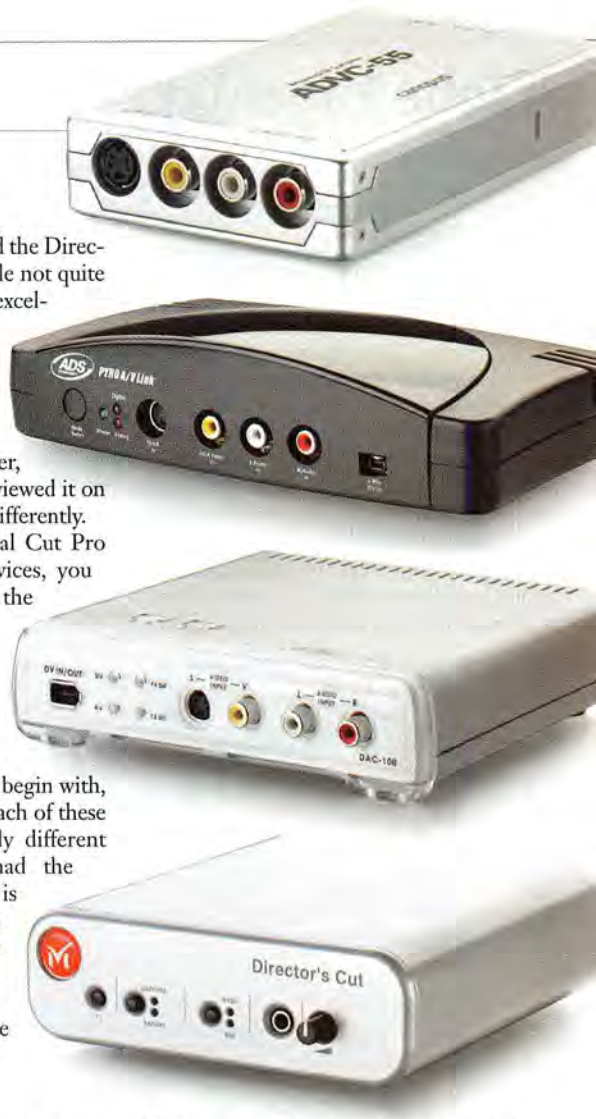
Sight and Sound

Any of these boxes will do a competent job of capturing analog video and converting it to DV in NTSC (the American video standard) or PAL (the European standard), but there are noticeable differences in image quality between them. Some of them captured highlights and shadows more faithfully than others. We liked the ADVC55's picture quality the best: the blacks were deep and the colors were saturated. The DAC-100 and the Director's Cut captured video that, while not quite as rich as the ADVC55's, was also excellent. The Pyro A/V Link's captured images were slightly brighter, but colors and blacks looked washed-out. This was barely noticeable when we viewed our footage on a computer, but it really showed up when we viewed it on a TV, because TVs handle color differently.

Since Apple's iMovie and Final Cut Pro recognize converters as DV devices, you can't make any adjustments to the audio during capture unless you run the video through a mixer. If you're capturing your favorite Hollywood flick, this won't be a problem. But if you're working with an old home movie in which the audio may have been quiet to begin with, you may have some challenges. Each of these units captures audio at a slightly different level. The Pyro A/V Link had the strongest audio. The ADVC55 is the only unit that allows you to adjust the volume (you can toggle a DIP switch on the unit to boost the audio 15 dB), but using it may result in some distortion unless the source audio is very weak.

Plug and Capture

All of these units are extremely easy to use. There are no drivers to install; you simply connect your camera or VCR to the converter's inputs. If you're using Final Cut Pro, you can connect a TV or a preview monitor to the outputs (on the Pyro A/V Link and the DAC-100, you may have to swap cables if you use those same outputs to export; only the Director's Cut has two sets of outputs so you can export and use your preview monitor simultaneously). Then you connect the converter to your Mac's FireWire port.



DV Converters We reviewed (top to bottom) the Canopus ADVC55, the ADS Technologies Pyro A/V Link, the Datavideo DAC-100, and the Miglia Technology Director's Cut Take 2.

PHOTOGRAPHS BY PETER BELANGER

We had no trouble getting right to work with the ADVC55, the DAC-100, and the Director's Cut. We did have some problems with the Pyro A/V Link. At first we couldn't get our preview monitor to display in color during capture; then we couldn't view captured video on our preview monitor. Finally,

Digital-Video Converters Compared

COMPANY	PRODUCT	MOUSE RATING	PRICE	OS COMPATIBILITY	CONTACT	PROS	CONS
ADS Technologies	Pyro A/V Link	3½	$199	9X	800/888-5244, www.adstech.com	Strong audio import; component video in.	Colors and blacks looked washed-out; firmware glitch prevents previewing in color; reliability problems; external power supply needed; tech support wasn't helpful.
Canopus	ADVC55	4½	$229	9X	888/899-3348, www.canopus.com	Best video quality; audio-boost adjustments; FireWire powered; compact metal case.	Pricey for a one-way converter; no A/V (composite video and audio) or S-Video cables.
Datavideo	DAC-100	4½	$199	9X	562/696-2324, www.datavideo-tek.com	Excellent video quality; can be used as a DV repeater (FireWire pass-through); reasonable price.	External power supply needed.
Miglia Technology	Director's Cut Take 2	4½	$299	9X	info@miglia.com, www.miglia.com	Excellent video quality; FireWire powered; two sets of outputs; all plugs in back; rugged metal case; K & Lock support; headphone jack.	No U.S. telephone tech support.

we managed to play video from our preview monitor by manually flipping the A/V Link's Mode switch, which toggles between digital and analog. ADS says that our color problem is a known firmware issue that affects only certain equipment (such as older VCRs), and that it should be fixed in the next revision, which should be shipping by the time you read this.

Ins and Outs

All of these boxes come with FireWire cables, and all but the ADVC55 come with A/V (composite video and audio) and S-Video cables. Only the DAC-100 has two six-pin FireWire ports so you can use it as a DV repeater (a small piece of hardware that lets you join two FireWire cables). The A/V Link has a six-pin and a four-pin FireWire port, as well as component video in and locked audio (but you won't have a problem keeping audio and video in sync with any of these units). The Director's Cut has all of its ports in the rear, which may help keep your cables from sprawling all over your desk (the others have front and back ports). It also has a headphone jack, so you can monitor the source during capture, and Kensington K & Lock support, which lets you connect an antitheft security cable—a nice feature if you're looking for a converter to use in an open office or classroom.

If you have limited desktop space, you'll appreciate the ADVC55. This unit is the most compact of all the ones we tested—it's not much bigger than an iPod. Another place where space may be an issue is in your power strip. If you're a hard-core DV enthusiast, you've already got your computer, monitor, camera, extra hard drive, preview monitor, and speakers plugged in. The DAC-100 and the A/V Link both require an external power supply, and the plugs are bulky. Both the ADVC55 and the Director's Cut draw power from the FireWire cable. You'll need to plug them directly into the computer (as opposed to using a hub), though, if you want them to be reliable. If no FireWire port is available, you'll need an external power adapter for these converters, which will be an added expense.

The cases of the ADVC55 and the Director's Cut are metal, whereas those of the DAC-100 and the A/V Link are plastic. If you plan to use these in the field, the ADVC55's compactness and the Director's Cut's relative ruggedness (as well as their ability to draw power from a FireWire port) are pluses.

Macworld's Buying Advice

In spite of the Pyro A/V Link's stronger audio capture and component video in, we prefer the DAC-100. Due to its excellent video quality and reasonable price, most users will find the DAC-100 to be the best overall value. We like the ADVC55 for its picture quality, but because it can't export video back to analog, its price is hard to justify. □

Retrospect 6.0

continued from page 42

part, because one slow client can't make every other client computer wait to be backed up.

Macworld's Buying Advice

On the surface, Retrospect 6.0 is a fairly minor upgrade offering compatibility changes and a few new features. Users who want to run Retrospect on their desktop Macs with Panther should definitely upgrade to version 6.0. But for people who see no reason to upgrade their servers from Jaguar, the other changes in Retrospect 6.0 may not warrant paying for an upgrade right now. But large companies with significant backup needs, and people looking to move up to backup software with network and large media support, should upgrade to version 6.0. □

PICK YOUR MODEL

Although the core code in each of the three versions of Retrospect 6.0—Desktop, Workgroup, and Server—is identical, figuring out which one you need is a chore. You can add 1-, 5-, 10-, 50-, and 100-client licenses for Retrospect Client to any version. (Retrospect Express Backup is no longer a stand-alone product, though it remains bundled with other products such as Maxtor's OneTouch hard drive [♦♦♦♦; January 2004].)

Starting at the high end, if you need to back up multiple Macs running Mac OS X Server, or if you must back up more than 30 Macs, buy the $799 Retrospect Server, with its 100-client license and support for tape libraries and autoloaders. The $499 Retrospect Workgroup is a better deal if you're backing up between 13 and 30 Macs or if you have only one OS X Server Mac on which you can run Retrospect. The program comes with a 20-client license and also supports tape libraries and autoloaders. Finally, as long as you don't need to back up more than 12 Macs, have no computers running Mac OS X Server, and don't use a tape library or autoloader (though normal tape drives are supported), you can stick with the $129 Retrospect Desktop, which includes only a pair of client licenses.

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Epson Stylus Pro 4000

Large-Format Ink-Jet Printer Achieves New Levels of Print Quality

BY RICK LEPAGE

In its never-ending quest to stay ahead of Hewlett-Packard and Canon in the photo-printer market, Epson has released the Stylus Pro 4000, a large-format ink-jet printer that improves upon a tradition of excellence most recently found in the Stylus Photo 2200 (★★★★½; October 2002) and the Stylus Pro 7600 (★★★★½; February 2003).

With the $1,795 Stylus Pro 4000, Epson focused considerable energy on improving the print engine, including minor improvements to print quality. This was a wise decision; the 2200 and the 7600 produced stunning prints, and Epson sticks with the same UltraChrome pigment-ink formula in the 4000. As a result, the overall quality of both color and monochrome prints is excellent. Prints made on resin-coated, semigloss photo papers looked as though they'd come from a photo lab, and prints made on matte-finish papers had a depth of detail and richness that no other ink-jet printer can match.

Speed Factor

The 4000's printhead is larger than its predecessors', making this the speediest Epson printer I've ever tested. For example, an 8-by-10-inch photo took slightly over two minutes to print at the basic 720-dpi print quality; approximately three minutes at 1,440 dpi; and under six minutes at the highest-quality setting, 2,880 dpi. These times were 50 percent faster than those of the Stylus Pro 5500, Epson's previous large-format ink-jet, and about 60 percent faster than those of the 24-inch-wide Stylus Pro 7600.

For most prints, the 1,440-dpi setting will give the best mix of quality and speed; at 720 dpi, fine detail in a printed image can look a little rough. Fine-art photographers looking to sell their work at larger sizes may opt for the 2,880-dpi setting, but I found few images that required that level of detail and that were worth the increased print times.

Slick Improvements

There are plenty more smart enhancements in the 4000, including a slick automatic nozzle-alignment feature that replaces the laborious manual process in Epson's previous large- and wide-format printers. The 4000 uses a light beam and a scanner to align the nozzle automatically, saving you from eyestrain.

But the smartest new feature is in the ink system itself, which uses an eight-ink printhead instead of the seven-ink head found in the earlier UltraChrome printers. This extra ink channel eliminates the biggest limitation of the 2200 and the 7600: having to swap photo- and matte-black ink cartridges, a process that wasted valuable ink and time. Both ink types are now loaded into the printer, and the 4000 automatically chooses the proper black ink, depending on the paper type selected in the print driver.

If you're more interested in proofing than in photographic output, the 4000 is also available in a graphics configuration, with two cartridges each of cyan, magenta, yellow, and black. While I didn't test that version of the printer, Epson claims that it's nearly twice as fast as the photographic model.

The 4000's input tray handles paper as large as 17 by 22 inches and supports borderless printing. The printer also has two manual-feed slots and a roll-feed mechanism for rolls as wide as 17 inches, as well as a built-in paper cutter. Ink life is excellent; I got more than 500 prints of varying sizes out of my unit before any of the cartridges needed replacing.

My only complaint is with the driver: you have to create multiple printer instances with OS X 10.3's Printer Setup Utility for different combinations of roll, sheetfed, and borderless-print options. You can have as many as nine versions in the Print dialog box, but you'll probably need only two or three.

Macworld's Buying Advice

Excellent print quality, efficiency, and smart design make the Epson Stylus Pro 4000 a winner. If you want to sell your photos, or if you work in a high-volume environment and need the fastest output possible, there's no better large-format printer on the market today. □

RATING: ★★★★½

PROS: Automatic nozzle alignment and an eight-ink printhead save you time; print quality rivals that of photo labs; fast performance; no cartridge swapping; extensive paper-handling options, including borderless printing.

CONS: Driver setup could be simpler.

PRICE: $1,795

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Epson, 800/463-7766, www.epson.com

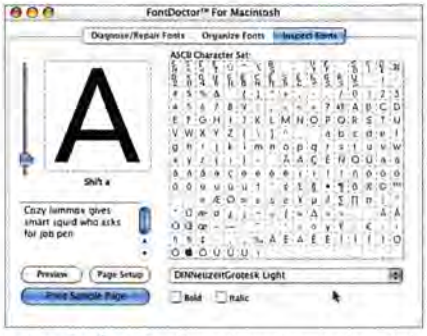
Font Doctor 6

Font-Organization and -Repair Software Gets Better and Faster

BY ANDREW SHALAT

Font Doctor is a utility you don't ever want to have to use. But when your fonts act funky or when they're in disarray, then Font Doctor 6 becomes your best friend. It not only repairs corrupt fonts and organizes them into neat folders, but also converts Windows fonts into Mac fonts, and vice versa. Now with a faster and simpler interface, Font Doctor, which has been updated for Panther, is a great complement to full-featured font-activation programs such as Suitcase (★★★★; February 2004), which includes Font Doctor. The $20 upgrade price certainly makes upgrading worthwhile for current users.

Font Doctor 6 organizes fonts fast. (The time needed to put them all into neat, alphabetically ordered folders will vary depending on how many fonts you have.) It automatically fixes damaged fonts or moves them to another folder to be trashed. Font



Letter Perfect FontDoctor's preview window rivals the best font managers for clarity and completeness.

Doctor preserves Extensis Suitcase databases, so users don't have to redo their customized font sets.

If you haven't yet replaced all of your PostScript and TrueType fonts with the cross-platform OpenType format, Font Doctor's ability to convert fonts from Mac to Windows and back again will come in handy.

Macworld's Buying Advice

Font Doctor easily and expertly repairs and organizes fonts. If you have cross-platform problems, Font Doctor will fix them. □

RATING: ★★★★½

PROS: Simplified interface; cross-platform font conversion; fast.

CONS: Some redundancy with font-activation applications.

PRICE: $70; upgrade, $20

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Morrison SoftDesign, 800/583-2917, www.fontdoctor.com

Wacom Graphire3 6x8

Redesigned Tablet-Mouse Combo Provides Great Graphics Value

BY BEN LONG

For the graphics user who doesn't have a tablet, the $200 Graphire3 6×8, the latest update to Wacom's consumer line of tablets, is too good a deal to pass up. Bundled with Adobe Photoshop Elements 1.0 (for Mac OS 9) and Corel Painter Classic (for Mac OS X), it is a sturdy graphics workstation right out of the box.

The Graphire3 lacks the higher resolution, sensitivity levels, tilt and bearing controls, and larger selection of input tools and tablet sizes that Wacom's more-expensive Intuos series offers. But it provides good performance and flexibility, and most users will find that it is well suited to any task, personal or professional. And for the fashion conscious, it comes in three different colors.

Though it's very similar to the Graphire2, the Graphire3 has an updated design with a slimmer profile. In one of its cleverest improvements in years, Wacom has built a slot into the front edge of the tablet for storing the pen. Like all Wacom tablets, this USB tablet uses a cordless pen that doesn't require a battery.

The Graphire3 ships with a pen that offers not only 512 levels of pressure sensitivity in the tip, but also a built-in programmable eraser and a two-way switch on the side. As usual, Wacom's control panel makes short work of programming the eraser or the switch to perform other functions (such as double-clicking or control-clicking), and the tablet tracking and feel are excellent.

Also included is a two-button, scroll-wheel mouse that works only on the tablet. Though the mouse is comfortable to use, its tracking isn't as smooth as the Apple Pro Mouse's, so you probably won't want to use it as a full-time replacement.

Macworld's Buying Advice

The Graphire3 6×8 is excellent—a great performer with an outstanding design. □

RATING: 4½

PROS: Wacom's cordless, batteryless tablet technology delivers excellent pen feel and response.

CONS: Included mouse is not a replacement for your regular mouse.

PRICE: $200

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Wacom, 800/922-9348, www.wacom.com

LaCie Bigger Disk

Four Drives in One Enclosure Equals Massive Capacity

BY KRISTINA DE NIKE

Even if you can't quite conceptualize how you could ever fill 1 terabyte (1,000GB) of disk space, the LaCie Bigger Disk will put that much capacity on your desktop in seconds. If you happen to know that you need 1TB to back up your network or complete your video-editing project, this drive provides it in one enclosure—a new concept that has been very well executed.

The Bigger Disk can connect to your computer via FireWire 800, FireWire 400, or USB 2.0. The case holds four 250GB ATA/133 drives, but LaCie's custom firmware spans the four drives, so your Mac sees them as one volume. You can't see or format the individual drives, but you can partition the large volume.

Our tests revealed that the Bigger Disk's performance was equivalent to that of a single ATA FireWire 800 drive. The array writes to the first drive; when that drive is full, it moves on to the second, and so on until it has used up all four drives. The drive performed best when it was connected to our Power Mac G5 via FireWire 800. The array was around 30 percent faster on FireWire 800 than on FireWire 400. Over USB 2.0, the Bigger Disk was almost twice as slow as FireWire 400.

You can secure the drive in a locked box or use it to transport large projects, but at 11 pounds, this drive is not light—and it's rather bulky. If you want to attach the drive to a server, you can buy a mounting kit for a 19-inch network rack from LaCie, for $78.

Macworld's Buying Advice

The Bigger Disk costs $1,199, which is approximately the same price as four 250GB FireWire 800 external drives. But if you need one huge volume to organize your data, the LaCie Bigger Disk is a clean, simple solution. □

RATING: 4½

PROS: Large capacity; connects via USB 2.0, FireWire 400, or FireWire 800.

CONS: No faster than a single FireWire 800 drive; large and bulky.

PRICE: $1,199

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: LaCie, 503/844-4500, www.lacie.com

LACIE PHOTOGRAPH BY PETER BELANGER

The Print Shop Mac OS X Edition 1.0

Design and Desktop-Publishing Package Debuts in Mac OS X

BY KELLY LUNSFORD

Over the years, The Print Shop, a popular design and desktop-publishing package for creating greeting cards, calendars, labels, and similar projects, has come and gone. Now, thanks to its new developer, Software MacKiev, this long-missed program is back on the Mac and better than ever.

The Print Shop Mac OS X Edition 1.0 is versatile, elegant, and easy to use, and it integrates seamlessly with other Mac applications, such as Apple's iPhoto, iTunes, iCal, and Address Book.

Getting Started

The Print Shop offers templates for 14 types of projects, including greeting cards, calendars, CD labels and booklets, letterhead, pamphlets, banners, and business cards. Within each project category are dozens more predesigned templates, which you can use as a starting point for your own designs or print as they are. You can also start with a blank template if you prefer to step out on your own.

For projects such as labels, which require that you match your designs to a specific paper size or shape, The Print Shop supports a long list of Avery papers. It even includes an Avery Updater, which downloads new Avery templates as they become available. At press time, Software MacKiev was putting the finishing touches on a free download that would add support for the direct CD-printing features found in some Epson printers. The download should be available by the time you read this.

The Print Shop's template implementation is particularly nice when it comes to designing greeting cards. To design cards so that all elements appear right side up after folding, you often have to position some panels sideways or upside down—no easy task in programs such as Microsoft Word. The Print Shop simplifies this process by dividing cards into three different views—Front, Inside, and Back—so you are always designing right side up, regardless of how the panel will actually print.

Designing Projects

One of the first things you'll notice after opening The Print Shop is how *good* the program looks. Software MacKiev fully rewrote The Print Shop to take advantage of the power and beauty of Quartz, the graphics engine behind OS X. In The Print Shop, graphics grow and shrink in real time as you drag their edges, making it easy to put photos and clip art into place. You can also zoom in on the workspace simply by expanding the edges of the document window. And aside from photographs, all of the included graphics and text are vector art, so they remain crisp no matter how large or small you make them.

You can use the Objects toolbar to insert photos, text, shapes, borders, or other elements into your layout. The Print Shop has a library of more than 12,000 images, which range from hopelessly cheesy clip-art illustrations to richly detailed photographs. Thankfully, you can narrow search criteria by shape, subject, or type of graphic as you look for something suitable. But to access these images and predesigned templates, you have to insert the program's CD into your Mac (or you can download the CD's 600MB contents).

You can also import your own photos into Print Shop projects. The Print Shop integrates very nicely with iPhoto. When you select Insert: iPhoto Image, the program displays a list of all your iPhoto albums—including iPhoto 4's Smart Albums.

If your images need to be touched up, you can use The Print Shop's Photo Workshop feature to perform basic color correction, sharpening, and cropping. In the Fix Flaws

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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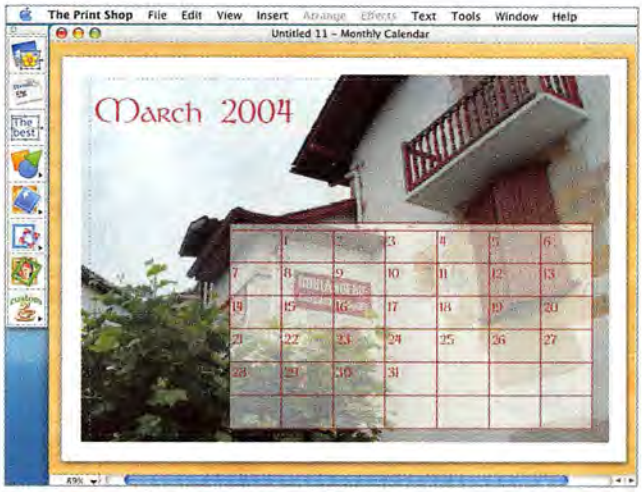


Make a Date Software MacKiev's The Print Shop makes it easy to design calendars, cards, and other projects that incorporate your photos.

section, you'll find tools for correcting red-eye, pet-eye (the green glow that makes your beloved pet appear demonic), dust marks and scratches, and shiny faces—a truly useful tool that is like applying face powder after the fact. You can also apply a variety of Artistic Effects to change or enhance a photo's appearance. All of the Photo Workshop tools work well. However, since there's no way to zoom in on the tiny preview image when adjusting colors or sharpness—two particularly tricky tasks—judging the effectiveness of your work without first applying the changes to your image can be almost impossible. If you don't like what you see, you'll have to undo the changes and start again.

The program provides a searchable collection of quotes and verses, so you can add words of inspiration to your projects. But working with text can be frustrating. To edit text, you must first double-click on the text box, which opens in a white text window. This makes it difficult to work with light-colored text (though white text turns black and is therefore easy to see). To leave the editing window—so you can adjust text-box size or position—you must click elsewhere on your screen and then *re-select* the text box. And I longed for more control over the spacing of multiple lines of text.

Apple Integration

One thing that really sets The Print Shop apart from similar consumer-oriented design applications is its superb integration with Apple applications. In addition to connecting to iPhoto albums, The Print Shop can also import iCal events into Calendar templates, download song lists from iTunes to use on CD labels, and print mailing labels from Address Book contacts—although the Mail Merge feature is a bit unintuitive. The program even offers DVD-label templates that match Apple's iDVD 3 themes. It's a small touch, but one that shows care and attention to detail.

Macworld's Buying Advice

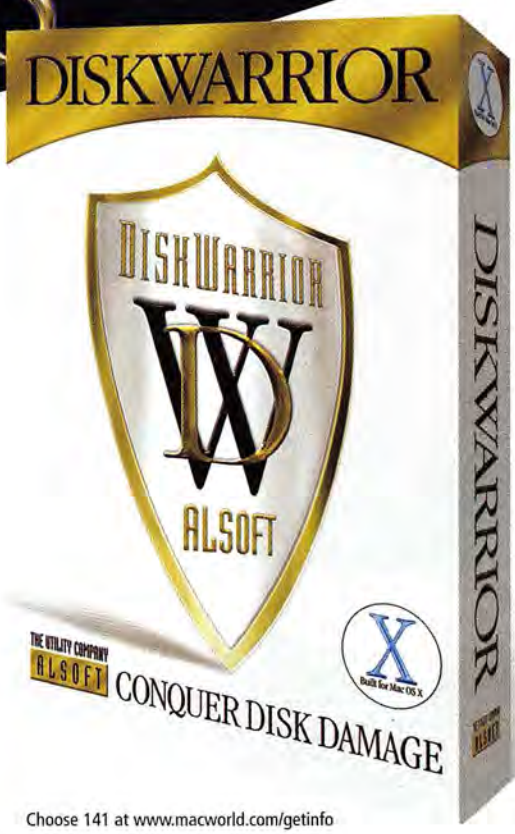
Despite a few minor inconveniences, The Print Shop Mac OS X Edition 1.0 is a truly elegant application and a great tool for any creative project. Thanks to its many templates and its simplified interface, the program is easy enough for young family members to use and versatile enough to allow for true creativity. □

RATING: ♦♦♦♦
PROS: Packed with great project templates; easy to use; great integration with Apple applications; scalable vector graphics.
CONS: Clumsy text controls; small image-editing previews.
PRICE: $50
OS COMPATIBILITY: Mac OS X
COMPANY: Software MacKiev, info@mackiev.com, www.mackiev.com

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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> Unreal Tournament 2004
> The Lord of the Rings: The Return of the King
> Super TextTwist and Super WhatWord
> Call of Duty

Unreal Timing

MACSOFT RELEASED UNREAL TOURNAMENT 2003—A POPular first-person shooter that lets players square off in futuristic gladiatorial combat—roughly *six months* after its PC counterpart was released. Needless to say, Mac users were a bit miffed.

But with the release of Unreal Tournament 2004 (UT 2K4), MacSoft is out to prove that these time lags are in the past. UT 2K4 is an excellent update to an already good game, and Mac and PC versions of the game hit store shelves almost simultaneously. That's great news for hard-core Mac gamers who want to learn the new maps, weapons, and play techniques at the same time as the PC crowd, thus eliminating any experience deficit when they go head-to-head in online arenas.

Off-Roading Adventure New vehicles are among the many things that make Unreal Tournament 2004 different from its predecessor.

In UT 2K4, you don sophisticated armor and weaponry and then take to the playing field, determined to win at any cost. You can play alone against computer-controlled bots, or, as many people may prefer, against real players in an online arena.

While you'll find welcome improvements in almost every corner of UT 2K4, one of the biggest changes is the addition of vehicles. You can now take command of everything from light assault vehicles to heavy tanks. I'm particularly fond of the game's hovercraft, which features spinning blades that are as suitable for trick flying as they are for occasionally beheading an enemy combatant. Many vehicles require two players—one to drive and one to work the weapons—so teamwork is required. But if you prefer some Carmageddon-style pedestrian squashing, you can have your fill of that, too.

UT 2K4 has a new game mode: Onslaught is a team-based challenge in which players must capture and then hold strategic points to win. The game has also revived Assault mode, which was removed from the 2003 version. There are 10 different game modes in all—enough to keep even the most challenge-starved gamer busy for quite some time.

Of course, all these game modes would mean nothing without new environments to explore. And UT 2K4 delivers here, with more than 90 maps, about half of which are entirely new. Alas, the Mac version still lacks editing tools for creating your own maps. Instead, we'll have to be content with playing mods created by the PC-based UT 2K4 community.

UT 2K4 offers voice communication—a handy technology that lets you better coordinate team-based strategy. The feature supports any Mac-compatible microphone, including the one built into Apple's iSight camera.

Another interesting addition is Unreal TV, which lets you watch other players online. Believe it or not, the Spectator mode can be fun and rewarding. Seeing how other players approach the game—the strategies they use and the mistakes they make—is interesting.

Almost everything in UT 2K4 has been turned up a notch: the graphics are better; the maps are more richly detailed and, in some cases, positively gargantuan; the artificial intelligence is smarter; and the weapons are more varied.

Of course, all this complexity comes at a price. You'll sacrifice about 6GB of hard-disk space to get this game installed. (UT 2K4 ships on DVD instead of CD—a first for MacSoft.) What's more, you're

continues

UNREAL TOURNAMENT 2004
RATING: ★★★★½
PROS: New game modes, weapons, and maps; improvements in almost every aspect of the game.
CONS: Very demanding on system hardware.
PRICE: $40
OS COMPATIBILITY: Mac OS X
COMPANY: MacSoft, www.macsoftgames.com

All the King's Men Relive great moments from the Oscar-winning movie in The Return of the King.

going to need at least a 933MHz G4 to play, though you might be able to play some of the more modest maps and game modes on an 800MHz G4.

The game is rated M, for Mature audiences, due to the intense and constant violence. There's even some PG-13 smack talk from the computer-controlled bots.

The Bottom Line With improvements to almost every aspect of play, Unreal Tournament 2004 is a great game. However, its complexity will tax a Mac running at anything less than 933MHz.

THE LORD OF THE RINGS: THE RETURN OF THE KING

RATING: ♦♦♦♦

PROS: Fantastic production quality; fast-paced action.

CONS: Cumbersome game-save system; weird co-op mode; no support for online multiplayer gaming.

PRICE: $50

OS COMPATIBILITY: Mac OS X

COMPANY: Aspyr Media, www.aspyr.com

My Precious

To say that J.R.R. Tolkien's master-piece *The Lord of the Rings* has become a national obsession is perhaps an understatement. Now Aspyr is bringing some of that action to the Mac, with The Lord of the Rings: The Return of the King, an action-packed adventure based on the third and final installment of Peter Jackson's award-winning film adaptation.

The Return of the King is a third-person action game that lets you take on the role of a character from the film, such as Gandalf, Frodo, Sam, Gimli, Aragorn, and Legolas. Like the original story, the game unfolds from the observations of its different characters—the Hobbits, on their way to Mount Doom to destroy the ring; Aragorn and his party, sent to defend the world of humans from Sauron and his armies; and so on.

When it comes to action, The Return of the King is a pure button-mashing, hack-and-slash epic. You can switch between a variety of attack modes—including physical attacks for hand-to-hand combat; ranged attacks using a bow and arrow, an axe, or another weapon that your character is adept at using; and parrying, to help defend yourself from oncoming attacks. You're rewarded for

continues

EXCLUSIVE FIRST LOOK | Call of Duty

Almost six decades after the end of World War II, Nazis still figure prominently in our collective psyche as the *worst bad guys ever.* Aspyr Media has leveraged this heavily over the past couple of years, most notably with the grittily realistic Medal of Honor series. Now they're set to release Call of Duty, a new World War II–themed first-person shooter that should appeal to Medal of Honor fans or anyone looking for some wartime action. And we got an exclusive first look.

Call of Duty lets you experience World War II through the eyes of different Allied forces, reliving battles such as D-Day, the Russian charge at Stalingrad, and the Battle for Berlin. Over the course of two dozen unique levels, you'll fight as an American paratrooper, a British Special Forces operative, and a Russian tank commander.

Allied Forces You'll fight with Americans, Britons, and Russians in the World War II shooter Call of Duty.

There's plenty to see and do in Call of Duty. For example, you'll have to meet a mission objective while enemy forces are assaulting you or as a column of tanks approaches. But while level designs are linear and fairly intuitive, you're given a lot of leeway in how you complete the mission. This gives you freedom to come up with strategies that work best for you, so there's never any one *right* way to win. As a result, Call of Duty's single-player missions are more fun to replay than many games of this type.

The most significant difference between Call of Duty and Medal of Honor is the scale of battle. Call of Duty's designers have crammed a lot more soldiers onto the battlefield. Whereas Medal of Honor felt more like a solitary effort (with the occasional mission operative lending a hand), Call of Duty feels much more chaotic and features the grander scope of HBO's *Band of Brothers* miniseries or the movie *Saving Private Ryan.* War is hell, after all.

One downside is the game's AI. The Allied soldiers you fight alongside occasionally exhibit an annoying ignorance of what's going on around them. The Axis troops aren't immune from this affliction either. The game designers have managed to largely disguise this shortcoming by creating challenging battlefields that cleverly disguise your enemies.

Of course, no game like this would be complete without a robust multiplayer component, and here Call of Duty delivers. In addition to the obligatory Deathmatch and Team Deathmatch modes, Call of Duty offers a Retrieval mode, which is a capture-the-flag challenge; a Behind Enemy Lines mode, which is a really vicious variation on tag; and a Search And Destroy mode, in which one team tries to accomplish a mission objective while another team plays defense.

To play Call of Duty, you'll need an 867MHz or faster Mac and a DVD drive. As you might imagine, the game is pretty graphic. There's enough blood and violence to merit a Teen rating.

The Bottom Line World War II shooters may be well-worn territory, but Call of Duty proves there's still a lot of new ground to cover. If Medal of Honor hasn't satiated your appetite for this genre, Call of Duty is definitely for you.

BETA TESTED

CALL OF DUTY

PROS: Large scale battle; great multiplayer support.

CONS: Dumb AI.

PRICE: $50

OS COMPATIBILITY: Mac OS X

COMPANY: Aspyr Media, www.aspyr.com

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dispatching your foes efficiently—so developing accuracy with your blade, bow, axe, or staff is important. You can also interact with objects in the environment, such as ballistae, gate and drawbridge levers, and more.

The production quality in The Return of the King is excellent. The 3-D graphics are finely detailed, straight down to the armor filigree and glowing embers of torches and flaming arrows. The game's sound effects are all straight from the movie, including many of the characters' voices. The game also features some new narration from Sir Ian McKellen (who plays Gandalf)—a welcome touch that really makes you feel as though you're experiencing the story from a different perspective.

In between levels, you can improve your character's abilities by buying special moves and skills. It's not the most imaginative system out there, but it's a tried-and-true method that works well enough under the circumstances.

The Return of the King does hit a few sour notes. The game's console roots are painfully obvious at times, most notably when you try to save a game in progress. Even in its early stages, The Return of the King's levels can be huge. However, you can save a game only *between* levels. This is unnecessarily frustrating—especially when time is short and you have only a few minutes to play.

Also bewildering is the game's lack of support for online multiplayer gaming. Instead, you're limited to two players seated side-by-side, each with a game controller (or one game controller and the keyboard and mouse). It's fun but awkward. The omission is especially bizarre since the PlayStation 2 version supports online play.

Though there's a lot of violence in The Return of the King, there's very little bloodshed. But the game's sound effects are, in some ways, just as graphic.

The Bottom Line The Lord of the Rings: The Return of the King has been available for console and PC gamers for a while now, so there's a good chance that avid gamers will have already played it. But if you don't have a game console in the house, The Return of the King is worth picking up—especially if you're a fan of the movie.

Word Sleuth For word-lovers, Super TextTwist can become a highly addictive pastime.

SUPER TEXTTWIST AND SUPER WHATWORD
RATING: ♦♦♦½
PROS: Better value than buying the games separately online; lots of word-related challenges.
CONS: Tepid audio effects and soundtrack.
PRICE: $20
OS COMPATIBILITY: Mac OS X
COMPANY: MacPlay, www.macplay.com

Word Play

If you like word games, you'll love Super TextTwist and Super WhatWord—two fun and challenging word puzzles that are now available on a single CD from MacPlay.

Super WhatWord and Super TextTwist are the brainchildren of puzzle-game maker GameHouse. TextTwist presents a seemingly random series of vowels and consonants from which you must form as many words as possible. Each time you create a new word, TextTwist adds it to a series of blanks along the left side of the page. Once you've used all the letters to form the longest possible word, you can progress to the next level. Pressing the Twist button can get you out of a jam—this rearranges the letters to give you a new perspective.

The game's untimed Puzzle mode takes the pressure off and lets you focus on finding all of the possible word combinations. For an added challenge, try the timed Action mode, which imposes a tough two-minute limit.

TextTwist culls puzzles from a finite number of words. I've come across the same combination of letters a few times. Still, the game is a lot of fun for anyone who loves words.

In Super WhatWord, you're given a five-by-five-letter grid. To earn points, you'll need to swap the letters' positions until you create a word either horizontally or vertically. Each time you create a new word—whether intentionally or not—those letters disappear and new ones drop from the top of the screen. To progress to the next level, you must form one of the WhatWords listed to the right of the grid.

This isn't as easy as it sounds. Sometimes, while swapping letters to form a word on one side of the board, you may accidentally create a word somewhere else—causing the letters to disappear. If the letters you need to form your WhatWord suddenly vanish, you may have to wait awhile before they pop up again. Like TextTwist, WhatWord features a timed Action mode and an untimed Puzzle mode for some variation.

The games have good production quality, but they won't blow your socks off. The limited sound effects are less imaginative than those of some other puzzle games out there. The games provide options for turning off the sound effects and soundtracks and for viewing the games in full-screen or windowed modes.

The Bottom Line Super TextTwist and Super WhatWord are solid games that offer instant gratification to anyone looking for challenges that involve words, not weapons. And thanks to this new bundled CD, you can pick up both games for the price of one. □

MacCentral.com Senior Editor PETER COHEN would love to have a Link Gun from UT 2K4 to rid himself of those pesky raccoons that keep getting in his trash.

Recently Reviewed

NANOSAUR 2: HATCHLING

♦♦♦♦; Pangea Software, www.pangeasoft.net; $35; download, $25

In April 2004's *Game Room*, I took a look at a prerelease version of Pangea Software's Nanosaur 2: Hatchling. Now available for purchase, Nanosaur 2 proves to be a worthy successor to its 1998 ancestor.

The game's most interesting addition is support for 3-D gaming with red and cyan anaglyph glasses (included with the CD version). It's a neat gimmick that works well. With only three single-player levels, the game is short. But it compensates by offering six multiplayer games—both players take turns on the same Mac. You'll get even more mileage out of the 3-D glasses if you have Pangea's previously released games, Otto Matic and Bugdom 2, which have also been updated with stereoscopic support.

Coming Soon. Pre-order at www.aspyr.com

Leave No Man Behind

A 1992 humanitarian mission became a military operation against oppressive warlord Mohamed Farrah Aidid in 1993. Army Rangers, Marines, Night Stalkers, Navy Seals and Delta Force ultimately brought him down. In Delta Force Black Hawk Down, experience 10 extraordinary months in Somalia as a member of the U.S. Special Operations Forces.

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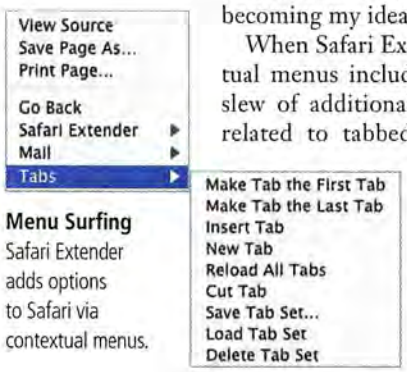
> Safari Extender
> FaxEmailHelper
> iPod It
> ToDo X
> MailEnhancer
> MenuPrefs

Safari Supplement

ALTHOUGH I TRY EVERY NEW BROWSER, I KEEP COMING back to Safari. But that doesn't mean I'm completely satisfied with it—I wish it had a few more features. With the help of Ricardo Batista's $10 **Safari Extender v1.19** (★★★★; http://batista.org/extender.html), Safari is now a few steps closer to becoming my ideal browser.



Menu Surfing Safari Extender adds options to Safari via contextual menus.

When Safari Extender is installed, Safari's contextual menus include new submenus that provide a slew of additional features. My favorite ones are related to tabbed browsing: You can—finally!—rearrange tab order, and you can save sets of tabs. But Safari Extender also gives you basic commands that Safari should already have. For example, it lets you temporarily disable images to speed up page loading.

Safari Extender delivers other frequently requested features, such as the ability to include the URL, time, and date when you print a Web page. It also has useful e-mail commands that let you send someone selected text, the current URL, or all the URLs currently open in tabs.

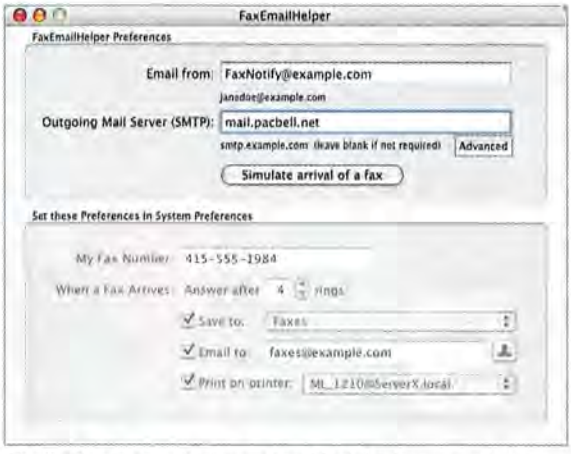
Safari Extender has more features than I have room to cover here, and the developer has promised to add even more in the future.

Fax Fixes

OS X 10.3 can automatically forward faxes received by your Mac to an e-mail address, so you can get your faxes no matter where you are. But this feature doesn't work for a lot of users.

If this problem sounds frustratingly familiar, Real World Technology Solution's free (donations accepted) **FaxEmailHelper 1.2** (★★★★; www.rwts.com.au/FaxEmailHelper) may be the solution. It fixes OS X configuration issues that prevent many Macs from e-mailing received faxes. It also lets you specify a valid From e-mail address—required by many ISPs for delivery—and to specify an outgoing (SMTP) mail server through which the e-mail should be sent. (It even supports authenticated SMTP.) This is useful because many ISPs will accept e-mail only from a traditional mail server—which, chances are, your Mac isn't.

As a bonus, FaxEmailHelper lets you simulate the arrival of a fax—and the e-mailing of that fax, assuming you've set your Fax & Print preferences to forward them—so you can make sure everything is working.



Finally, Fax FaxEmailHelper makes OS X's fax feature work the way it's supposed to.

iPDA

Apple's iPod and iPod mini include basic PDA features: You can use iSync to copy contacts, calendars, and notes from Address Book and iCal to your iPod, and then use your iPod's menus to access that information. But if you want advanced PDA functionality on your iPod, check out ZappTek's $15 **iPod It 2.3.2** (★★★★; www.zapptek.com).

iPod It adds the ability to transfer Entourage data (events, contacts, e-mail messages, notes, and tasks), iCal calendars, remote .ics calendars (such as those at www.iCalShare.com), Address Book contacts, Mail messages, Stickies notes, and news headlines and weather forecasts from the Web. For each type of data, you choose the specific information to be transferred: For most types, you can sync all data, selected data (specific calendars, contacts, and so on), or only certain types of data (contacts in your Friends category, for instance). With e-mail, you can also choose to sync all mail, selected folders, unread and/or flagged mail, or only mail received in the past few days. For weather forecasts and news headlines, you choose the city and news types (business, world, sports, entertainment, and so on), respectively. For calendar data, you can restrict syncing to a range of dates (such as the past week or the next three weeks). iPod It

also transfers calendar and task alarms to your iPod.

You can set iPod It to sync automatically when launched. To completely automate the process, add a utility such as ZappTek's $5 iPod Launcher, which launches iPod It when your iPod is connected.

Of course, iPod It doesn't let you use your iPod to edit or input data—but if you use a PDA primarily to store and retrieve information, iPod It makes the iPod a viable alternative.

PDA-Pod iPod It makes your iPod a real—though read-only—PDA.

What to Do?

I've always kept to-do lists, but I've never found a to-do–list utility I could actually use—I've always reverted to good ol' pen and paper. Omicron's $15 **ToDo X 1.5** (★★★★; www.nomicro.com) may have finally relegated my trusty notepad to the desk drawer.

ToDo X lets you create as many task lists—which the program calls categories—as you need, and each list can have an unlimited number of tasks. You rank these tasks in importance (from 1 to 9) and mark them as completed. Each task has a note field.

That's all pretty standard fare for to-do software, but ToDo X excels by allowing you to easily work with your lists. You can drag and drop items between lists to move, copy, or alias them. You can quickly search for text within a list. You can view creation and modification dates for each item, and even time-stamp tasks. ToDo X can also import .ics files, so you can move your to-do lists from iCal or Palm Desktop without having to retype them. (You can also import other users' ToDo X lists.)

ToDo X's Dock menu is another nice feature. The icon shows how many items you have of a certain priority or higher (you choose the priority threshold), and control-clicking on the icon opens a Dock menu showing tasks of a specific priority or higher—using one of several selectable views—so you can quickly see pending tasks from within any application. Select a task from the menu to open its note and priority window in ToDo X.

Finally, if you miss the tactile experience of a paper list, there are myriad ways to print ToDo X lists: particular categories, items, and/or priorities; with or without notes or check boxes; grouped or ungrouped; and more. ToDo X has finally given me an electronic to-do–list utility that I want to use.

Electronic Lists With ToDo X, you'll be the most organized kid on the block.

Enhanced Mail

Although Apple's Mail is a good e-mail client, it's missing a number of features that other clients have long had. The free **MailEnhancer v1.11** (★★★½; find.macworld.com/0003) provides four of these options and makes them accessible via Mail's Preferences window.

If you have multiple e-mail accounts, a handy feature is MailEnhancer's ability to automatically append a different signature to messages from each address. (Simply name your signatures using your various e-mail addresses.) You can also change Mail's Dock icon so that it shows the number of unread messages in *all* folders, not just in your in-box. MailEnhancer can automatically show and hide Mail's Activity Viewer window when you check for new mail, and you can set it to display a status message (No New Mail or You Have *Number* New Messages) after checking mail.

E-mail Options MailEnhancer provides Apple's Mail with several frequently requested features.

Panther and Jaguar versions are available; be sure to install the correct one. And read the ReadMe file for important installation instructions.

Systemwide Preferences

I like the fact that, in OS X, Apple has placed most user settings in System Preferences. But I don't like that you can't go directly to a particular preference pane unless System Preferences is already running. A few menu utilities can provide you with direct access, but iThink Software's $5 **MenuPrefs 2.5** (★★★★½; www.ithinksw.com/products/menuprefs) has become my favorite.

Accessible via a systemwide menu, MenuPrefs lets you open your favorite preference panes quickly and easily. And you can choose how the menu is organized: alphabetically, by category (Personal, Hardware, System, and so on), by location (System, Library, or User), or in a customized order (you decide not only the order in which preference panes appear, but also whether particular panes appear at all). I use this feature to show only the 10 or 15 panes I access regularly. Perhaps MenuPrefs provides only a minor bit of convenience. But if I weren't concerned with minor conveniences, I wouldn't use a Mac. □

Preferred Preferences MenuPrefs lets you quickly access your favorite preference panes.

Contributing Editor DAN FRAKES (www.danfrakes.com) is the author of *Mac OS X Power Tools, Second 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.

digital music SUPERGUIDE

Everything You Need to Know about Using Your Mac, iPod, and Stereo to Play Your Music Throughout the House

THANKS TO iTUNES AND THE iPOD, music has become an integral part of the Mac life. Those two products have helped displace the stacks of CDs most of us have been amassing for the past 15 years.

The benefits are clear. Digital music files take up very little storage space on your Mac; allow you to search, categorize, and play your music in new and exciting ways; and are portable. And if you're ready to go beyond prerecorded music, Apple's GarageBand app puts you in the studio to make your own tunes.

To help you get the most from your music, we've put together a package with insights on ripping and organizing your music collection. We'll also show you how to pump the sound all around the house, beyond the limitations of your Mac's tinny speakers or your iPod's headphones. And you'll discover how to create your own songs with GarageBand.

By Christopher Breen
and Michael Gowan
Photographs by Peter Belanger

LOCATION PROVIDED BY LIGNE ROSET

RIP, STORE, ORGANIZE

iTunes couldn't be much easier to operate, but there's much more to it than click, play, and enjoy. Peer beneath the hood and you'll find that you can customize—and even improve—the audio files that iTunes generates. Dig a bit deeper, and you'll discover that iTunes offers a wealth of ways to organize your music collection.

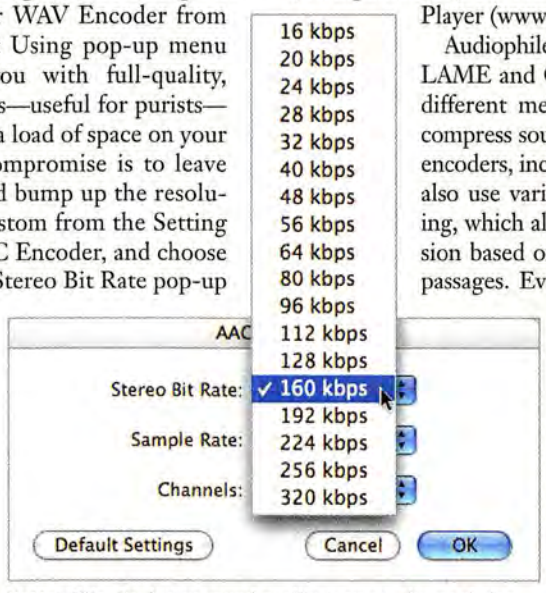
Mac the Ripper Anyone who has ripped an audio CD (that is, converted and imported its contents) in iTunes knows what a simple process it can be. Insert the CD, wait for iTunes to download track information from the Internet, click on the Import button, and go about your business while iTunes does its business. What you may not know is that you have a choice when it comes to the format in which iTunes imports that CD.

iTunes and the iPod support four audio formats—AIFF, WAV, MP3, and AAC. AIFF and WAV files are uncompressed and consume about 10MB of hard-drive space for each minute of stereo audio. MP3 files are compressed (stripped of audio data considered to be less detectable to the human ear). With iTunes 4, Apple added a new audio-compression format—Dolby Laboratories' Advanced Audio Coding (AAC).

Nice View iTunes' View Options allows you to sort your music in a multitude of ways.

By default, iTunes 4 rips CD audio files at 128 Kbps to about 7 percent of the original file size. But if you're willing to trade hard-drive space for better sound quality, you may want to change iTunes' default import settings. To do so, select Preferences from the iTunes menu and click on the Importing tab. Selecting AIFF Encoder or WAV Encoder from the Import Using pop-up menu provides you with full-quality, uncompressed music tracks—useful for purists—but these files will take up a load of space on your Mac or iPod. A better compromise is to leave AAC Encoder selected and bump up the resolution. To do this, select Custom from the Setting pop-up menu beneath AAC Encoder, and choose a higher bit rate from the Stereo Bit Rate pop-up menu (see "Better Bits").

Sound quality is subjective—some people can't tell the difference between a 128-Kbps AAC file and the original CD, whereas others may shrink from AAC files encoded at anything less than 256 Kbps. The best way to determine which settings please you is to rip music you know well at a variety of bit rates (including one version in an uncompressed state), and then perform a blind listening test on the equipment you normally use to play music. The encoding setting that produces a file you can't distinguish from the original (or that you can best tolerate) is the setting for you.



Better Bits For better sound quality, increase the resolution of your audio files.

Alternative Encoders Although iTunes provides a wealth of encoding choices, many people think files produced by the LAME (LAME Ain't an MP3 Encoder) and Ogg-Vorbis encoders sound better than files encoded by iTunes.

LAME generates MP3 files, but because of its improved psycho-acoustic modeling and noise shaping, many people prefer its encoding to iTunes'. Although you can play LAME-encoded files in iTunes and on your iPod, iTunes doesn't allow you to encode LAME files without a little work. To encode your files in LAME format, you must turn to a utility such as Funkatron Production's free LameBrain (www.funkatron.com) or Blacktree's free iTunes-LAME Encoder (www.blacktree.com).

Ogg-Vorbis, an open-source encoder used widely in the Linux world, finds even less support than LAME in iTunes. iTunes doesn't encode Ogg-Vorbis files. Rather, you must use a utility such as No U-Turn's beta Ogg Drop X (www.nouturn.com), which includes a QuickTime component for playback. Or you can play them in Panic's $30 Audion 3 (www.panic.com) or VideoLAN's free VLC Media Player (www.videolan.org).

Audiophiles prefer the sound quality of LAME and Ogg-Vorbis files, which use different methods of choosing how to compress sound data than most common encoders, including iTunes. Both formats also use variable-bit-rate (VBR) encoding, which allows them to vary compression based on the complexity of various passages. Even if you use iTunes' MP3 encoder, you can take advantage of VBR encoding to improve sound quality. From iTunes' Importing preference pane, select MP3 Encode from the Import Using pull-down menu; then choose Custom from the Setting pull-down menu and select Use Variable Bit Rate Encoding (VBR).

The trade-off for the improved sound quality these encoders offer is longer encoding times. For example, encoding a 4-minute, 40.8MB AIFF file as an MP3 file within iTunes took 20 seconds on a 1.25GHz PowerBook G4. Encoding the same file with Ogg Drop's Best Quality VBR setting took 54 seconds. LameBrain's standard VBR setting eventually trotted in at 1 minute and 30 seconds.

Organizing iTunes

You know that you can sort your iTunes music collections into playlists. But is flinging an album's worth of songs into a playlist the most efficient way to organize your music? Perhaps not. The following strategies may help your iTunes Music Library make sense.

All Sorts of Sorting By default, iTunes' main window includes the Song Name, Time, Artist, Album, Genre, My Rating, Play Count, and Last Played column headings—click on a heading to sort your songs by that criterion. Suppose you want to identify a bunch of uncompressed songs that are eating up valuable space on your iPod, or quickly locate songs you just dragged into your iTunes Library? These headings won't help, but iTunes' View Options will.

When you choose View Options (⌘-J) from iTunes' Edit menu, you have the opportunity to add many useful column headings to iTunes (see "Nice View") or to remove those you don't use. For example, by

continues

Master the iTunes Music Store

There's more to the iTunes Music Store than just clicking and downloading. Try these tips to make your shopping experience more productive and enjoyable.

Feed Me To keep up-to-date on additions to the Store without opening iTunes, consider adding Apple's RSS (Rich Site Summary) feed to your RSS newsreader. With a reader such as Ranchero Software's free NetNewsWire Lite or its more robust $40 NetNewsWire (www.ranchero.com), you'll know within seconds when Apple adds new tunes and audiobooks to the iTunes Music Store. To personalize an RSS feed, visit the iTunes Music Store RSS Feed Generator (http://phobos.apple.com/WebObjects/MZSearch.woa/wa/MRSS/rssGenerator).

Full Preview If you have a slow Internet connection, the Music Store's song previews may stutter or stop. To obtain smooth, uninterrupted playback of your previews, choose Preferences from the iTunes menu, click on the Store button in the resulting window, and enable the Load Complete Preview Before Playing option. This tells iTunes to download the entire preview before playing it back.

The Funny Stuff Before the Music Store began selling Audible audiobooks, it classified comedy recordings in the Spoken Word genre. That genre has vanished, but the recordings haven't. If you'd like to browse the rib-tickling area of the Store, select Power Search from within the Search Music Store box, or go to the Music Store's home page and click on the Power Search link. In the resulting Power Search window, choose Comedy from the Genre pop-up menu and then click on the Search button next to the Composer box.

The Hunt for Honoré When browsing a category within the Store's Audiobooks section—classics, for example—you'll discover that it sorts the list of authors by first name. This isn't a terrible burden if you're dealing with modern authors whose first and last names are well known, but pity the high-school student who is unaware that Monsieur Balzac, the 19th-century French journalist and writer, had the first name of Honoré. If you get flummoxed in such situations, use iTunes' Search field.

Stay in Control Adjusting your iTunes Music Store purchase method (top) and creating a custom RSS feed for new releases (bottom) are just two ways to make the Store fit your lifestyle.

Smart Shopping If you find it difficult to reign in your spending at the Store, these two tips may help.

Use the Shopping Cart rather than the 1-Click shopping. It's easy to lose track of how much you're spending when you buy songs and albums as you tour the Store. When you pile all your audible goods into the Shopping Cart and view the possibly shocking total, you may be willing to forgo some of your more impulsive purchases. To switch from 1-Click to Shopping Cart, select Preferences from the iTunes menu, click on the Store tab, and enable the Buy Using A Shopping Cart option. (If you're *really* concerned about impulse buying, consider filling your cart and waiting a day to finalize your purchases.)

Still shocked when you receive your credit card statement? Another way to save money is to budget yourself. Create a second Apple ID, and use it to issue an iTunes Allowance to your original ID. Each Apple ID is linked to a unique e-mail address, not to a credit card number or home address. To perform this trick, you'll need a second e-mail address (for example, another mailbox from your ISP, or a free Yahoo or Hotmail account). Once you've exhausted the allowance, you know you're done for the month.—CB

adding a Kind heading, you can quickly differentiate uncompressed AIFF and WAV files from uncompressed MP3 and AAC files, as well as purchased iTunes Music Store songs from home-encoded AAC files. Enabling the Date Added option and clicking on the heading will show you recent additions to your iTunes Library.

Maintain Multiple Libraries OS X was designed so that many people could share a single computer and still maintain individual work environments. The fly in the ointment is that two users of the same computer may want to listen to a single collection of tunes, but because of OS X's permissions scheme, each person is locked out of the Music folders of other users. To work around this limitation, you simply need to relocate the iTunes Music Folder in an area accessible to all users. Here's how it works.

Each person who wants to share his or her iTunes Music Library moves the iTunes Music folder that's inside his or her Music folder to the Public folder. Launch iTunes, select Preferences from the iTunes menu, and click on the Advanced tab. Click on the Change button, select the new location of the iTunes Music folder (the Public folder), and click on OK to dismiss the Preferences window.

To enjoy another user's music, launch iTunes, select Preferences from the iTunes menu, click on the Advanced tab, disable the Copy Files To iTunes Music Folder When Adding To Library option, and click on OK to dismiss the window. Now choose Add To Library from iTunes' File menu and, in the Add To

Alternative Music Formats

Beyond MP3 Several bands, including Phish, sell their concerts as MP3 or FLAC files (top), and with xACT, you can convert them to AIFF files for burning, or compress your own tunes (bottom).

MP3, AAC, and OGG files are great because they are small, but they use lossy compression. AIFF and WAV files are prized for their CD-quality sound, but they take up a lot of room on a hard drive. If you're looking for a middle ground, take a gander at some other audio codecs gaining popularity: SHN (Shorten), FLAC (Free Lossless Audio Codec), and APE (Monkey's Audio).

These file formats all utilize lossless compression, which means that they don't throw out musical data in order to achieve smaller sizes—they're just like StuffIt or Zip archives, but they're designed specifically for music. The files are bigger than most of what you'll find in your iTunes Library—about half the size of AIFF files, or around 5MB per minute—but are musically indistinguishable from standard audio-CD files.

For that reason, SHN and FLAC are being used extensively for online music trading of live concerts from bands, such as moe and the Grateful Dead, that allow fans to tape their shows. Thousands of such recordings are available as free downloads from the nonprofit Internet Archive (www.archive.org). And bands including Phish (www.livephish.com), Steve Kimock Band (www.digitalsoundboard.net), Primus (www.primuslive.com), and Metallica (www.livemetallica.com) are selling downloadable soundboard recordings of many of their concerts, in both MP3 and FLAC (the latter format costs a few dollars more, mostly because the file sizes are larger and download times are greater). Eight-string jazz guitar artist Charlie Hunter (www.charliehunter.com), whose live performances are freely traded, is also selling three of his studio albums as MP3 or FLAC digital downloads.

If you're interested in encoding or decoding any of these formats, download Scott Brown's xACT (X Audio Compression Toolkit) 1.3, a free GUI for the Shorten, FLAC, and APE command-line tools (available at http://etree.org). Neither iTunes nor the iPod can play any of these formats, but Slim Devices' Squeezebox can stream FLAC, along with many other formats. The now defunct Subband Software is giving away its shareware music player MacAmp Lite X (find.macworld.com/0004). Download the 1.5b version (which includes plug-ins for playing SHN and FLAC files), and enter the registration codes listed on the site. The free MPlayer OS X (★★★½; *Mac Gems,* February 2004; http://mplayerosx.sourceforge.net) and VLC Media Player 0.7.1a (★★★★; "More Mac Software Bargains," May 2003; www.videolan.org) can also play FLAC files. And of course, using xACT, you can decode any of the mentioned lossless formats to AIFF or WAV, to burn to a CD or compress with iTunes.—JONATHAN SEFF

iTunes Add-Ons

iTunes includes most of the features people need for encoding, organizing, and playing music. But anyone who has run a search on iTunes at VersionTracker.com knows there are a host of utilities and add-ons that extend the iTunes experience. Here are some of our favorites:

- Wincent Colaiuta's $5 **Synergy 1.0a8** (4½; "More Mac Software Bargains," May 2003; http://synergy.wincent.com) places iTunes playback controls in the menu bar; provides systemwide hot keys; and adds a fading, translucent display for track information.
- Infinity-to-the-Power-of-Infinity's free (donations accepted) **iChatStatus 1.2.1** (www.ittpoi.com) dynamically changes your iChat status to reflect whatever you're currently playing in iTunes—a type of musical voyeurism.
- Jay Tuley's free **iEatBrainz 1.0b5** (http://homepage.mac.com/jbtule/software.html) accesses the MusicBrainz Web site (http://musicbrainz.org) to fix poorly tagged MP3 and AAC files in your iTunes Library, using acoustic matching.
- Yoel Inbar's free (donations accepted) **Fetch Art for iTunes 1.1** (http://staff.washington.edu/yoel/fetchart/) uses Amazon.com's vast library of album covers to download and add cover art to your iTunes songs.
- Sprote Rsrch.'s free **Clutter 1.0d14** (www.sprote.com) creates draggable desktop CD covers for your iTunes albums. Double-click on one, and that album begins to play.
- Visualizer plug-ins such as SoundSpectrum's **WhiteCap 4.5.8** and **G-Force 2.5.3** (http://soundspectrum.com), **Volcano Kit iTunes Visualizer 1.0.2** (www.volcanokit.com), MacZoop's **LED Spectrum Analyzer for iTunes 2.0.3**, and **ArKaos Visualizer 1.5.4** (www.arkaos.net) are free ways to add visual spice to your iTunes experience—especially when you're sick of the visualizer Apple includes. If you don't have installers, just open your user folder, go to Library: iTunes: iTunes Plug-ins, and then drop them in that folder.
- Chaotic Software's $25 **MP3 Rage 5.8.1** (4½; *Mac Gems*, April 2003) is an ideal tool for people with large MP3 collections. It helps you look up and fix improper ID3 tag data, rename files based on that data, look up lyrics and album covers, find duplicates, create a catalog file (to use with a database program), move and reorganize files, and more.

Picture This iTunes plug-ins such as ArKaos Visualizer let you see the music.

- A cross between iEatBrainz and Fetch Art for iTunes, LairWare's $20 **MPFreaker 1.0b5** (www.lairware.com) helps find artwork and missing tag information from around the Net. It works with MP3 and AAC files, and it can read iTunes playlists directly.
- Octiv's $20 **Volume Logic** plug-in digitally remasters your iTunes music in real time, improving the sound quality and evening out the volume between songs. Just turn off Sound Check and turn iTunes' volume up to maximum; then let Volume Logic handle all of iTunes' musical output.—JS

Library dialog box, navigate to another user's Public folder. Select the iTunes Music folder within that folder and click on Open. This adds the music from the Public folder to your iTunes Music Library.

You can perform the same trick with mounted network volumes. Should you unmount such a volume and then attempt to play a song stored on it, you'll be prompted to log in to that volume.

If you'd like to maintain multiple music libraries on your Mac—one on your internal drive and another on a removable drive, for example—Doug Adams provides the means, with his $5 iTunes Library Manager (www.malcolmadams.com/itunes/itinfo/ituneslibrarymanager.php). This AppleScript applet creates backup copies of your iTunes 4 Library database file, so you can save and load different music libraries. This can also be helpful if you notice iTunes slowing down when you're dealing with a very large library.

Automated Organization Speaking of Doug Adams, he offers a horde of other helpful iTunes and iPod AppleScripts on his Web site, Doug's AppleScripts for iTunes (www.malcolmadams.com/itunes). In addition to the aforementioned iTunes Library Manager, you'll find scripts for corralling duplicate files in your iTunes Music Library, converting files from one audio format to another, and locating album art on the Web that you can then paste into iTunes. Many of these scripts are free, and nearly all of them are worth downloading.—CHRISTOPHER BREEN

continues

▶ MORE MUSIC IN THIS ISSUE

Looking for an MP3 player with features the iPod lacks—such as an FM radio, a built-in voice recorder, or a lower price? Check out our review of flash-memory MP3 players (page 32). And read this month's *Mobile Mac* to learn about playing your digital music in your car (page 82).

RELEASE THE SOUNDS

You've ripped your CDs to MP3 and AAC files. You've purchased songs from the iTunes Music Store. Your iPod is overflowing with tunes. It's probably safe to say that you're captivated by the allure of digital music. So you'll be thrilled to discover that inside your Mac rages the heart of a bass-thumping, teeth-rattling sound system. Your iPod can share its sweet sounds beyond your ears. With the right speakers and enhancements, you can integrate your Mac or iPod into your sound system—or just as easily send your stereo to the consumer-electronics graveyard.

Musical Mac

You've got tons of music on your Mac. If it's truly at the center of your digital hub, it's time to put your Mac to good sonic use—either as a stereo component or as a musical powerhouse unto itself.

The Speaker Connection Macs have either one built-in speaker or two, depending on the model—but those speakers can make Jimi Hendrix sound as though he were playing a ukulele. Any Mac laptop or desktop can easily connect to external speakers via the line-out jack on your Mac. Unlike the speakers attached to your home stereo, which draw their power from the amplifier, computer speakers are powered—they run off a power plug or batteries, and they include their own amplification.

Since most of the music you're likely to play consists of standard stereo (two-channel) files, you can avoid costlier surround-sound setups and look for a 2.1 system—that is, a left and a right speaker, along with a subwoofer (the .1 part) that handles the low frequencies, or bass. Klipsch's $150 ProMedia GMX A-2.1 (www.klipsch.com) and Harman Kardon's $200 SoundSticks II (www.harman-multimedia.com) are some examples.

You may decide to purchase a multichannel speaker system—because you also watch DVDs on your Mac and would like to enjoy the surround-sound capabilities built into Panther's DVD Player app, for example. Klipsch sells several other ProMedia configurations, including the $250 ProMedia GMX D-5.1 and $400 ProMedia Ultra 5.1; JBL (www.harman-multimedia.com) sells the $180 Invader 4.1 channel system; and there are more. (Keep in mind that no Mac games currently support multichannel audio.)

If you want to get rid of the ties that bind—the wires that connect your speakers to your computer—check out cordless systems such as RCA's $150 WSP150 (www.rca.com), Acoustic Research's $180 AW871 (www.bestbuy.com or other online retailers), or Sony's single-speaker $180 SRS-RF90RK (www.sonystyle.com). All use 900MHz radio frequencies to send music from a base (connected to your Mac via line out) to wireless speakers, with ranges varying from 125 to 300 feet.

Since speaker quality can be very subjective, it's best to go to a store where you can listen to potential purchases—preferably with the types of music you typically listen to, and in a quiet, representative environment—before you buy.

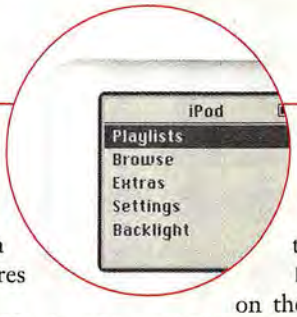
The ProSpeaker Option Owners of G4 iMacs and some Power Mac G4 models probably know about the ProSpeaker port next to the headphone jack, which allows you to hook up the Apple Pro Speakers ($59; included with the iMac). What you may not have known is that you can use that port to attach that extra pair of speakers you have gathering dust in a closet somewhere. With Griffin Technology's $25 ProSpeaker Breakout Cable (www.griffintechnology.com), you can connect your regular, unpowered speakers to your Mac with standard speaker wire.

Extra Power As mentioned previously, all Macs can send two channels of music out via the line-out jack. Most models support 16-bit audio (used for CD, MP3, and AAC files). The Power Mac G5, iMac G4, and 15- and 17-inch PowerBooks support 24-bit audio, which can produce better depth and create a rich, full sound when pumped through a great pair of speakers.

If you've got 24-bit envy or want more than just stereo output, you have options. M-Audio's $120 Revolution 7.1 PCI card (www.m-audio.com) offers 24-bit support, and it can output to as many as seven speakers and a subwoofer. This arrangement is known as Dolby Digital EX, the next generation of Dolby digital sound; it includes two speakers more than a 5.1-channel setup. People with iMacs, PowerBooks, or iBooks (Macs without PCI slots) can get similar benefits from USB devices such as M-Audio's $120 bus-powered Sonica Theater. Both products can produce virtual surround sound from standard stereo music.

Wired to Stereo While your Mac can function as the center of a great sound system, it can also integrate into your existing home theater or stereo system, giving you a component with great versatility.

You can send any sound on your Mac to the stereo simply by connecting a Y-cable (the kind with a stereo minijack on one end and two RCA plugs on the other) from your Mac to a spare input on your stereo receiver (as long as it's not phono, which has extra amplification and can't handle the full range of frequencies that



modern music will try to cram through). A wide range of Y-cables is available, from Monster's $30 iCable for iPod (www.monstercable.com) to a $3 version available at electronics stores such as Radio Shack.

You can also use a PCI, USB, or FireWire interface for sound output. These tend to provide better sound, since they are dedicated to audio and usually have higher-quality parts.

The Power Mac G5 is the first Mac to include built-in digital-audio input and output. If you have a stereo receiver with an S/PDIF (Sony/Philips Digital Interface) optical input (also known as Toslink), you can connect an optical cable from your Mac to the receiver, and your sound stays digital all the way.

A Smarter Way Although you can simply connect your Mac directly to a stereo, you still have to access and control the music from the Mac, which is not exactly convenient, to say the least.

One of the coolest ways to integrate your Mac with your stereo is via networked music-playing hardware such as Slim Device's Squeezebox (★★★★; April 2004; wired, $249; wireless, $299; www.slimdevices.com). The Squeezebox attaches to your Ethernet or 802.11 wireless network and lets you stream various music formats, as well as MP3 Internet radio, to your stereo with analog or digital cables. With the server software running on your Mac, the Squeezebox lets you control your music with a remote. Two versions of the Roku Soundbridge ($250 and $500; www.rokulabs.com)—similar to the Squeezebox, but without wireless capabilities—should be shipping by the time you read this.

Remember, if all you want to do is share your music on your home network, you don't need to buy additional hardware (see "Mini Music Server").

Portable Pod

The iPod is one of the best things to happen to digital music—but let's face it, using it can be rather antisocial. Sticking tiny earphones in your ears is a solitary endeavor; you can't exactly share the sounds in your head with the rest of the party. But you can set the music free.

Direct to Speakers The headphone port on the iPod and the line-out port on iPod docks act just like those on your Mac—accordingly, any speakers that you can attach to a Mac with a mini-jack connector, you can use with the iPod. With a dedicated set of powered speakers, you can easily carry thousands of songs to any room of the house—so there's no need to buy a second stereo.

If you're looking for speakers made just for the iPod, check out Alec Lansing's $150 inMotion (★★★★; April 2004). Plop your newer iPod into the docking station between the two speakers, or connect your first-generation iPod via the auxiliary input jack, and you're in business for a small space—such as the kitchen, where you can listen as you make breakfast.

The Stereo Hookup As with speakers, you can use a Y-cable to connect your iPod to a stereo receiver anywhere you have one. If you want to integrate the iPod with your home stereo even further, take a look at TEN Technology's $50 naviPod (www.tentechnology.com) for third-generation iPods. Plug your iPod into the naviPod, connect it to your stereo, and place it somewhere visible. Then sit back on the couch and use the included five-key infrared remote for playback, volume, and track control.

To escape wire tethers, just beam the music from your iPod to your stereo. Lots of people already use radio transmitters such as Griffin Technology's $35 iTrip in the car when cassette adapters are not a viable option. But why should transmitters be limited to the road? These RF (Radio Frequency) gadgets connect to the iPod and broadcast to a specified station of your radio, so if you've got an FM radio at home, there's no reason not to use your transmitter inside, too.—MICHAEL GOWAN

continues

Mini Music Server

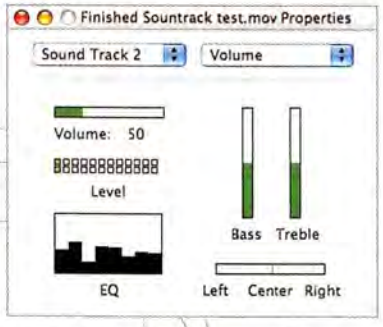
If you're running iTunes 4.01 or later, you've already got powerful music-sharing software installed. iTunes lets computers on the same network make their libraries available to everyone else—even Windows iTunes computers. This feature is easy to use: just click on the Sharing tab in iTunes' preferences and select the Share My Music option to spread the joy of music around your networked home. This works with your everyday Mac, or you can store your music on an older computer you have sitting around (even a PC) and use it as a server.

To share music outside your network—to listen to your home iTunes songs at work, for example—there's another option. Download and install Slim Devices' free SlimServer 5 software (www.slimdevices.com), the same app that powers the Squeezebox. The server software uses iTunes' XML data to create a Web page with song information and playlists, from which you choose what to listen to. Set it up, and then use any application that supports streaming (such as iTunes and QuickTime, to name a few) to enjoy your music from anywhere. For more information, visit find.macworld.com/0005.—MG

Stream Away You choose your playlists and control Slim Server via its Web interface; then you can stream the resulting audio through iTunes.

BUILD TO ORDER

Even if you've never picked up an instrument or don't know middle C from a hole in the ground, GarageBand's built-in loops make the application both fun and useful for making music. For example, GarageBand is a fine tool for creating iMovie soundtracks. One problem you're sure to run into, though, is that the app doesn't include a way to cut your piece to the exact length of your video. Sure, you could fade out the soundtrack, but wouldn't you prefer to have it stop at exactly the moment your clip fades to black? With the help of Apple's $30 QuickTime Pro (included with many of Apple's pro apps), you can make your soundtrack do just that.



Sound Advice Mix your movie's audio tracks within QuickTime Player Pro.

1. Create Your Movie Once you've edited your movie, note its length, which appears in iMovie's title bar.

2. Export Your Movie Save your work as a QuickTime movie, using iMovie 4's Share command.

3. Run the Numbers To make your music fit, you need to know how many measures it takes to fill the time of your movie. By default, GarageBand creates files with a time signature of 4/4 (meaning that each measure of music contains four beats) and 120 beats per minute (bpm). To determine the number of measures per minute in a 4/4 piece, simply divide the bpm by four—120 divided by 4 equals 30 measures per minute, or 2 beats per second.

To give your soundtrack a natural feel, you shouldn't cut off the soundtrack in the middle of a musical phrase—which in GarageBand is usually four measures long. Therefore, your soundtrack should finish at a measure that is a multiple of four—at the end of measure 28, 32, or 36, for example.

If you want to be terribly exacting about this, you could alter the bpm setting so that GarageBand generates measures that are a multiple of four every minute. To do so, take the number of measures you want and multiply it by four to determine the bpm. For example, 24 measures multiplied by 4 beats per measure equals a bpm setting of 96. For our purposes, however, simply create a piece that ends within a few seconds of the length of the movie.

4. Create and Export Your Soundtrack Assemble your musical masterpiece and select Export To iTunes from GarageBand's File menu.

5. Launch iTunes and Locate the Soundtrack Select your exported GarageBand soundtrack in the iTunes Library and choose Show Song File from the File menu (or control-click on the file name to bring up a contextual menu with the same option). In the resulting window, drag the file to the Desktop.

6. Put It All Together Piece the movie and sound files together in QuickTime Player Pro. Launch QuickTime Pro and open both your movie and your soundtrack files. Select the soundtrack and press ⌘-A to select its contents. Now press ⌘-C to copy it.

Click on the movie you made in iMovie and choose Add Scaled from the Edit menu. This pastes the soundtrack into the movie and stretches or shrinks it to fit the video's length. This will change the soundtrack's pitch, but if the video and soundtrack are close in length, you shouldn't hear a noticeable difference.

7. Mix the Volume If the soundtrack's audio is too loud, you can adjust its volume. Select the movie, press ⌘-J to bring up the movie's Properties window, and choose Sound Track 2 from the window's first pop-up menu and Volume from the second one. Move the Volume slider up or down (see "Sound Advice").

8. Save Your Movie Choose Save As from QuickTime's File menu. In the resulting Save dialog box, enable the Make Movie Self-Contained option and click on Save.—CB

Contributing Editor CHRISTOPHER BREEN is the author of *Secrets of the iPod*, fourth edition (Peachpit Press, 2004). MICHAEL GOWAN writes about technology, music, and (often) both at the same time.

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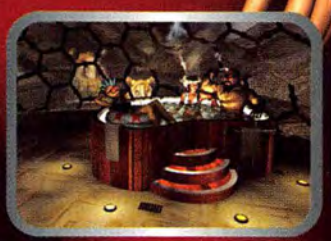
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From VHS to DVD

Give New Life to Old Movies

By Jim Heid

Photo-Illustration by Peter Belanger

SOMEWHERE IN YOUR HOUSE IS A DRAWER FULL OF VIDEOTAPES—aging home movies shot with a big, bulky camcorder that may not even work anymore. You haven't watched these movies in years, but all this talk about the digital hub and iLife has got you thinking, "Why not transfer those old videos to the Mac and burn them to DVDs?"

Good thinking. Videotapes deteriorate over time. Heat, humidity, and improper storage take their toll on tapes, decaying the magnetic particles that represent your child's first steps. By digitizing that old footage now, you can effectively stop the deterioration in its tracks.

Better still, if you own Apple's iLife suite and a SuperDrive-equipped Mac, you can use iMovie and iDVD to enhance and share your footage for all to enjoy. You can cut the scenes that seemed important then but are snooze-inducing now, add music and narration, create chapter markers to allow fast access to important scenes, and then burn it all to multiple DVDs, so that everyone in the family can have a copy.

Transferring old film and video to DVD can be a time-consuming process—but it's well worth the effort. This step-by-step guide will show you how to get set up and what to do with the movies once they're on your Mac. >>

TRANSFERRING FILM AND OTHER RELICS

If your family memories are preserved on film rather than on videotape, you'll need a little extra help getting them into iMovie and onto a DVD.

One low-budget option is to project the movies onto a wall or screen and use a tripod-mounted video camera to record the image as the movie plays. However, I don't recommend this. In most cases, the resulting footage suffers from severe flickering and poor color balance.

The best way to transfer film is to send it to a professional transfer service that uses *telecine* or *film chain* equipment, which more accurately preserves the color and picture quality of your footage. Most services will clean and condition your old film before transferring it, to restore as much of its original beauty as possible. Some companies even offer transfer services for obsolete video formats, such as Betamax.

I sent some old 8mm movies to Novato Video Transfer (www.novatovideotransfer.com) in Novato, California, and I got great results. The company charges 20 cents per foot, with a $40 minimum setup charge—a fairly typical fee for this type of job.

Some companies offer to transfer movies directly to DVD discs. Avoid this option if you want to edit your old footage. Instead, have your movies transferred to MiniDV tape and then use a camcorder to bring that footage into the Mac.

STEP 1

Set Up Your Transfer Station

Before you can transfer footage from an old videotape to your Mac, you'll have to convert the tape's analog signal into digital data that iMovie can use. Here's your equipment list:

A Video Deck The first thing you need is a VCR or a camcorder that can play back your original tapes. If your VCR is showing its age—for example, if it suffers from poor playback or frequent tracking problems—consider springing for a new one. The improvement in video quality will be worth the investment. If possible, get a VCR that supports S-Video output; this option is more expensive, but it produces a sharper picture than the alternative, composite video.

If your tapes are in an obsolete format, such as Betamax, and if your old camcorder no longer works, you can try looking for a replacement on eBay. However, you'll get better results by sending your tapes to a professional transfer service (see "Transferring Film and Other Relics"). Have the tapes transferred to MiniDV format, and then use a MiniDV camcorder to import the footage into your Mac.

Digitizing Hardware You also need a device that can convert the analog signal coming from your VCR or old camcorder into digital data. You have two options here: a MiniDV camcorder or an analog-to-DV converter box.

Most current MiniDV camcorders offer a *pass-through* mode, which converts incoming analog video into digital data, and then transfers that data to your Mac via a FireWire cable. (For a diagram of this setup, see "Making the Connection.")

You'll probably have to adjust some menu settings to access your camcorder's pass-through mode. On many Canon camcorders, for example, you must open the VCR menu and turn on the AV To DV Out setting. In some cases, you may also have to remove the camcorder's MiniDV cassette. Check your camera's manual for specific instructions.

If your MiniDV camcorder doesn't provide a pass-through mode, you can still use it. Simply dub your old tapes onto the camcorder's MiniDV tape, and then import the MiniDV footage into your Mac. This process takes longer than just converting the data—you have to copy the entire tape before you can even begin importing footage—but it offers a significant advantage. When you're done, you'll have a complete MiniDV backup of your original tape. And because you have a digital backup of your footage, you can be more selective when importing scenes from your movie. If you decide you want to add more footage later, you can simply import it from the MiniDV tape rather than reconnect your entire transfer station.

If you don't own a MiniDV camcorder, your second option is to purchase an analog-to-DV converter such as the $199 Datavideo DAC-100 (●●●●½). This standalone device mimics a camcorder's pass-through mode but costs significantly less than a MiniDV camcorder. (For a review of DV converters, including the DAC-100, see page 44.)

An Extra Hard Drive The last thing you'll need is a place to store your digital data. Digital video inhales disk space at a rate of about 200MB per minute. This means you'll need around 12GB of space for every hour of footage you import. If you don't have that much space to spare, consider purchasing an additional hard drive. My advice: think *big*. A 200GB external FireWire hard drive costs less than $300 and will give you enough room for hours of video. It also serves as an excellent archival medium for completed projects.

MAKING THE CONNECTION

To import the footage from old videotapes into your Mac, you'll need a MiniDV camcorder with pass-through features or an analog-to-digital converter. To set up your transfer station, connect your VCR's video output Ⓐ to the video input of your camcorder or converter box. If your hardware supports an S-Video connection, use that instead of composite video.

Next, run audio cables from your VCR's audio outputs to the audio inputs of your camcorder or converter box Ⓑ. Finally, connect the camcorder's or converter box's FireWire jack to the FireWire jack on your Mac Ⓒ. If you're using a MiniDV camcorder to convert your video, you may need to adjust a menu setting to activate its pass-through features. Once everything is connected, turn on each device, open a new iMovie project, and begin importing your footage.

ILLUSTRATIONS BY TERRY PACZKO

STEP 2
Prepare for Import

Videotape is a relatively fragile medium. Any irregularity in temperature or reel tension can cause playback problems or, worse, damage the tape. So before you press the play button on your VCR and begin importing footage, make sure your videotape is in the best possible condition.

Acclimate Your Tapes If you've stored your videotapes in an unusually hot or cold environment—such as an attic or an unheated closet—bring them into the room where you'll be working and let them sit for a few hours. Large swings in humidity or temperature can cause moisture to condense within a videocassette. And playing a tape in that state could damage it and your VCR.

Also avoid embarking on a video project if the weather is humid and the room you're working in isn't air-conditioned. In high humidity, videotape tends to adhere to a VCR's spinning heads. The extra friction can cause the tape and the heads to wear out prematurely.

Shuttle Your Tapes Once you've acclimated a tape, fast-forward it to the end and then rewind it to the beginning. This process, called *stacking*, exercises the videocassette mechanism and restores tension on the tape reels, alleviating some of the problems with aging videotape.

Check Your Tracking You're likely to run into tracking problems when working with aging videotapes and VCRs. These picture and sound distortions occur when the VCR's heads fail to read the critical *control track* located along one edge of the tape. Before you begin importing video, play a few minutes of your tape and adjust your VCR's tracking feature to optimize playback quality.

STEP 3
Import Your Video

You're now ready to begin the transfer process. Open iMovie and create a new project for your imported footage. By default, iMovie stores projects in the Movies folder. If you want to save disk space by storing your footage on an external hard drive, then save your iMovie project on that drive. You can import all the footage into one iMovie project. But if your videotape contains a mishmash of events, creating separate projects for each type of footage may make more sense—separating your vacation footage from holiday gatherings, for example (see "Developing an Import Strategy").

Switch to iMovie's Import mode by clicking on the camera icon located under the Monitor. When you're ready, press the play button on your VCR or camcorder. As the tape plays, you can watch the footage in the Monitor. When you come to a part you want to capture for your movie, click on iMovie's Import button or press the spacebar. Click on it a second time (or press the spacebar again) to stop importing.

Managing Your Space If some of the video footage is useless—for example, blurry images shot through a moving car's windshield—you can save disk space by not importing it. But don't be too selective. I recommend erring on the safe side by importing even those scenes that don't seem especially interesting. Times and people change—a scene that seems mundane today may be utterly priceless tomorrow. If you don't import it now, there's a good chance you never will.

Controlling Your Clips iMovie limits the file size of each individual clip to 2GB—which translates to exactly 9 minutes and 28 seconds of footage. If you simply let your tape play while importing, iMovie will automatically create a new clip each time this limit is reached—regardless of whether that happens in the middle of a conversation or at a convenient scene break. You won't loose any footage when the new clip is made, but you'll need to piece the individual clips back together in iMovie's timeline to regain the scene's continuity.

You can make the editing process easier by deciding for yourself where each clip begins and ends. For example, you may prefer to put each scene in its own clip, even if it includes only a minute or two of footage. This approach lets you break up the action more naturally, so it's easier to reorganize your scenes later.

Dealing with Scan Lines As you import video into iMovie, you'll notice a thin band of scan lines at the very bottom of the video frame. Don't worry about it. Because TV sets crop off the outer edges of a video frame, these scan lines won't appear when you play your DVD back on a TV set.

DEVELOPING AN IMPORT STRATEGY

If your home-movie tapes are anything like mine, they probably contain a grab bag of footage spanning several months or even years. Before you begin importing, take a few minutes to plan out how you'll organize this diverse video footage. Developing a clear strategy now may prevent frustration when it's time to create your DVD.

First, consider how you want to present the movies on your finished DVD. For example, if you're going to include several different events on the same DVD, you may want to give each event its own DVD-menu button. In this case, you'll create a separate iMovie project for each event.

On the other hand, if you prefer to group similar events—to include several years' worth of family vacations on a single DVD, for example—you might be better off importing all your vacation footage into one iMovie project and then using chapter markers to provide convenient access to individual trips. This method requires fewer individual iMovie projects; however, DVD viewers will have to navigate through two menus—first selecting the iMovie project and then selecting an individual chapter within the project—before they can watch a movie.

Admittedly, dividing your videotape footage between multiple iMovie projects can be labor intensive. If you'd rather dump your old footage into one iMovie project and then sort things out later, you can. Just note that this approach can make editing the video and creating a DVD more cumbersome. For example, if you want part of a movie to have its own DVD menu, you'll need to export that footage and then import it into a new iMovie project.

They will be visible, however, if viewers watch your DVD on their computers. If you anticipate this happening, you may want to consider cropping out those scan lines. Stupendous Software makes a free iMovie plug-in that crops your video frames (www.stupendous-software.com). But be aware that when you apply cropping, iMovie must re-render every frame of the video. This process not only takes a lot of time but also doubles the amount of disk space required for your project.

STEP 4
Edit Your Movie

Once you've imported all your clips, you can use iMovie's editing tools to slim down and enhance your original footage. This is your opportunity to go beyond simply preserving old footage, and to take a fresh look at the recorded events. With the help of titles, transitions, chapter markers, music, photos, and more, the possibilities for editing are almost limitless. Here are a few pointers to consider as you work:

Limit Bad Video Analog video tends to contain a lot of noise—faint snowy fuzz that degrades picture quality. Video noise makes your movie look bad, and it encodes poorly—causing the footage on your finished DVD to look blocky. It's especially troublesome in low-light scenes, such as shots taken indoors or around a campfire.

When importing your video, use an S-Video cable and a VCR that's in good condition, to minimize these encoding artifacts. If your footage contains a lot of dark, noisy scenes, limit the length of video on a DVD to under one hour, so iDVD can encode the footage at a higher bit rate and minimize compression.

Split Your Clips The first thing you'll want to do when editing is remove any bad footage—jerky camera movements, out-of-focus shots, and so on.

In iMovie 4, you can adjust the beginning or ending of a clip simply by dragging its edges inward. Later, if you decide you want to regain some of that footage, you can pull the edges of the clip outward to restore them.

To remove a bad shot from the *middle* of a clip—or to edit clips in earlier versions of iMovie—drag the clip to iMovie's timeline, position the playhead at the beginning of the offending shot, and then choose Split Video Clip At Playhead from the Edit menu. (This command is also useful for breaking up one long clip into several smaller ones.) Next, move the playhead to the last frame you want to remove and choose the command again. You should now have a single clip that contains just the unwanted shot. To send it to the cutting room floor, select it and press the delete key. Deleted scenes remain in the Trash until you empty it. However, if you think you might need the cut scene later, switch back to the clip viewer (⌘-E) and drag the scene to an empty spot in the Clips pane instead of deleting it.

Add a Soundtrack Let's face it: most home videos sound as though they'd been recorded through a tin can. You can fix that by adding a new soundtrack that complements the action.

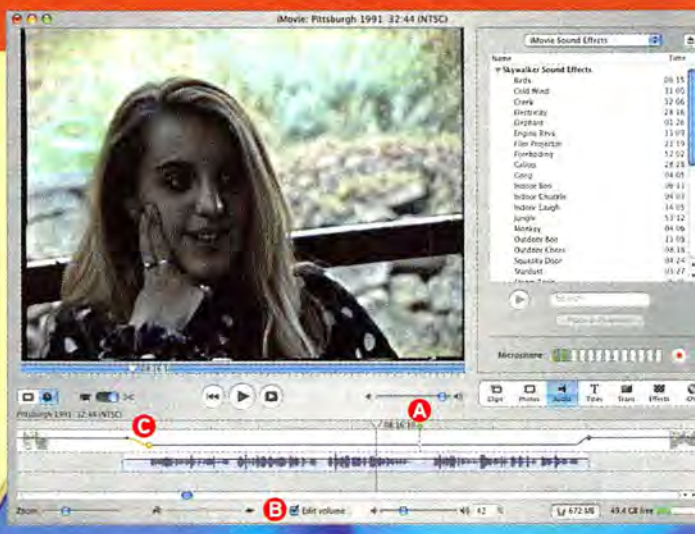
If your video's original sound consisted of nothing but wind and room noise, consider removing the sound completely and playing a song from your iTunes library instead. To mute an entire video track in iMovie, deselect the box to the right of the video track in iMovie's timeline. To mute or adjust the volume of individual clips, select the clips in the timeline and then reposition the volume slider.

Narration and commentary add a wonderful historical perspective to your old home videos. To record narration, use iMovie's Audio pane (see "Sound Practices"). If your movie features kids who are teenagers today, for example, you might want to have them comment on the footage as it

SOUND PRACTICES

By recording narration in iMovie, you can add new perspective to an old video. iMovie 4 includes some audio improvements that make recording narration even easier. The first of these is an audio-waveform view. When you turn on the Show Audio Track Waveforms option in iMovie's preference pane, iMovie displays the audio track as a waveform—giving you visual representation of the rise and fall of the recorded dialogue. This helps you better match up your narration with the action on screen. In this project, for example, I was able to synchronize the transition between two different scenes Ⓐ with a pause in the narration.

To eliminate competing dialogue, you may also want to lower the volume from your video track while the narration is playing. To do this, select the clip in the timeline and then click on the Edit Volume option Ⓑ. You'll notice a thin horizontal line running through your clip. Click on the line at the point where your narration begins Ⓒ, and drag the control point down to lower the volume. Repeat this process (but drag the control point up) at the end of the narration to return the clip's volume to its original level.



plays. Let them talk about their memories of the event and about what went on behind the scenes. You could also narrate the video yourself, talking about what it was like taking a couple of colicky kids on a cross-country road trip. (For tips on recording narration, see "Sweeten Your Sound," *Digital Hub*, December 2003.)

Sprinkle in Photos Do you have some old photos of the same event you captured on videotape? Why not add these shots to your video footage to help expand the narrative? To use old photos, scan them into your Mac, add them to iPhoto, and then import them into iMovie from the Photos pane. You can give your photos a sense of motion by using iMovie's Ken Burns effect, which mimics the documentary trick of slowly panning across a photo while zooming in or out.

Old photos can also provide a nice backdrop for iMovie titles or iDVD menus. If you have a lot of photos that complement the video, you might want to include them on the DVD as a slide show.

Add Titles and Transitions Titles and transitions give your movie professional polish and help ease viewers between disjointed scenes. If you come across dialogue that's hard to understand, create subtitles. To make sure your titles won't get cut off when played on a television, deselect the QT Margins option in iMovie's Titles pane.

Create Chapter Markers For videos that are more than a few minutes long, consider adding chapter markers via iMovie's iDVD pane. Later on, when you go to burn your DVD, iDVD will use these chapter markers to create a submenu that lets viewers quickly jump to specific scenes (see "What's on the Menu?").

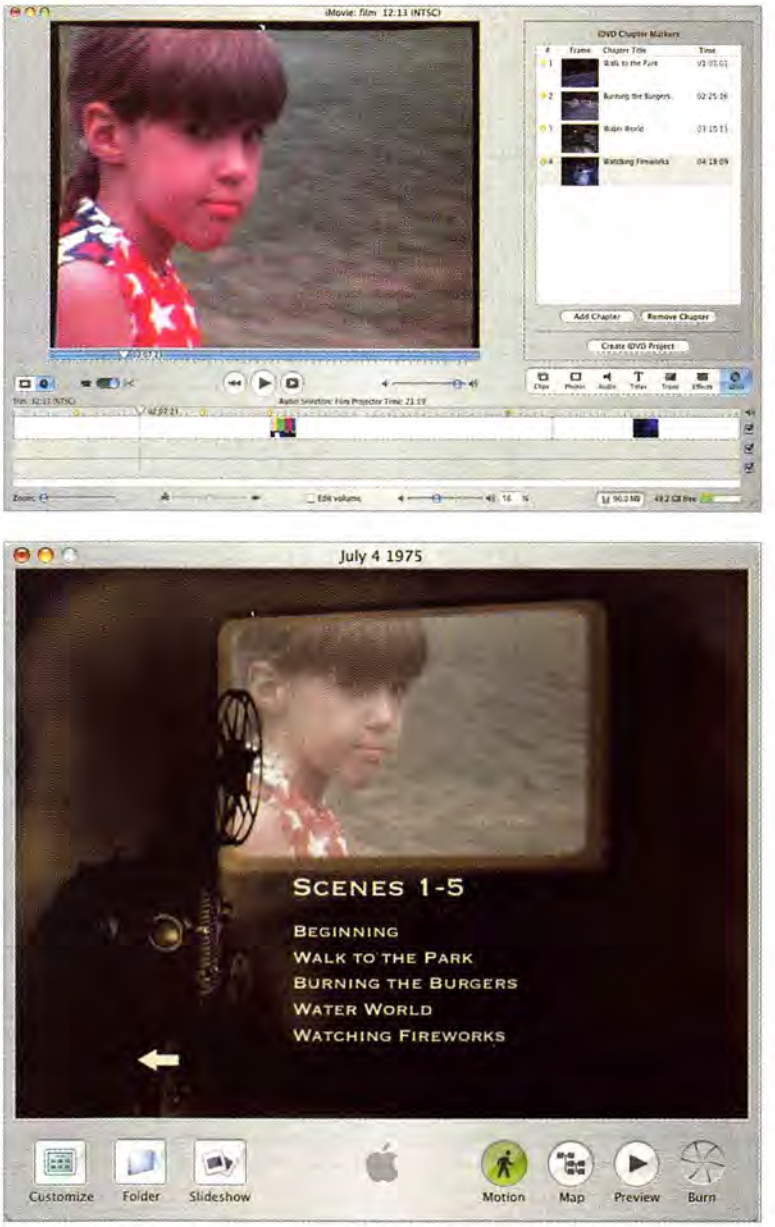
Add a chapter marker whenever a key scene begins. For a vacation video, you might add a marker at the beginning of each new destination. For a video that presents several years' worth of birthday parties, add a marker (and a title) at the beginning of each party. Your final DVD will be easier to navigate, and it will be more enjoyable to watch multiple times.

Save Some Stills Many of iDVD's menu themes contain *drop zones*—special areas into which you can drag photos or movies to customize your menu designs. If your video contains one particular scene that's representative of the entire movie—for example, a kid blowing out birthday candles—save a still from that scene to use in a drop zone.

To do so, position iMovie's playhead at the frame you'd like to save. Next, choose Save Frame As from the File menu and specify a name for the frame. Use the default JPEG format.

Save a Scene You can also place a snippet of video in an iDVD drop zone—to show the entire candle-blowing incident, for example. To use a scene from your movie in a drop zone, first save your finished iMovie project. Isolate the footage you want in its own clip, and then choose Share from the File menu. Click on the QuickTime button, and choose the Full Quality DV option. Be sure to turn on the Share Selected Clips Only option. Then click on Share and give the new movie a name.

Close the iMovie project without saving your changes. (This step preserves the clip in its original, unsplit form.) Once you're in iDVD, simply drag the short movie you just created into the drop zone.



What's on the Menu? When you click on Add Chapter in iMovie's iDVD pane, you can mark where important scenes begin (top). iDVD then uses these markers to create a submenu offering instant access to each scene (bottom).

STEP 5
Create Your DVD

When you're satisfied with your edited movies, you can transfer your finished video into iDVD, customize its menus, and then burn your finished project.

Make the Move to iDVD If you have only one iMovie project to burn, you can import it into iDVD simply by clicking on the Create iDVD Proj-

ect button in iMovie's iDVD pane. iDVD will launch and begin importing the movie. If the movie contains chapter markers, iDVD will also create a Scene Selection menu with buttons for each of the chapters.

To add more iMovie projects to your DVD, click on iDVD's Customize button. When the Customize drawer pops out from the left side of the window, click on the Media button and choose Movies from the pop-up menu. Find the movie you want to add, and then drag its thumbnail into your DVD's menu area. If you've stored your iMovie projects somewhere other than in your Movies folder—on an external hard drive, for example—you'll need to tell iDVD where to find them. Open iDVD's Movies preference pane and click on the Add button to specify the location of your files.

For best results, open your iDVD preference pane and choose the Best Quality option. iDVD lets you include as much as two hours of video on a disc. But you'll get the best image quality by limiting video to an hour or less.

Customize Your Menus iDVD includes several predesigned templates—called themes—for your DVD menus. To add one of these to your project, click on the Customize button, select Theme from the Customize drawer, and then set the Theme pop-up menu to All. Choose a theme that best represents your subject. The Projector theme, for example, is great for old movies that you've transferred from film.

If your theme contains a drop zone, add the still image that you saved from iMovie. Simply drag the image's icon from the Finder into the drop zone.

You can also use an image as the background to your iDVD menu: just press the ⌘ key as you drag the image into the menu area.

Preview and Burn When you've finished designing your DVD, click on iDVD's Preview button to test your disc. If everything checks out, double-click on the Burn button and insert a blank DVD-R.

Note that if your DVD project takes up 4GB of disk space, you'll need at least 8GB of free space (essentially, double the amount of your project) to burn the DVD. To gauge the size of your project, open the Status pane of iDVD's Customize drawer.

For reliable burns, don't use your Mac while a disc is burning. If you're burning on a PowerBook, plug the PowerBook into the wall so it won't run out of battery power.

When iDVD finishes encoding and burning your movies, it'll give you the option of burning additional discs or closing the iDVD project. Even if you're burning a DVD only for yourself, I recommend making additional copies. Discs sometimes get lost and it'd be a shame to have to do all of this again (see "Preserving Your Media").

STEP 6

Archive Your Work

Once you've finished burning your DVDs, you'll probably want to free up the hard-drive space that your project is taking up.

If you have an external FireWire hard drive, consider archiving your digital media on it. Drag the folders containing your iMovie and iDVD project files onto the hard drive, and then delete them from your system.

If you own a MiniDV camcorder, you can also use iMovie to export your edited movie back to a MiniDV tape. You won't be able to save your iDVD projects this way. But if you decide to burn additional discs later, you can reimport your completed movie into iMovie with no loss in picture quality. Another option—one that *does* let you save your iDVD projects—is the $45 DV Backup, from coolatoola (www.coolatoola.com); it lets you back up any data to a compatible DV camcorder (see "Helping Hands," *Mac Gems*, November 2003).

The Last Word

Enhancing and sharing old video or film footage can be a lot of work, especially if you take the time to edit scenes and add additional elements. But it can also be a fun and rewarding exercise—a way to relive old memories and preserve them for the future. That's what I'd call a labor of love. □

Contributing Editor JIM HEID recently created a DVD of some 8mm movie footage he shot at age 14. He's the author of *The Macintosh iLife '04* (Peachpit Press/Avondale Media, 2004) and its companion Web site, www.macilife.com.

PRESERVING YOUR MEDIA

After all the effort you've put into importing and enhancing your old movies, the last thing you want is for your DVDs to become unplayable after a few years. Alas, DVD-R discs don't last forever. To improve their reliability and longevity, don't apply peel-and-stick labels to them. These can cause a host of problems, including jamming up the DVD player, causing the disc to spin off-balance, or damaging the DVD's substrate. Instead, label the discs with permanent marker (such as a Sharpie). But keep your description brief—the solvents in permanent ink can damage a DVD's substrate over time.

Verbatim offers an interesting alternative to plain DVDs. Its Digital Movie DVD-R resembles a film reel (pictured, bottom; www.verbatim.com). For users who want to give their DVD's more panache, Epson offers a line of printers that can print directly onto the surface of a printable CD or DVD (pictured, top; www.epson.com).

Keep your burned DVDs in jewel cases, and store them in a cool, dark place. And consider stashing a couple of backups in a safe-deposit box.

And what about those old videotapes? If you're like me, you can't bear to throw them out, even if you've digitized them. To prolong their life, rewind them and store them vertically (like a book), with the full reel on the bottom. Store them in a cool, dry location. Fast-forward and then rewind the tapes once a year.

PERFECTING THE ART OF DIGITAL MEDIA.

Roku proudly introduces two network-ready media players that turn home entertainment into an art form.

The Roku HD1000 high-definition digital media player brings your high-def TV to life with digital photos, classic art and LiveArt,™ your entire music library — even DVDs you've saved to your computer. Just pop in a digital memory card, or easily connect with your Mac or PC.

The Roku SoundBridge Network Music Player plays your PC or Mac music files anywhere in the house. SoundBridge's large, bright display, sleek aluminum casing, and native iTunes® support (along with support for all major music formats) make it a winning part of any home AV system.

Roku HD1000 High-Definition Digital Media Player

Roku SoundBridge Network Music Player

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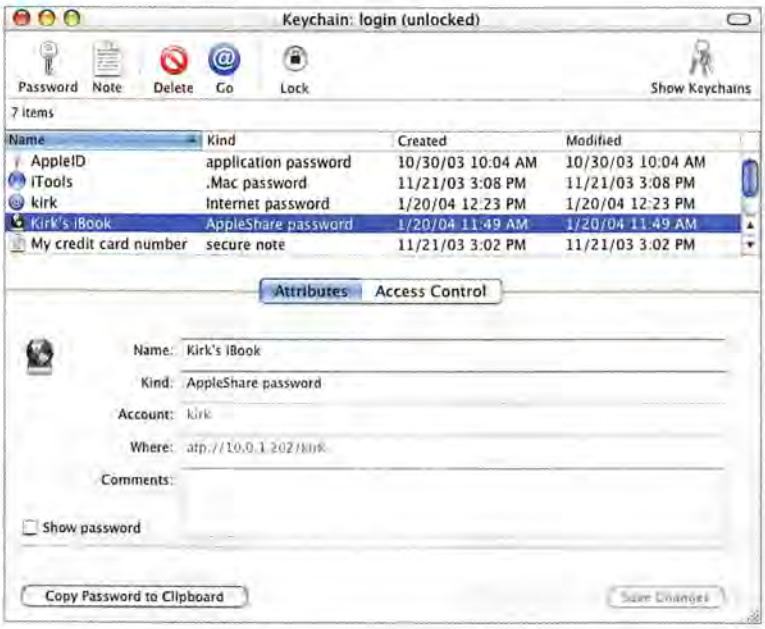
Protect Data in Panther

YOU MAY NOT BE A SECRET AGENT OR AN INVENTOR OF A product that will change the world, but you surely have documents and data on your Mac that you don't want others to see. Whether it's sensitive reports, budgets, and production plans, or passwords, credit card numbers, and PIN numbers, you need to protect your personal information from prying eyes.

Unlike OS 9's Finder, Panther (Mac OS X 10.3) has no Encrypt function to protect individual files. The FileVault function can encrypt your entire Home folder, but that's overkill for most users. (And FileVault has other problems; I don't recommend using it.)

So how do you make sure that no one else can get at your data? If you've got lots of sensitive files (and especially if you need to send them via e-mail), software such as PGP Personal 8.0 (★★★★½; April 2003) offers advanced encryption functions you can use.

But if your security needs are less pressing and you're concerned mostly about protecting your data and files on site, turn first to functions and software built into Panther: the Keychain and encrypted disk images.



Under Lock and Key Here, Keychain Access shows the contents of my Keychain: my Apple ID, my .Mac password, a password for a Web site, a network password to connect to my iBook, and a secure note containing my credit card number.

Lock the Door to Your Mac

The Keychain has been in most versions of Mac OS since System 7. In Panther, the Keychain automatically keeps track of passwords for applications, servers, and Web sites. You can also use it to defend business secrets.

To turn Keychain into your security guard, open Keychain Access (Applications: Utilities), and click on Note in the Keychain Access toolbar. Enter a descriptive title in the Name field of the window that appears, and then type or paste the data you want to protect into the Note field. You're not limited to short things, such as a password or a credit card number. I pasted several megabytes of text into one secure note.

To access your secure notes later, open Keychain Access, find the note in the list of protected items, and click on its name. Select the Show Password option and enter your password; you'll then see the note's contents. To enter the contents in another program, click on Copy Note To Clipboard, enter your password again, and paste into any text field or document.

You can store secure notes in your default Keychain, or you can create a second Keychain solely for these notes. The advantage of using a second Keychain for notes is that you can set a different password, and you can also find your notes more easily; your main Keychain may contain dozens or even hundreds of items. To make another Keychain, select New Keychain from the File menu. Enter a name and a location, and then click on Create. Finally, enter a password for the Keychain, type it again to verify it, and click on OK.

Keychain Lockdown To make your Keychain and the information in it as safe as possible, change its default settings. By default, your Keychain is named "login." The password you use to access the Keychain is the same as your login password, and the Keychain unlocks when you log in to your Mac. To give your Keychain its own password, go to the Edit menu and select Change Password For Keychain *User Name*. Change the password (to something you won't forget).

Make sure your Keychain is locked. The lock icon in the Keychain Access toolbar shows you the status of selected Keychains and items in them. To lock an open Keychain, click on the lock icon.

To change security settings for individual items in a Keychain, click on the item's name in the Keychain Access window and then click on the Access Control tab. In the resulting window, increase security by selecting the Confirm Before Allowing Access and the Ask For Keychain Password options.

Encrypt Secret Files

While you can enter a lot of text in a secure note, you can't add files to your Keychain. However, you can

encrypt files, and you can even use disk images to store them in a virtual safe.

OS X's disk images are virtual disks, stored as single files, that can hold many individual files. (You've probably seen disk images, since they often contain software and installer files for programs you download over the Internet.) You can create your own disk image that encrypts files as you add them to the disk and then decrypts them automatically when you copy them to a folder or your desktop.

To create an encrypted disk image, open Disk Utility (Applications: Utilities) and click on the New Image icon in the toolbar. In the sheet that appears, enter a name and a location for your disk image, choose a size and a format, and choose whether you want the disk image to be encrypted.

If you plan to store a few files in this disk image, choose a size of 2.5MB or 5MB; otherwise, leave room for additional files. To protect your data, choose AES-128 from the Encryption pop-up menu. This 128-bit encryption is strong enough for all but intelligence agencies. Finally, choose Read/Write Disk Image from the Format pop-up menu.

When you click on the Create button, Disk Utility shows the progress of the operation and then displays a New Password dialog box. Enter a password there and in the Verify field. Don't select the Remember Password option—you'll need to enter the password each time you want to mount the disk image, but your information will be much more secure. Click on OK.

Disk Utility mounts the disk image, and you can copy files to it immediately. As you do so, OS X encrypts your files. To use them, double-click on them inside the disk image's volume, or copy them to another folder on your Mac. When you're finished, unmount the disk image; any user with physical access to your Mac can read and copy the files when the disk image is mounted on your desktop.

Because a disk image works the same way as any other disk—a hard disk, a removable disk, or a network volume—you unmount it by clicking on the disk image's volume (not the *.dmg* file) and selecting File: Eject, or by dragging the volume to the Trash. If you want to delete the disk image itself, drag the *.dmg* file to the Trash and then empty the Trash.

Insurance for Your Sensitive Files

With the Keychain and encrypted disk images, you can protect the sensitive data on your Mac. If someone steals your iBook or PowerBook, or if you lose it, no one will be able to get at your data or files. □

KIRK McELHEARN is a freelance Mac author and journalist who lives in the French Alps. His latest book is *How to Do Everything with Mac OS X Panther* (McGraw-Hill Osborne Media, 2004).

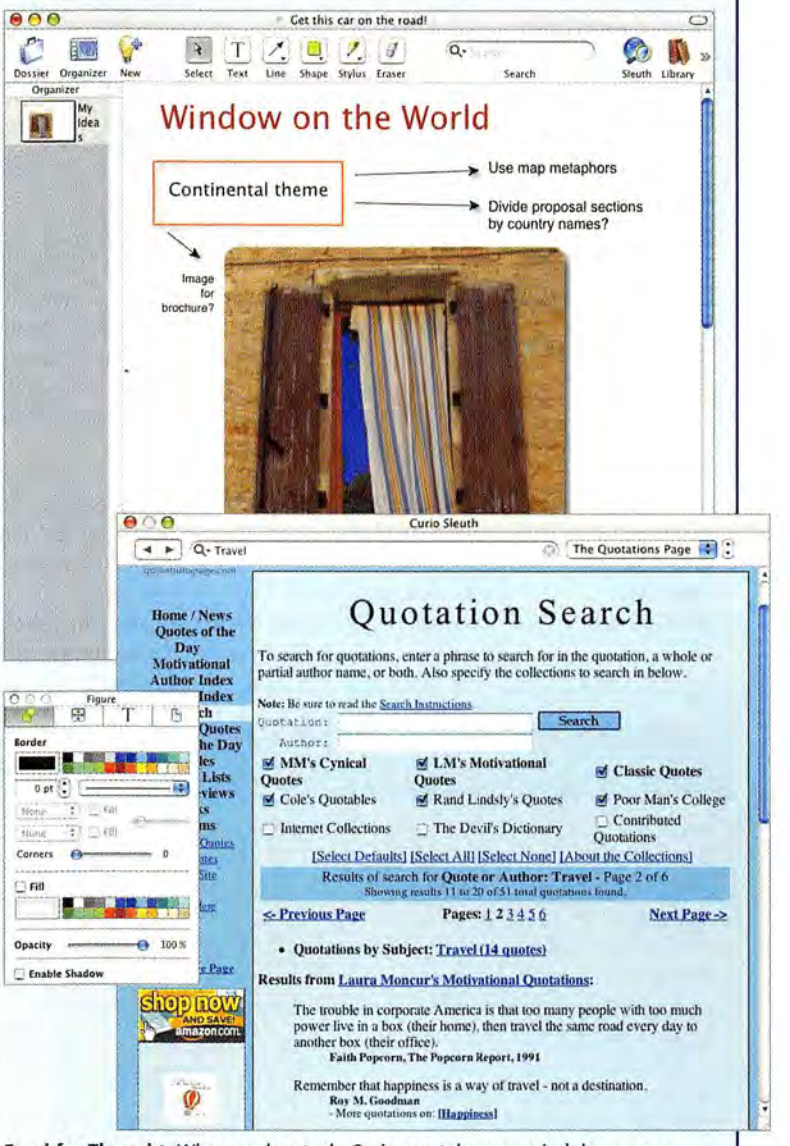
PUT ON THEIR THINKING CAPS

Your boss is asking for five proposals tomorrow, and you haven't just hit a mental roadblock—you can't even start the car. Software aimed at organizing your ideas can get you on the highway. Two new programs in this field are MindCad's Pyramid (www.mindcad.com) and Zengobi's Curio (www.zengobi.com).

In the $99 Curio 1.0, you can brainstorm using text, images, Web-site bookmarks, and movies. But if you're starting from scratch, Curio will search Web sites for relevant materials and bring them into the Curio workspace, embedding links to the originals. The program runs on OS X 10.2.7 and higher.

The $29 Pyramid 1.0 is a basic outlining tool for arranging your ideas in a tree-like structure. It's compatible with OS X 10.2 and 10.3.

There are many other applications that can stimulate your thought processes. For more information, see "Tame Your Brain," October 2003.—TERRI STONE



Food for Thought When you're stuck, Curio can take your mind down new avenues. The Curio Sleuth helps by searching the Web for relevant images, movies, and text, such as these travel-related quotations.

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.

Shoot Action Like a Pro

WHEN YOU SHOOT VIDEO, YOU'RE MOST OFTEN RECORDING action—a sporting event, actors moving through a scene, and so on. But if motion is the essence of video, why do so many home movies make viewers queasy? The answer is camcorder movement.

The key to recording good action footage lies in learning how to *hold the shot*. The subject should be moving, not the video camera. To record play on a soccer field, you obviously have to move the camcorder some. The trick is knowing *how* to move it to complement the action around you.

By the Book This article is an excerpt from Derrick Story's book *Digital Video Pocket Guide* (O'Reilly, 2003).

Shooting Sports Events

Most professionals mount their video cameras on a tripod for sports assignments. Certainly, there's no better way to steady a camcorder than to secure it to a rock-solid tripod that has a fluid head. But for most of us, carrying around a bulky tripod isn't practical—and it could be the straw that breaks our already overburdened backs.

The real-world answer is to invest in a monopod. This one-legged tripod is extremely compact and easy to transport, and it's an excellent tool for helping you properly hold your shots. Your footage will improve immediately.

If you don't have a monopod with you when shooting action sequences, hold your video camera as close to your face as you can, lock your elbows against your body, and pivot from the waist.

Framing the Action Once you steady the camcorder, you're ready to set up your shot. There are a few basic principles to framing action shots.

First, concentrate on creating entrances and exits. Anticipate the direction of the action, frame your shot, and let the subjects enter the frame. Follow them for a short period, and then let them exit the scene (see "Getting the Shot").

Once the subject enters the frame, try following her horizontal or vertical movement by panning or tilting (respectively) the camera. Mounting the camcorder on a tripod or a monopod is essential for this type of shot, because jerky movement ruins the effect. When panning, remember the 180-degree rule: Once you've begun the shot, never cross the imaginary horizontal line that marks your field of view. If you're shooting a soccer game, for example, the two goal posts are your 180-degree markers.

Zooming In The zooming range of today's consumer camcorders is nothing short of amazing. Their lenses let you get close to the action for compelling

IMPROVE OUTDOOR LIGHTING

A basic rule of lighting states that the subject should be at least as bright as the background (unless you're creating a special effect). However, even in bright sun, your model may not be illuminated as evenly as you'd like. And backgrounds always seem brighter than you want them to be.

One or two strategically placed reflectors can help you redirect the light onto the subject for better illumination. This common Hollywood practice involves mounting large reflective panels on light stands or holding reflectors and following the actor's movements with them.

Carting around large rigid panels isn't practical for most hobbyists, but having a collapsible photo disc or two tucked away in the trunk of your car can save the day. Photo discs have reflectors on both sides—usually silver, for maximum reflection, on one side and gold, to warm up skin tones, on the other. Place the reflector opposite the main light source for the best results.

If you don't want to spend a lot of money on collapsible discs, you can purchase a few sheets of white poster board from an office supply store. This option isn't quite as portable or durable, but you can buy lots and lots of poster board for the price of one collapsible disc, and it works just as well.

Lighten Up When a light disc is used to reflect natural light (bottom), the improvements are easily noticeable.

shots. But used inappropriately, they can also distract the viewer from what's happening on screen.

Rule one is to not zoom during the shot. Instead, use the zoom to frame the shot before you start recording. For example, to add zooming to the shooting technique described earlier, you would zoom the lens to frame the shot, anticipate the direction of the action, and start recording just in front of it, letting the subjects enter the frame. You'd then pan the camcorder to follow the subjects, let the action exit the scene, and then stop recording. For your next shot, you'd start the sequence over.

Adding Flavor Another trick to spicing up your action-oriented videos is to shoot cut-in and cutaway footage. You can use shots of the coach consoling a player on the sideline or of an ankle being taped to break up the action and give your movie variety.

Don't forget to grab a couple of establishing shots—wider views of the scene that you can use to give viewers a feeling for the big picture. In some cases, you might want to add a few seconds of establishing footage at the beginning of the movie to set the scene.

Most importantly, keep quiet while filming. You want to record the ambient audio of the environment, not yourself cheering for—or even worse, swearing at—the players on the field.

Tip from the Pros When you're shooting on location—at a sporting event, at the ocean, or even in a quiet room—make sure you capture a track of ambient sound. Aim the camcorder at a fixed point, and let it record the environment for a minute or two. Later, when you're in production, you can use this footage to provide consistent noise for your various scenes.

Shooting a Walking Interview

One of the most interesting ways to shoot an outdoor interview is to record the subject as he's walking. The video camera holds the interviewee steadily in the center of the frame while the background just rolls along. This technique is called *tracking*. And when it's done right, an otherwise static shot can become a vibrant scene in your production. Here's the basic setup:

Capturing Sound To avoid distracting sounds such as camcorder transport or grinding gears, capture audio through an external mike. Wireless mikes are easiest for this shot because they don't require an assistant. Booms, on the other hand, have the advantage of showing no equipment in the footage—for example, a lavaliere mike attached to the shirt collar of the subject. However, you'll need someone to hold the boom mike while you're filming.

(For more on external microphones, see "Sweeten Your Sound," *Digital Hub*, December 2003.)

Rolling Motion The key component in getting smooth walking shots is a wheelchair—often referred to as a poor man's dolly. Used wheelchairs are easy to find at secondhand shops and garage sales. It doesn't need to be fancy; it just needs to roll smoothly and fold up for easy transport. You sit on the chair (most likely on the back of the chair, with your feet on the seat) as an assistant pushes you slowly and steadily alongside the interviewee during filming.

When you're scouting locations for this type of scene, look for areas that have relatively smooth surfaces that are wide enough to accommodate a wheelchair and subject moving side-by-side about four feet apart. An interesting (but not too busy) background is important as well. Try to scout a scene at the same time of day that you're actually going to shoot it. Ideally, the sun will be illuminating the subject's face, but not shining directly in his eyes.

Tip from the Pros To limit depth of field when shooting interviews outdoors, try adding a neutral density filter that will force the aperture to open up. These filters are available in a variety of densities, usually ranging from 1 to 4 f-stops. The darker the filter, the wider the aperture, and the softer the background. If you already have a polarizing filter, that will work, too. □

Getting the Shot When shooting action shots, allow the subject to enter the frame, and then pan the video camera to follow her. Leave a comfort zone in front of the subject.

PICTURE THIS

Tired of staring at the same framed photographs? For $1,549, PhotoVu offers to alleviate your boredom, with its PV1900 (www.photovu.com). This framed and matted 19-inch LCD screen wirelessly connects to your OS X Mac, to show a rotating selection of digital photos. Just mount it on a wall or a mantle, plug it in to a nearby outlet, and then sit back and enjoy.

The PV1900 doesn't currently integrate with iPhoto—although the company says it's working on this. Instead, you turn on file sharing and control the digital frame through your Web browser.

PhotoVu offers a variety of frame styles and mat-board colors. If you don't see something you like, you can also have a custom frame created, for an additional fee.—KELLY LUNSFORD

DERRICK STORY also offers pearls of photography wisdom, in his *Digital Photography Pocket Guide*, second edition (O'Reilly, 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.

Web-Site Lockdown

AS A WEB-SITE DESIGNER, YOU'D RATHER SPEND YOUR TIME creating new sites. But because existing sites need maintenance, niggling tasks such as changing an address or adding a press release keep you from your creative pursuits. And you're afraid to off-load these small jobs on your clients, who might (innocently or not) tinker with your design.

You can prevent clients from breaking your sites while still allowing them to update content: use a combination of Macromedia's Dreamweaver MX 2004 ($399; www.macromedia.com) and Contribute 2 ($149), a program designed for people who make changes to Web sites but don't know HTML.

The first step is to take advantage of Dreamweaver's templates to define Cascading Style Sheets (CSS) and make parts of your site off-limits to your clients who use Contribute. Next, you'll employ Contribute's Site Administration controls to limit the editing freedom that clients have over remaining site elements.

Define the Field of Battle

A Dreamweaver template is a page in which you've laid out basic elements that appear on all pages made from that template. For instance, a template may have a navigation bar and places for images, headings, and body text. When you design pages for Contribute users, you must define editable and locked regions of the page. Clients with Contribute can add content to the editable regions, but when they put the pointer over a locked region (such as the navigation bar), it changes to the international symbol for no (a diagonal slash inside a circle). Contribute users can't create, delete, or edit Dreamweaver templates.

You can make a new template page from scratch, but it's often easier to turn an existing page into a template. Choose File: Save As Template, name it, and assign it to an existing site. Define the editable areas by selecting part of the page and choosing Insert: Template Objects: Editable Region.

Once you name your region, Dreamweaver surrounds it with a green border. Enter placeholder text and graphics in the editable regions. When you've defined all the editable regions, save the template to your Web server, where it will be shared by your Contribute clients.

Impose Your Style

Good Web designs include custom Cascading Style Sheets, which you define in Dreamweaver and attach to your page templates. (If you're new to CSS, see "Create Sophisticated Style Sheets," April 2002.) These styles, as well as the standard HTML styles, will appear in the Styles pop-up menu in Contribute's Editing toolbar. Contribute users can then apply those styles to text they enter. There are several things you should do to make CSS styles more useful for your site contributors.

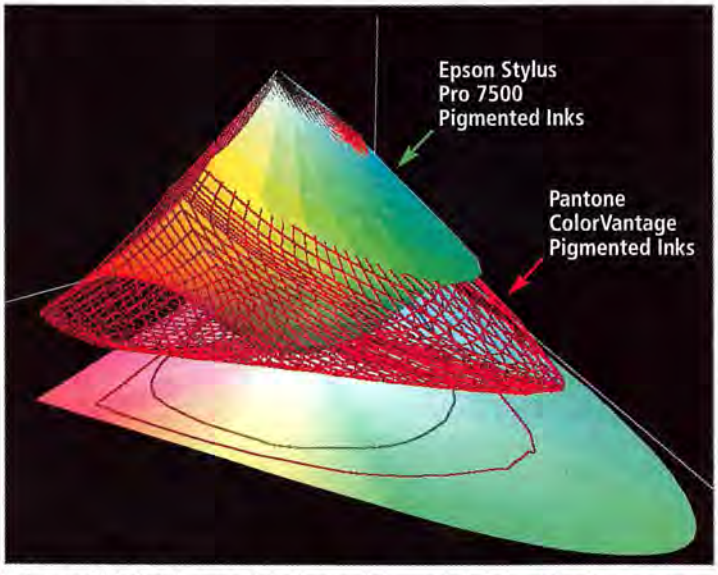
Hide Unneeded Styles If you have styles that aren't for users (say, styles that are used only in the template's locked regions), you can keep the styles from

MORE-ACCURATE COLOR

Pantone swatch books are fixtures on graphic designers' desks, and Pantone inks appear on many a printed piece. Beginning last fall, the company branched out. Its ColorVantage line includes inks, papers, and profiles for certain ink-jet printers from Epson and Canon.

Pantone says that the ColorVantage inks give these select printers a larger color gamut. That—combined with papers in a variety of finishes and printer profiles customized for the ColorVantage inks and papers—is meant to give you more-faithful color when you print photos and artwork.

For supported printers and prices, go to www.pantoneinkjet.com.—TERRI STONE



Enhanced Ink-Jet Output ColorVantage inks are designed to bring larger color gamuts to ink-jet printers, as this image from Pantone demonstrates.

showing up in Contribute's Styles pop-up menu by adding `mmhide` before the style name (for example, `mmhideFooterText`).

Make Meaningful Style Names Think about how your styles will be applied, and give them self-explanatory names. A name like StoryTitle or Headline, rather than something like h2RedItalic, will help people find and use the correct style.

Use External CSS Files Contribute loads the external style sheet attached to a template when it opens a page for editing. It's better to use external style sheets than in-line or embedded CSS. Maintaining consistent style names will be easier, and when you make changes to a style, all Contribute users will automatically get the update the next time they edit a page that uses the style sheet.

Grant Permissions

Some clients are more trustworthy than others. Contribute's Site Administration controls acknowledge this by letting you grant different site contributors varying editing permissions. You can assign different users to separate permission groups; each group has its own set of editing restrictions. You need Contribute to set permissions; if you haven't bought it, download the free 30-day trial version.

In Contribute, choose Contribute: Administer Websites and then choose the name of your site from the hierarchical menu. Enter the administrator password; then, in the Administer Website dialog box, select the permission group you want to edit (or click on the New button and give the new group a name) and click on Edit Group. In the Permission Group dialog box, click on the General category. Help the group's members get to their part of the site faster by entering the URL for that site section in the Group Home Page box. This sets that URL as the default page for the group, helping you keep, say, the sales team out of the corporate staff's pages. You can also set the home page by clicking on the Browse button next to the box.

In the Styles And Fonts category, decide whether you want to take away the user's ability to apply CSS styles, HTML styles, or both. You can also remove the Font and Size menus in the Editing toolbar if you want to restrict text entry to the default styles for each editable region.

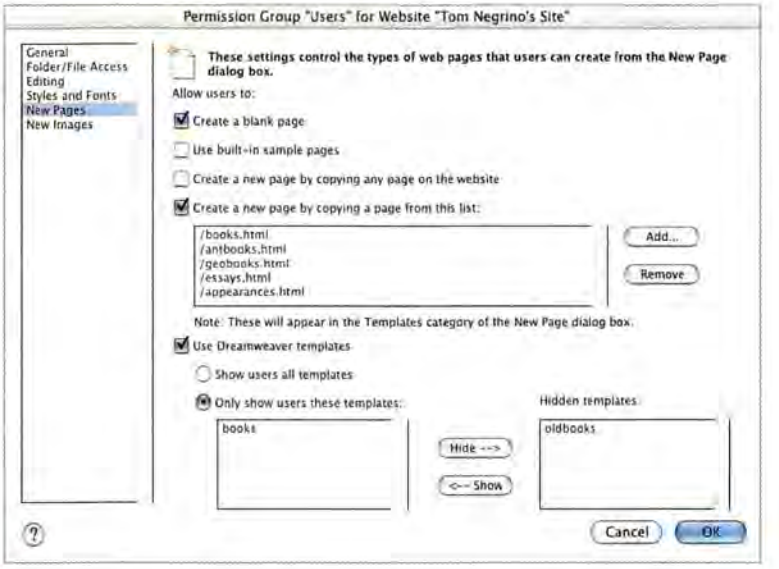
In the New Pages category, select the Use Dreamweaver Templates option, and then decide whether you want users to access all or only selected templates (see "You'll See What I Tell You to See"). You can hide some templates from particular permission groups. This is also the category where you can allow clients to create new pages by copying existing pages from the site.

Finally, use the New Images category to restrict the maximum image-file size that clients can place on their site's pages. If you set the limit to zero, clients won't be able to add any images.

It's Good to Be King

The combination of Dreamweaver templates and Contribute 2 offers advantages beyond greater control and less mundane maintenance for you. Templates and CSS let you make wholesale changes to a site's design by tweaking just a few pages. And your clients will likely be happy that they don't have to pay your fees every time they need a minor site alteration. With the combination of Dreamweaver and Contribute, everybody wins. □

You'll See What I Tell You to See
You can control which templates are seen and used for each permission group. Just assign each department its own permission group.



HTML IN CONTRIBUTE?

Contribute 2 does a thorough job of shielding users from HTML: you can't even view a page's HTML source code, and when you try to paste HTML into the editing window, it appears as plain text in the Web page. But advanced users can sneak in through a back door to insert snippets of HTML, including QuickTime movies, complex tables, and forms, into Contribute pages.

First, you'll need to copy the HTML you want to add, either from the source view of a Web browser or from an HTML editor such as Bare Bones Software's BBEdit.

Switch to Contribute, browse to the page where you want to place the copied HTML, and click on the Edit Page button on the toolbar. In the resulting draft page, click to set the insertion point for the copied HTML snippet. Then choose Insert: Special Characters: Other. The Insert Other Characters dialog box appears, with a tiny text box. Though the box is small, it can hold a lot of text. Press ⌘-V to paste the copied HTML into the text box. (Because you're in a modal dialog box, the menus aren't active, so you must use the keyboard command.) The box may still appear to be empty; to check that the HTML pasted correctly, press the left-arrow key to see the end of the pasted text. Click on OK, and Contribute renders the HTML onto the Contribute draft page.

TOM NEGRINO is the author of *Macromedia Contribute 2 for Windows & Macintosh: Visual QuickStart Guide* (Peachpit Press, 2003) and a frequent contributor to *Macworld*.

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.

Highway Fidelity

WHETHER YOU'RE COMMUTING TO WORK OR HEADING across country, nothing beats music for passing the time. Until a few years ago, audio CDs were the only way to get digital sound in your car. But now, thanks to portable audio players, satellite radios, and MP3-compatible CD gear, it's easier than ever to listen to clean, digital music on the road (see "MP3s for the Road" for tips on burning MP3 discs).

Tucked Away
I installed my iPod in my center storage compartment, which has a power outlet.

For a fee, satellite radio receivers let you tap into 24-7 digital programming (see "Celestial Sound" for more about satellite services and equipment). If you'd rather listen to your own tunes and playlists—and many more songs than a CD can hold—an iPod is the way to go. Mobile installations range from basic dashboard mounts to stealthy setups that conceal the iPod and let you control it remotely. There's a system for just about any car.

Before you install anything, take all the components to your car for a dry run. That's a good time to discover that your power cable is six inches too short—you don't want to find this out when your dash is in pieces on the garage floor. A dry run can also help you decide whether you really want to do the job yourself. If you're uncomfortable around auto sound systems, you're better off paying an expert to do the work, especially if you have to remove your stereo.

Choose a Location

Whether you want your iPod in the open or hidden away, install it near the front of your car's interior so it'll be easy to grab when you want to load new songs. Although the trunk is a popular spot for installing amplifiers and CD changers, its inaccessibility and temperature fluctuations make it an impractical place for an iPod.

Open Installations Open installations let you position the iPod close to the driver's seat, where you can reach the controls and see the screen. Many brackets for PDAs and cell phones can mount your iPod to the dash, floor, seats, or console. If you don't want to permanently mount anything in your car, check out the removable TuneDok, from Belkin (877/523-5546, www.belkin.com), which fits in your car's cup holders. (See "iPod Mounting Options" for a list of iPod mounts.) If you're handy, you can integrate your iPod's docking station into a cubbyhole or an ashtray. For examples of customized iPod installations, look to online forums, such as the one at iPodlounge (www.ipodlounge.com).

You can use dash and vent mounts to hide the cables that power the iPod and connect it to the sound system, but cold air blasting from the air conditioner may cause harmful condensation inside the iPod on hot, humid days.

Hidden Installations If your iPod is out in the open and you forget to take it with you when you leave the car, it's a tempting target for thieves. A good alternative is to install the iPod where it's out of view (and, incidentally, protected from water, grime, and fast food).

Center storage compartments are ideal, since they're often equipped with 12-volt power outlets, and they're close enough to the stereo to keep audio

continues

MP3S FOR THE ROAD

Although no current car CD players work with Apple's AAC format, many handle MP3 songs just fine. You can burn discs on any Mac running OS X via the Finder or iTunes. If the songs are already MP3 files, drag them onto a blank CD-R disc in the Finder and burn it. (Many players balk at CD-RW discs, so test yours before burning your entire library.)

Apple's digital-rights management prevents you from directly converting protected AAC songs from the iTunes Music Store—you have to burn them onto a standard audio CD first. Open iTunes' Preferences window, and make sure that Audio CD and MP3 Encoder are selected under Burning and Importing, respectively. Create a new playlist, add the songs you want to convert, and burn the playlist to a blank disc to create an audio CD. Finally, import the songs back into iTunes to convert them to MP3 format and then burn them onto a new CD.

Taking your iPod to the streets

(even if they're filled with water)

photo by Mike Scully, Graphic Designer: Dr. Bott

naviPod Remote Control for iPod

It's stylish. Infrared. NaviPod lets you slip your trusty iPod into the very core of your home audio system. Finally.

LiliPod Watertight iPod Case

It's shock resistant. Swanky. And it's the most protection you can buy for your iPod without a prescription.

PocketDock

What's not to love? It's small. It lets you charge and update your iPod with a standard FireWire cable. You need it, yes you do.

Runabout for iPod mini

Beat feet with free hands. Elegantly graft your mini to your wrist. Not rated for deflecting bullets.

ICE Link iPod Auto Dock

Simple: hop in car, drop iPod in ICE Link dock. Control iPod with car stereo. Rock on.

iTrip FM Transmitter

Commandeer any FM radio and turn it into your own iPod jukebox. If you must FM, get iTrip.

Universal Microphone

Looking for a way to justify that having an iPod will actually make you more productive? This is it. Record lectures, interviews, anything.

Dr. Bott LLC

Buy Dr. Bott products at your friendly neighborhood Apple store.
Find one online at http://www.drbott.com/local phone: 800.541.1167

CELESTIAL SOUND

Like satellite TV providers, satellite radio providers XM Radio (www.xmradio.com) and Sirius (www.sirius.com) beam digital programming directly to subscribers. (Both are available only in the United States, but Sirius plans to offer service in Canada.) To listen in your car, you need a special receiver and an antenna with a clear view of the sky. To allow uninterrupted reception when the satellites aren't in view, XM and Sirius have installed repeaters, which rebroadcast the signal locally in many cities.

Satellite receivers are available as replacements for your existing radio or as portable units that sell for as little as $100. Because the two satellite services aren't compatible, you need to specify one when you order your equipment. If you buy a portable receiver, you'll also have to connect it to your car's stereo system (see the "Make the Right Connection" section of the main article for tips).

Why pay for something that you can get for free with any car radio? For about $10 a month, satellite radio offers more than 100 channels of music, news, traffic, and talk—much of it commercial-free. Meanwhile, though, traditional broadcasters are fighting back by introducing digital FM and AM stations that promise static-free transmissions; several manufacturers of consumer electronics already offer compatible equipment. Stay tuned for a bruising battle in the digital-broadcasting marketplace.

cables short (see "Tucked Away"). The glove compartment is another option, as long as there's a nearby power source.

Make the Right Connection

More than any other factor, the way you connect the iPod to the stereo determines how good the sound quality will be. Not surprisingly, you'll get better results with higher-end systems. Connection options vary widely, depending on your budget and your stereo setup. (See "All in One" for a look at an innovative product that promises simpler iPod installations.)

Auxiliary Inputs Newer original equipment and aftermarket *head units* (the part of the stereo you see in the dash) often include jacks for extra components, such as satellite receivers and digital-music players. These jacks let you feed an audio signal directly into the stereo for the best possible sound.

Auxiliary input jacks, often labeled AUX IN, usually accept either RCA or miniature audio plugs. Either way, you connect them to the iPod with a patch cable ($10 to $25), which you can get from an electronics supplier such as Radio Shack (800/843-7422, www.radioshack.com). The jacks are often at the rear of the head unit, so you may have to remove it to connect the audio cord. If you're lucky, they'll be on the front panel (see "Easy Access").

Auxiliary Adapters For stereos without an auxiliary jack, BlitzSafe (201/569-5000, www.blitzsafe.com), Pacific Accessory Corporation (800/854-3133, www.pac-audio.com), AutoToys (www.autotoys.com), and other companies sell $50 to $100 adapters that add the jack.

Auxiliary adapters can hook up to satellite radio inputs, CD-changer inputs, or proprietary inputs. Go to the companies' Web sites to see which adapters are compatible with your car's stereo.

CD-changer inputs require extra consideration. In most cases, an auxiliary adapter disables your existing CD player, so you'll have to decide whether you want that trade-off. And some adapters connect to the CD-changer inputs at the back of the head unit, while others hook up in the trunk. If your vehicle requires a trunk connection, you must route an audio cable back to wherever you've installed the iPod.

Cassette Adapters These cassette look-alikes transfer signals directly from the iPod's headphone jack to the heads in your tape player. Although car-stereo buffs criticize them, cassette adapters often sound better than real tapes, and you can pick one up for less than $20. But cassette adapters leave a wire dangling from the tape slot, so they're not a good choice for hidden installations.

FM Modulators FM modulators are an option for head units without auxiliary inputs or available adapters. Modulators connect to the iPod's audio jack and play music over open frequencies on your FM radio. Because they connect directly to the radio's antenna input, their signals are usually much stronger and less prone to interference than another connection option, FM transmitters. The best models use phase-locked loop circuits that remain fixed on one frequency, and they're designed to not disrupt normal radio reception when you turn them off. You can purchase FM modulators from a retailer such as Crutchfield (888/955-6000, www.crutchfield.com) for around $50.

ALL IN ONE

Dension USA's IceLink combines an audio connection for your iPod, a power supply, and a control interface in one convenient, if pricey, package (www.densionusa.com/icelink). The IceLink costs between $159 and $219, and it has to be ordered for a specific car model.

A cable connects the IceLink to the CD-changer socket at the back of the stereo or in the trunk, and another wire attaches to the dock connector to power the iPod and access its audio signal. The dock cord also feeds commands from the car's audio system to the iPod, so you can use the controls on your steering wheel or stereo panel to turn the iPod on and off, change tracks, or skip ahead or back. An updated version of the IceLink that comes with its own mini dock should be shipping by the time you read this.

Even at their best, though, FM modulators are limited by the FM signal's bandwidth, so they can't handle as wide a range of frequencies as, say, CDs can. I tried an FM modulator with my iPod for six months—although the sound was consistently better than that of the FM transmitters I've tried, I was happier using an inexpensive cassette adapter. (For another firsthand account of FM modulators and cassette adapters in action, see "Have iPod, Will Travel," *Mobile Mac*, November 2003.)

Power Up

Unless you don't mind your iPod quitting in the middle of your favorite song, you must get an external charger. One end of the car charger plugs into the 12-volt cigarette-lighter receptacle; the other end attaches either to the iPod's dock or to a FireWire connector, depending on the model.

SiK's imp external charger ($30; 925/820-1745, www.sik.com), which is compatible only with iPods that have a dock connector, also includes a *line-level* output jack. Unlike the headphone jack, the output jack isn't affected by the iPod's volume control, and it provides the best audio signal for your car stereo. If you have an earlier-generation iPod, XtremeMac (866/392-9800, www.xtrememac.com) sells a $20 iPod Car Charger that connects to the FireWire port.

Put Yourself in Control

A remote control is essential for hidden iPod installations. And because operating the iPod's controls while you're driving is dangerous, a remote control is a worthwhile accessory even if your iPod is accessible.

Some people are satisfied with Apple's remote ($39; http://store.apple.com). I've had better success with Engineered Audio's $40 RemoteRemote (636/273-6029, www.engineeredaudio.com), which has two components: a compact receiver that connects to the iPod's headphone and remote jacks; and a battery-operated key fob with play/pause, forward, reverse, and volume buttons. (The receiver also sports a headphone jack.) I used double-sided tape to attach the key fob to my center console, where it's easy to operate by touch.

Easy Access The auxiliary jack on this head unit is located on the front left, so you can easily plug your iPod into it.

Fine-Tuning

You'll probably have to tweak your installation—tighten a connection or move a mounting bracket—before you're happy with it. One common problem deserves special mention: if you hear a humming or whining sound when the iPod is playing, install a ground loop isolator between the iPod and the head unit. You can buy one from Radio Shack (part number 270-054) for less than $20.

The Digital Highway

Auto sound systems are rapidly becoming more digital-friendly. For example, in January 2004, Alpine Electronics (310/326-8000, www.alpine.com) announced a line of iPod-compatible in-dash receivers that let you control the iPod and display playlists on the head unit, and more car makers are offering built-in satellite radio. But even without these cutting-edge products, your car stereo and iPod or portable satellite receiver can still make beautiful music together.

FRANKLIN N. TESSLER is a radiologist who spent more money than he should have installing an iPod in his Infiniti G35.

iPOD MOUNTING OPTIONS

There are many ways to mount an iPod in your car.

PRODUCT	COMPANY	CONTACT	PRICE	COMMENTS
AC Vent Wireless Phone Mount	Radio Shack	800/843-7422, www.radioshack.com	$24	Hooks onto vent; not for vertical or round vent slats.
Auto Charger for iPod	Dr. Bott	877/611-2688, www.drbott.com	$30	For original and dockable iPods; replaceable fuse.
CM123 Vent Mount	Arkon Resources	800/841-0884, www.arkon.com	$20	Hooks onto vents.
CM330 Cup Mount	Arkon Resources	800/841-0884, www.arkon.com	$30	Not for pop-out cup holders.
iPod Car Charger	XtremeMac	866/392-9800, www.xtrememac.com	$20	Separate versions for dockable and original iPods.
Mobile Power Cord	Belkin	877/523-5546, www.belkin.com	$25	For dockable iPods only; replaceable fuse.
PowerPod	Griffin Technology	615/399-7000, www.griffintechnology.com	$25	For original and dockable iPods.
Premium Car Charger	Seidio	877/273-4346, www.seidioonline.com	$15	For dockable iPods only.
ProClip	ProClip USA	800/296-3212, www.proclipusa.com	$35	Tilts and swivels. Comes with IceLink.
TuneDok	Belkin	877/523-5546, www.belkin.com	$30	Fits into cup holders; not compatible with the iPod mini.
Ultra-Low Profile Charger for iPod	Monster Cable	415/840-2000, www.monstercable.com	$40	For dockable iPods only; includes line-out jack.
VSM Legend and Express Mount	Pro.Fit	800/388-0073, www.pro-fit-intl.com	$50	Base attaches to dash and swivels 30 degrees; requires Express Mount that hooks onto any iPod case with a belt clip button.

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.

iChat with Your TV

WHEN APPLE INTRODUCED iCHAT AV, I FELT CHEATED. Apple and I had a *deal*: I would devote my free time to mastering technology rather than relating to my fellow human beings, and Apple would keep churning out cool new technologies for me to use. Then Apple goes and introduces software that not only installs and configures itself but also requires an ample storehouse of social skills that I don't have!

Fortunately, I was able to take the company's groundbreaking tool for fostering human communication and pervert it into a clever way to watch more television. And along the way, I learned some object lessons about just how capricious AppleScript can be.

The Mission: Remote iChat Control

Your mission is a simple one: with a little hardware and a little AppleScript, you can iChat with your TV.

Why would you want to do this? In 2003, millions of baseball fans were forced to watch afternoon postseason championship games on *tape*, for heaven's sake. You're in an office with a Mac and a broadband connection, and you've got a Mac at home with a broadband connection. What if you could open a video chat with your TV from any iChat AV–equipped Mac in the world, to watch and hear, in real time, what your TV was receiving?

iWatch With AppleScript, you can communicate with—and watch—your TV from afar.

I'll admit under duress that my plan has some *mainstream* uses, too. The script, once complete, will allow you to activate a video chat on a remote Mac—so it's useful for surveillance, for example.

The Setup

Any device with video and audio outputs—from a VCR to a cable box to a TiVo—will do just fine for this project. And while Apple always uses the hypermegasuperginchy-looking iSight camera when demonstrating iChat, any FireWire-based video source should also work fine. What you need is a bridge to digitize the analog video and audio signals.

You may already have such a bridge in your closet. Most digital camcorders have analog inputs for copying VHS to DV. *Many* of them will also pass this analog signal to your Mac when they are plugged into a Mac's FireWire port. The camera needs to be turned on and ready 24-7, though. If you don't have (or want to use) a camcorder, you can use a stand-alone analog-to-digital video bridge, such as Formac's $239 Studio DV (www.formac.com).

The Mac you'll use for this project must be in the same room as your video source, obviously. And it can't be shared while you're away—the AppleScript that makes all this work exacts a toll on performance. You will also need to change the Mac's Energy Saver settings so that the CPU never sleeps.

Your TV Mac will need its own iChat account (they're free). For convenience, give this setup its own user account on your Mac, with iChat set to launch automatically at startup. Add yourself to the TV Mac's buddy list, and iChat is officially configured. You've done all you can do with conventional weapons: now it's time to summon AppleScript down from the heavens—or up from hell, depending on its mood.

How It Works

The script works by constantly checking the video Mac's buddy list. If it spots you online *and* your Status is set to Watching TV, it invites you to a video chat. It's secure (the script will open a chat only for you), and it'll work from anywhere—as long as your iChat account matches the one in the TiVo Mac's script. Change your Status to Watching TV; within a minute or so, your TV Mac will pop in and invite you to watch today's rerun of *Columbo*, or, if you've hooked up an iSight camera, show you what your cat's been up to since you left the house.

How It Doesn't Work

Head on over to www.macworld.com/downloads/2004/06/ichatscripts.sit to download the finished script, including annotations. The script is useful, makes for an impressive demo, and runs like a charm—until that random moment seconds or days later when iChat suddenly quits for no adequately explored reason.

I discovered late in the game that the act of telling iChat `set status to "Serving Video"` would sometimes cause it to crash, but that `set status message to "Serving Video"` didn't.

The lesson here is that when you script, the community of AppleScripters is an essential resource for the new or ongoing script author. Join the AppleScript-

COME OUT OF YOUR SHELL

1. The `on run` block runs only when you first launch the app; it contains all the code necessary to get the script up and running.
2. This section of code finds all your available buddies, creates a list of buddies and their iChat IDs, and then asks you to pick (using `choose from list`) which buddy you want to use as the target for sending videos.
3. The `idle` block contains code that runs every so often (in this case every 60 seconds). This is the section of code that looks for the proper status from your iChat video buddy, at which point it initiates a video-chat connection.
4. This `if` statement checks to see whether the TV Mac is currently serving video. If not, and if your TV buddy's status is set to Watching TV, then the script tells iChat to send the video invitation.
5. If your buddy has changed his or her status to something that isn't Watching TV, this closes the current chat and puts the script back into standby mode.

```
global viewerName
global viewerID
global originalStatus
on run 1
 set theBuddyIDList to {}
 set theBuddyNameList to {}
 set theBuddyDisplayList to {}
 set theIndex to 0
 tell application "iChat"
  if status is offline then log in
 end tell
 tell application "iChat" 2
  set theBuddies to properties of every ¬
   account whose status is available
  repeat with x from 1 to (length of theBuddies)
   set theBuddyProps to item x of theBuddies
   set the end of theBuddyIDList to ¬
    id of theBuddyProps
   set the end of theBuddyNameList to ¬
    name of theBuddyProps
   set theBuddyDisplayItem to (name of ¬
   theBuddyProps) & " = " & (id of theBuddyProps)
   set the end of theBuddyDisplayList to ¬
   theBuddyDisplayItem
  end repeat
 end tell
set theBuddy to choose from list ¬
  theBuddyDisplayList with prompt ¬
 "Grant Access to which buddy?" without ¬
 multiple selections allowed
 repeat with x from 1 to ¬
 (length of theBuddyDisplayList)
  set theTest to item x of theBuddyDisplayList
  if theTest contains theBuddy then
   set theIndex to x
   exit repeat
  end if
 end repeat
 set viewerName to item theIndex ¬
  of theBuddyNameList
 set viewerID to item theIndex of theBuddyIDList
 tell application "iChat"
  set the status message to "Standing By"
 end tell
end run
on idle 3
 tell application "iChat"
  log in
  set viewerStatus to the status message of ¬
   every account whose id is viewerID
  set myStatus to the status message
 end tell
 if myStatus is not "Serving Video" then 4
 if item 1 of viewerStatus is "Watching TV" then
   tell application "iChat"
    set the status message to "Serving Video"
    send video invitation to account viewerName
   end tell
  end if
 else
  if viewerStatus is not "Watching TV" then 5
   tell application "iChat"
    close window "Video Chat With " & viewerName
    set the status message to "Standing By"
   end tell
  end if
 end if
 return 60
end idle
```

Users mailing list at www.lists.apple.com, and don't be afraid to ask questions or beg for a workaround.

Where to Go from Here

Wouldn't it be great if your TV Mac's iChat Buddy icon were actually a live view of what was currently showing? Yes, it would—and you can do it via GUI Scripting, a Panther innovation that lets you script almost anything. (A version of this script that includes the code needed to update the buddy icon is part of the downloadable script package on Macworld.com)

My dream of TV mastery is becoming reality. My TV Mac remains on duty, attached to my TiVo. I keep its buddy icon visible, and when I see a postage-stamp image of something more interesting than what I'm writing up there in the office, it's time for a break. □

Contributing Editor ANDY IHNATKO is a hacker of all things great and small.

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 HOW TO PREVENT ACCIDENTAL WINDOW CLOsures, see who belongs to which Address Book groups, change iCal's displays, use iChat emoticons in new ways, skip disk-image verification, and more.

Find Group Memberships Fast in Address Book

One nice new feature of Panther's Address Book app is its ability to display a contact's group memberships quickly and easily. For instance, if you've created a group to ease your holiday-card chores (by taking advantage of another new Address Book feature, the ability to print address labels), you may not remember whether your Aunt Martha is in the group. Previous to Mac OS X 10.3's release, you had to go into your Holiday Card group and eyeball its contacts—not exactly the best method when you've got many contacts in a list. In 10.3, you can simply select the All group, highlight Aunt Martha's name, and hold down the option key. Address Book will highlight the names of all groups that include her.

Miniature Font Panel
Are you tired of the huge Font panel in Mail and TextEdit? Create a miniaturized version by dragging the window-resizing triangle (in the bottom right corner) up and to the left as far as you can.

Change iCal's Displays

If you use iCal, you're probably quite familiar with the Day, Week, and Month view buttons at the bottom of the main window. Click on one of them, and you'll see the corresponding time period displayed on the calendar. But what if you're interested in another period, such as an upcoming three-day weekend?

Thanks to a completely undocumented iCal feature, you can view a period of one to seven days by pressing and holding ⌘-option, and then typing 1 to view one day, 2 for two days, and so on.

If you view six days, you can access another special feature—press ⌘-option-6, and the calendar view will jump forward six days (the last day in the current view becomes the first day in the next view). Why is this useful? Normally, iCal won't let you drag and drop an event from one week to another in Week view—you have to switch to Month view first. But if you use ⌘-option-6, you can drag an event from the last day of the prior view into the first day of the current view, effectively moving the event forward in time without having to switch views.

Save Screen Space When Choosing Fonts

Do you find the size of the Font panel (used in applications such as TextEdit and Mail) intrusive? On a screen such as that of the 12-inch PowerBook, the Font panel can be especially annoying—it's so large that you may not even be able to see what's underneath it at times.

Luckily, there's a very simple solution (in both OS X 10.2 and OS X 10.3): just resize the panel by dragging the resizing triangle (located in the lower right corner) up and to the left. As you do so, the Font panel shrinks intelligently until you're left with just the basics (see "Miniature Font Panel"). Although you lose the Collections column and most of the panel's other special features, you can still select the font family, typeface, and size, which should meet your needs in most situations. Once the panel is minimized, you can easily flip back and forth between the miniature view and the full-size view by clicking on the green resize button in the panel's menu bar.

Place a Clock in the Menu Bar and on the Desktop

The Date & Time preference pane lets you view a clock in the menu bar or as a floating window—but not both. If you'd like to keep both clocks in view (see "Here a Clock, There a Clock"), there's a relatively easy way to do so.

UNIX TIP OF THE MONTH

When you download and mount a disk image in Panther, a small dialog box indicates that Mac OS is verifying the image's *checksum*; Cancel and Skip buttons also appear. Checksums are values that depend on the disk image's data. When you mount the image, OS X calculates a checksum based on the data on the disk image and then compares this calculated checksum against one stored on the disk image. If the two values differ, verification will fail, indicating that the data on the disk image has changed.

The checksum stage is important and useful, but it also adds time to the image-mounting process—the bigger the disk image is, the longer the checksum verification takes. If you trust the source of your disk images, you can tell OS X to skip this step: just click on the Skip button in the dialog box. Of course, you'll have to do this for every disk image you mount. A more permanent solution is to disable checksum verification. In OS X 10.2, you could do this easily (by deselecting Verify Checksums under the Verifying tab in Disk Copy's Preferences); in OS X 10.3, it requires a trip to Terminal. Open Terminal and type the following:

```
defaults write com.apple.frameworks.diskimages
skip-verify true
```

From now on, disk images will mount much more quickly, since they won't be subject to checksum verification (no restarting or logging out is required—the change takes place immediately). Note that if someone has modified a disk image's contents, you won't know it, so do this only if you're certain of the source of all your disk images (otherwise, just use the Skip button). If you wish to reenable checksum verification, repeat the preceding Terminal command, replacing `true` with `false`.

At the root of your hard drive, navigate to System: Library: CoreServices: Menu Extras. In the Menu Extras folder, control-click on Clock.menu and select Show Package Contents. In the new window that opens, navigate to Contents: Resources. Drag WindowClock.app to your Applications folder (or anywhere else you'd like to keep it) to make a copy of the app. You may have to provide your administrative password, as the system owns this file.

Once you've copied WindowClock.app, launch it with a double-click. You'll find that both clocks are active at the same time. If you have a multibutton mouse, you can right-click on the clock face and use the contextual menu to switch between analog and digital modes (for some reason, control-clicking will not bring up the menu; only a right click will work). To get rid of the desktop clock, just open the Date & Time preference pane, click on the Clock tab, and toggle between menu-bar and desktop clocks—when you toggle back to the menu-bar mode, the desktop clock will vanish.

Here a Clock, There a Clock If you'd like both a floating desktop clock and a menu-bar clock, a little exploration of the Clock.menu Extras package is all that's required.

Prevent Accidental Window Closures

It's happened to us all: you accidentally close a window in one application—say, a long iChat with a close friend—when you meant to close a window in another app, such as a browser window displaying a weather forecast. You think you're in the browser, so you press ⌘-W—and then watch your not-yet-saved iChat conversation disappear!

You can avoid doing this in the future. You may already know that you can create your own keyboard shortcuts in OS X 10.3. But did you know that you can also reassign existing shortcuts? By reassigning iChat's Close command, you'll prevent future accidental closures.

Make sure iChat isn't running, and open the Keyboard & Mouse preference pane in System Preferences. Click on the Keyboard Shortcuts tab, and then click on the plus (+) sign to add a new keyboard shortcut. In the window that appears, select iChat from the Application pop-up menu, enter `Close` in the Menu Title box, and type the keyboard shortcut of your choice in the Keyboard Shortcut box. Since you're replacing ⌘-W, a good choice might be ⌘-shift-W. Click on Add, and close the Keyboard & Mouse pane.

Now launch iChat and behold your newly reassigned close command (see "New and Improved Close"). Pressing ⌘-W in iChat now greets you with nothing more than a simple system alert sound. When you need to close a window, type your new command. If you ever want to remove a custom shortcut, open the Keyboard & Mouse preference pane, click on the Keyboard Shortcuts tab, find and highlight the shortcut, and then click on the minus (–) button.

Create Read-Only Archives in Mail

If you organize your messages in folders in Apple's Mail application, you may want some of those folders to have read-only access and still be accessible from Mail (for instance, a collection of e-mails related to your 2003 taxes). Although you can't assign a folder read-only access from Mail, you can do so easily in the Finder.

Open your Users: Library: Mail: Mailboxes folder (it's OK if Mail is running); you should see the various folders you use to organize your mail (subfolders will be one level lower, within their respective parent folders). To create a read-only Mail folder, first get information (⌘-I) on the folder of interest. Then, in the Ownership & Permissions section of the window, change the You Can pop-up menu from Read & Write to Read Only, and close the Get Info window.

When you return to Mail, you'll find that you can no longer drag a message into the folder you modified. Mail will simply display a warning dialog box stating that the folder is read-only. However, you can view all the messages within the folder, to quickly access archived messages.

New and Improved Close Modifying a keyboard shortcut, such as iChat's Close command, can help you avoid frustrating accidents.

SHOW YOUR iCHAT MOOD

Sure, you can set custom status messages in iChat by clicking on your current status, just under your name in the Buddy List window. But did you know you could use emoticons (those cute graphical images you select from the pop-up menu in the iChat text-entry area) as part of your status? If you want to tell the world you're out enjoying some sunshine, for instance, you could show a smiley face wearing a cool pair of shades (see "Emote Yourself!"). The trick is to type the symbols used to create the emoticon, instead of relying on the pop-up menu. To create the sunglasses, just type `8)`; a smiley face is `:)`. To find the other emoticon keystrokes, look at the lower right corner of the smiley pop-up menu in the iChat text-entry area—as you mouse over each smiley image, its keystrokes appear. You won't see the emoticon on your own Mac, but other users will.

Emote Yourself! By adding the keystrokes for the iChat emoticons into your Status message (`8)` in this case), you can show the world how you really feel.

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).

Mac OS X Hints offers tips and tricks for using hidden features in OS X. We want to hear from you! If you've got suggestions for column topics or want to tell us what you think of *Mac OS X Hints*, e-mail us at macosxhints@macworld.com. For more hints, go to www.macosxhints.com.

Mac 911

FEW WOULD ACCUSE ME OF FOLLOWING NED LUDD, BUT there are times when technology drives me to distraction. In the spirit of the Luddites, this month's *Mac 911* offers ways to defeat the technological turmoil of corrupted AOL attachments, DVD-less Macs, cockeyed movies, and folders that refuse to move away from Home.

A-O-Heck

I've been trying to send some Microsoft Word documents to my mom, who uses America Online, but AOL turns the files into MIME format, which corrupts the documents. What should I do?

Jack Lee

I have the same problem when I send pictures to my mother. AOL has a nasty habit of mangling attachments sent from outside the service. There are a couple of ways around this.

The easiest is to compress any files you send to people who use AOL. Although AOL can corrupt many kinds of files, it seems to respect compressed documents. In Panther, create a .zip archive by selecting your document (or a folder full of documents) in the Finder and choosing Create Archive from the File menu. Or, if you prefer, use Aladdin Systems' DropStuff, which you can find in the $50 StuffIt Standard Edition and the $80 StuffIt Deluxe 8.0 (www.aladdinsys.com), to compress files in the .sit format.

Alternatively, you can upload your files to a Web site—your .Mac account, for example. Send your mother the link to that site, and she can download the files from there.

Disc Despair

I've noticed that some software, such as Apple's iLife '04 ($49; www.apple.com), ships on DVD. My Power Mac G4 doesn't have a DVD drive, and I'm concerned that I'm going to be left out in the cold when more software is delivered in this form. Short of buying a DVD drive, what can I do if I receive a DVD that I'd like to use on my Mac?

Ed Borman

You don't need to purchase a DVD drive in order to use discs such as the iLife '04 installer (which contains both GarageBand and iDVD). You do, however, need access to a Mac that carries such a drive. With such access, there are two ways to take advantage of that DVD.

The first is to use Disk Utility to create an image of the disc and then copy that image to your Mac or, if your Mac isn't close at hand, to a removable drive. (I use my iPod for such jobs.) To do so, insert the disc, launch Disk Utility (in Applications: Utilities), select the disc from the list of volumes on the left side of the Disk Utility window, and click on the New Image button. In the resulting sheet, select DVD/CD Master in the Image Format pop-up menu and leave the Encryption pop-up menu set to None. Name the image and click on Save. When the image has been created, move it to the other Mac, double-click on it to mount it, and treat it as an installer disc.

If you can borrow a Mac with a SuperDrive and you'd like to skip the disc-image step, just insert the disc in the borrowed Mac and connect the two computers via FireWire Target Disk Mode (with the borrowed Mac as the target), and the disc will appear on your Mac as a mounted image. Run the installer on the image, and you're good to go.

To connect those Macs via FireWire Target Disk Mode, shut down both computers, string a FireWire cable between them, boot the target Mac while holding down the T key, and then boot the host Mac. The target Mac's screen will display a FireWire icon. Its volumes will appear on the host Mac as FireWire drives.

TIP OF THE MONTH

I like to fall asleep to the music playing on my Mac, but I wanted that music to switch off once I'd fallen asleep. Enter AppleScript. I make a lullaby-inducing script by launching Script Editor (Applications: AppleScript) and typing the following:

```
Tell application "iTunes"
      Delay 5400
      Quit
End tell
```

Then I select the Save As command from the File menu and save the script as an application with the Startup Screen and Stay Open options deselected. You can put the application anywhere that's convenient for you.

The next time you want to fall asleep to your iTunes playlists, just launch iTunes, start playing, and then launch your AppleScript. Exactly 90 minutes (5,400 seconds) later, iTunes will quit.

Christian Brescia

Home Sweet Home

Is there a way to move my Home folder? I tried copying the files in my Home folder to my external hard drive, but it didn't work.

Guillermo Alvelais

I'm afraid that it takes more than a simple Copy command to do this, but it's certainly an achievable goal.

Launch NetInfo Manager (Applications: Utilities). In the local @ localhost ~ / window that appears, click on the Lock icon. Enter your password when prompted. Now click on the Users entry in the second column and, in the third column, click on the name of the account you want to move—yours might be named Guillermo, for example.

In the lower portion of the window, look for the Home entry in the Property list. To the right of this entry, you'll see something like /Users/guillermo. Double-click on this entry and enter `/Volumes/othervolume`, where `othervolume` is the name of the volume or hard drive you want to move the Home folder to (see "Home Away from Home").

Press the return key or the enter key, and then choose Save Changes from the File menu. Log out and then log back in again, and you'll discover that your Home folder is now located on the volume or drive you designated in NetInfo Manager. If you place the Home folder on an external drive, make sure you give it enough time to spin up and mount before you log in.

To put things back the way they were, follow this same procedure but when you edit the entry, change it back to /Users/guillermo.

Hubbub

When I plug two iPods into my FireWire hub, I receive error messages about unrecognized devices. Why can't more than one iPod be plugged into a computer at a time?

Shirley Kehr

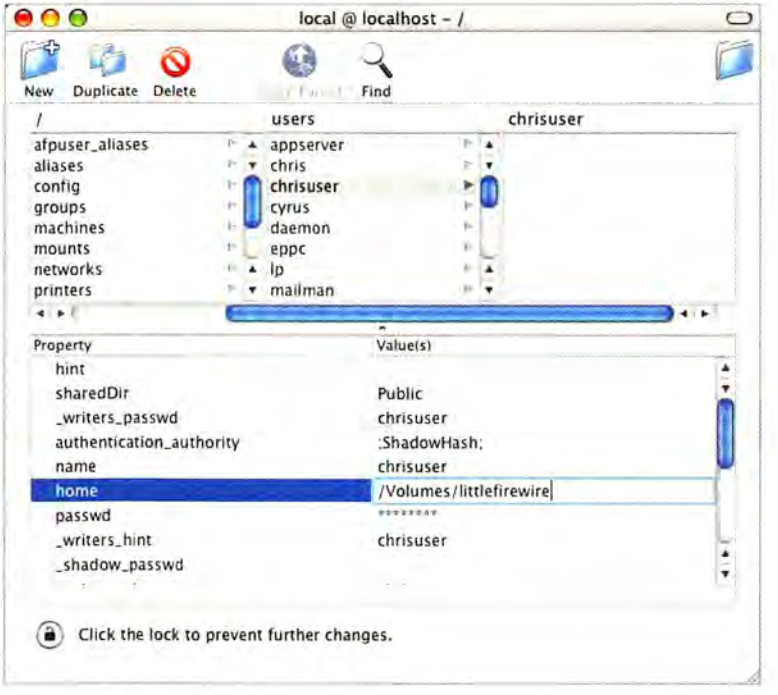
You can plug more than one iPod into your Mac, but to do so, you must either use a powered hub that provides enough juice for both your iPods or connect each iPod to separate FireWire ports on your Mac. My guess is that you're attempting to use an unpowered hub or a hub that, even when plugged in, just doesn't have the oomph necessary to drive two iPods.

Apple suggests that an iPod be the only device on a FireWire bus because an iPod requires most of the power that bus can provide. I've heard of instances where people have been able to successfully use an iPod chained to a low-powered FireWire device (or one that has its own power supply), but, in general, I've found Apple's advice to be solid.

UNSOLICITED ADVICE

Microsoft Entourage X ($399 as part of Microsoft Office v. X; www.microsoft.com) has an option for automatically compressing attachments with StuffIt (this option is in the Compose tab of the Mail & News Preferences window). When you upgrade to Panther, this option doesn't work, because Entourage requires version 6.5 of StuffIt Engine, and Panther replaces that version with a more recent iteration. But you can get this option to work again.

To do so, you must install the older version of StuffIt Engine. Fortunately, Aladdin Systems (maker of StuffIt) has made this possible. Simply download and install StuffIt Engine 6.5.2, and Entourage's automatic-compression feature is back in business. You can download version 6.5.2 at http://tinyurl.com/2ep3l.



Home Away from Home NetInfo Manager provides the means for moving your Home folder to a new location.

Wrong Angle

I just bought a Canon A80 camcorder. When I rotate the camera into portrait mode to shoot, the movie appears sideways when I download it to my Mac. How do I rotate the movie so it displays properly?

Tim Waag

This is easily fixed with QuickTime Pro ($30; www.apple.com). Open the movie in QuickTime Pro and press ⌘-J. Select Video Track from the Movie pop-up window, and then select Size from the Annotations pop-up menu. You'll see controls for flipping the video horizontally and vertically, as well as controls for rotating the movie in 90-degree increments (both clockwise and counterclockwise). Rotate the movie to your satisfaction and save it. □

Contributing Editor CHRISTOPHER BREEN dons the guise of Mac Daddy each Tuesday on TechTV's *Call for Help* program. He's also the author of *Secrets of the iPod*, fourth edition (Peachpit Press, 2004).

Mac 911 helps you solve your Mac problems. For more of the same, visit the Mac 911 Weblog (www.macworld.com/weblogs/mac911). Send your tips to mac911@macworld.com. We pay $50 for tips selected for publication in *Macworld*. All published submissions become the sole property of *Macworld*.

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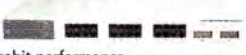

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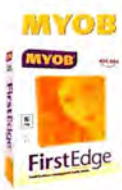

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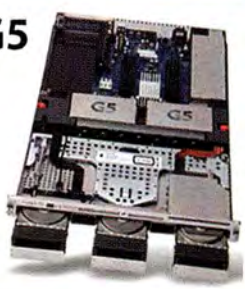

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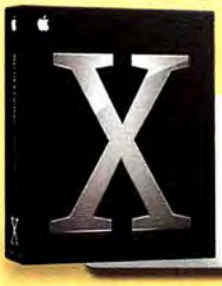

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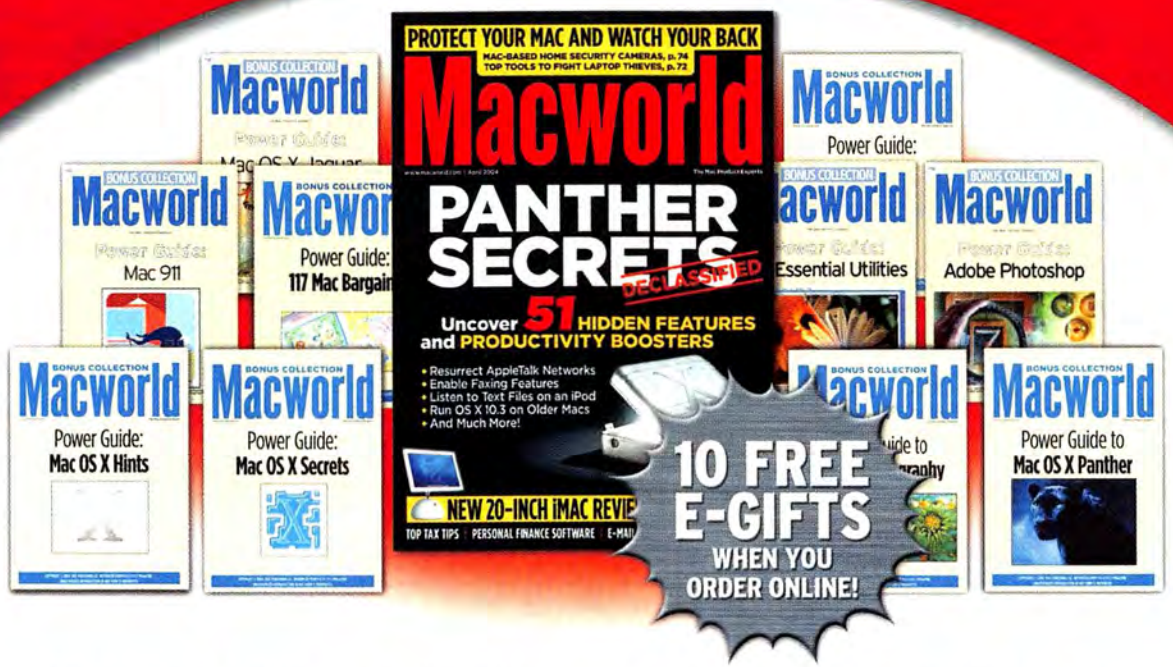

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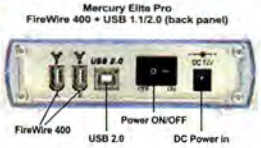

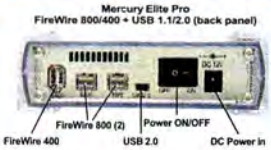

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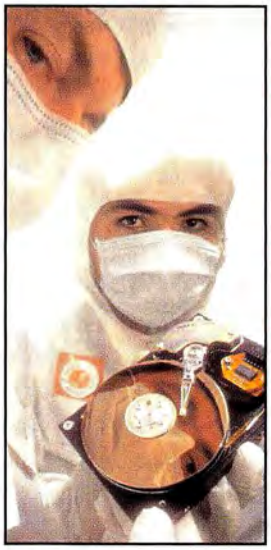

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Two sided Aqueous Coating	4/4		195.00	250.00	295.00	465.00
FLYERS Cover						
8.5" x 11" 95# Gloss Cover Two sided Aqueous Coating	4/4		295.00	370.00	490.00	884.00
BROCHURES Book						
11" x 17" 100# Gloss Book	4/0		190.00	350.00	450.00	695.00
Two sided Aqueous Coating	4/4		390.00	495.00	595.00	850.00
BROCHURES Cover						
11" x 17" 95# Gloss Cover Two sided Aqueous Coating	4/4		590.00	665.00	905.00	1455.00
POSTCARDS						
12 pt. C2S	4/4	4.25" x 6"	185.00	245.00	390.00
Aqueous Coating	4/4	5.5" x 8.5"	280.00	350.00	555.00
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5000	99	99
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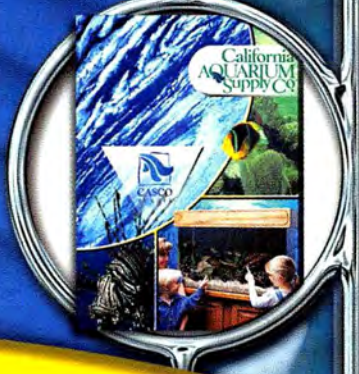

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Hot Stuff

The Month's Coolest Developments

FROM THE EDITORS OF MACWORLD

PICTUREMATE ▶

It might look like a small boom box, but the output of the PictureMate—the latest photo printer from Epson (www.epson.com)—is what really rocks. The $199 six-color printer produces 4-by-6-inch glossy prints that look and feel just like the ones you'd get from a photo lab. And because the PictureMate uses pigment-based inks instead of the more common dye-based inks, your prints are less likely to experience water damage, smudges, and fading; according to Epson, framed PictureMate prints resist fading for more than 100 years.

Topo State Series

Mac users in need of mapping software may have felt as if they've been wandering around aimlessly for the past few years. Fortunately, National Geographic (www.nationalgeographic.com) is offering a way out of the wilderness; it has added long-awaited Mac compatibility (for OS 9 *and* OS X) to its Topo State Series topographical maps. Each $100 state CD-ROM contains complete topographic map coverage; National Geographic also offers Mac users forced to make do with the Windows version a $10 conversion disk that will make their PC data Mac compatible.

PocketMac iPod Edition

Information Appliance Associates (www.pocketmac.net) has expanded the power of the iPod beyond simply storing iCal calendar and Address Book contact information. With the latest version of its $23 data-synchronization tool, PocketMac iPod Edition, you can copy and convert Microsoft Entourage data—including contacts, calendars, tasks, notes, and e-mail—from Mac to iPod. The utility also reformats Text, RTF, PDF, and Word documents for viewing on the iPod.

◀ SAN FRANCISCO APPLE STORE

Not every Apple Store opening attracts Steve Jobs and San Francisco mayor Gavin Newsom. Then again, with its two stories, 14-seat Genius Bar, 39-seat theater, and Internet café, the new San Francisco outlet is different from most other Apple Stores. Like its counterparts in Chicago, Los Angeles, New York, and Tokyo, the San Francisco Apple Store is a celebration of the Mac community. For Mac fans visiting any of those five cities, Apple's flagship stores are must-see destinations.

APPLE'S LUCKY BAG ▶

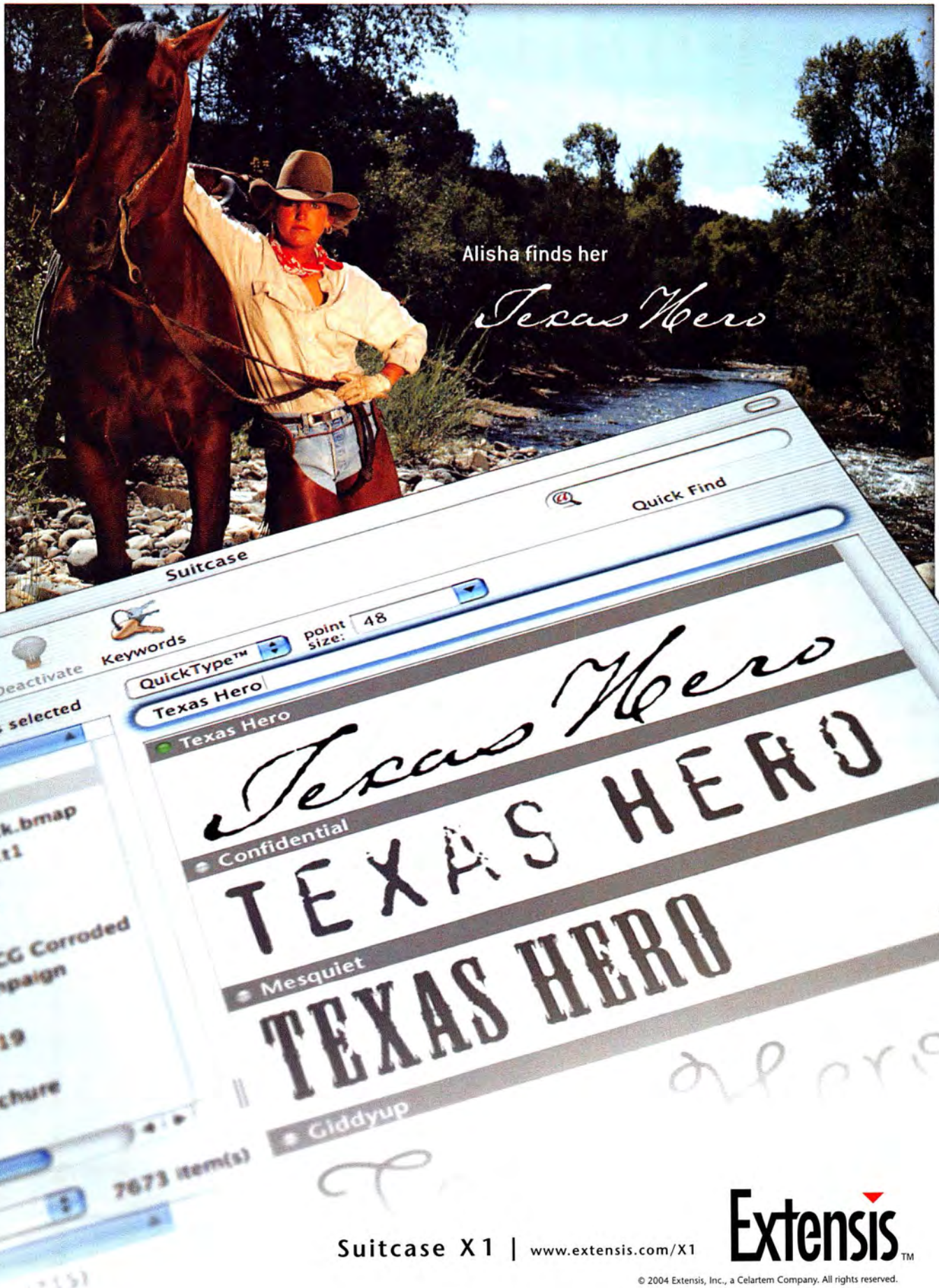
At San Francisco's Apple Store opening, grab bags of merchandise—containing AirPort Extreme Base Stations, the iLife suite, and many other goodies—were sold to the first 200 folks willing to pay $249 for them. A few hours later, a handful of them popped up on eBay.

MINI'S MANY COLORS

We can tell you all about the iPod mini's compact size and modified scroll wheel, as we did in our recent review (★★★★½; May 2004). But all people seem to care about are the colors that the miniature music player's anodized aluminum finish is available in—and what colors Apple might add to the lineup of silver, gold, green, pink, and blue. (New minis will be purple and orange if Apple heeds the pleas of certain *Macworld* staffers.) This clamoring over colors is understandable—after all, Apple revived its fortunes five years ago with a rainbow of iMac and iBook flavors. Let's just hope any plans for Blue Dalmatian and Flower Power iPod minis never make it past the drawing board.

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

1. **The European Commission slaps Microsoft with a record $610 million fine.** *A defiant Microsoft retaliates by purchasing Belgium.*
2. **Dell complains to the Better Business Bureau about the claims in Apple's Power Mac G5 advertising.** *Michael Dell also complained to the Cupertino home-owners association about the state of Steve Jobs's lawn.*
3. **Adobe discontinues FrameMaker development for the Mac.** *How many other page-layout programs will die before someone stops InDesign's murderous rampage?*
4. **Pepsi's distribution woes cause the iTunes Music Store to fall short of its download goal.** *If Pepsi handled Apple's distribution, Apple Store shelves would be stocked with G3 iBooks and CRT-based iMacs.*



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