



10 NEW CAMERAS

Three Cameras
from Canon Top
Our List, **p.38**

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July 2003

Macworld



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MP3, AAC, AND PIRACY

How Apple's Copy
Protection Won Over
the Record Companies



THE IPOD TUNES UP

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in a Brand-New Package

PLUS | Insider's Guide to Rendezvous | RealBasic 5.0 | FreeHand MX Reviewed

BLOG BONANZA

Weblog Tools Let You Build a Professional
or Personal Web Site in a Flash, p. 76

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Song Name ▲	Time	Artist	Album	Genre	Price	
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▶ My Generation	2:58	The Who	➔ Who's Next	Rock	\$0.99	BUY SONG
The Last DJ	3:48	Tom Petty & The Heartbreakers	➔ The Last DJ	Rock	\$0.99	BUY SONG

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Photo-illustration by David Julian

July 2003

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Incorporating MacUser

COVER STORY

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JONATHAN SEFF

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OS X's Rendezvous technology makes finding networked resources—from a printer to a fellow gamer to a TiVo—almost magically easy. Find out how it works and what you can do with it right now.

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SCOT HACKER

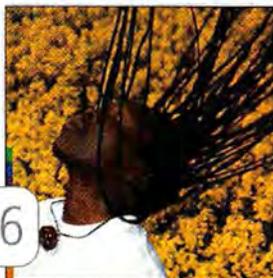
Want to post daily—even hourly—content on a Web site without writing HTML? Want to do it inexpensively—or for free? Whether it's for personal or professional purposes, a Weblog may be just what you're looking for.



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PETER COHEN

Forget the brooding antagonists and moral dilemmas. These lighthearted (but not lightweight) games—Freedom Force, Tony Hawk's Pro Skater 3, and more—focus on fun.

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Why Apple's Music Store Will Change the World

A Musical Journey



MAKE NO MISTAKE: APPLE'S LATEST PRODUCT RELEASES (including the iTunes Music Store, the new iPods, and iTunes 4) are an attempt to revolutionize the ways people purchase and use music. And while it's far too soon to know for sure, I think that Apple is on to something big.

Starting on page 56 of this issue is a ten-page special report that digs into all aspects of Apple's music announcements. And in the course of assembling this report, many of us spent far too much time (and perhaps a bit too much money) trying out Apple's latest musical offerings. The iTunes Music Store is so well designed, easy to use, and reasonably priced that we found it nearly irresistible.

Walking a Tightrope

To get the Music Store up and running, Apple had to balance its business needs with consumers' rights and the music industry's copy-protection requirements. The result, while not ideal, might be the best system possible under the circumstances.

When Apple released the first iPod, Steve Jobs declared that copy protection was unfair to consumers. But in creating the iTunes Music Store, Apple has had to backpedal from this stance. The files you download are copy protected.

By copy-protection standards, Apple's system is remarkably lightweight. You can play music on as many as three Macs and an unlimited number of iPods, and you can burn CDs of your purchased music at no extra cost. But consumer-advocacy groups rightly argue that any copy protection infringes on consumer rights. And anyone who has unsuccessfully tried to play an Apple-purchased song on a third-party MP3 player or via iTunes 4's music-sharing feature knows that Apple's copy-protection system can still get in the way.

In the meantime, plenty of people will argue that the Music Store won't be successful as long as music-piracy systems such as Kazaa are still in operation. But that's a misguided notion: on some level, there has long been and will always be music piracy.

No, the Music Store can succeed if it makes music buyers out of people who for some reason—whether it's inconvenience or a lack of exposure to new music—have largely broken their music-buying habits. It will also succeed if it can convert some of the more casual music pirates with its superior reliability.

Share and Share Alike

Hidden behind the hype is an innovation that could prove to be as revolutionary as the Music Store itself: iTunes 4's music sharing. Within a day of iTunes 4's release, our office was abuzz with people talking about new music they'd discovered by browsing their coworkers' iTunes Libraries. This feature alone may sell plenty of music: once you've listened to a shared album and know that you like it, the next logical step is to buy it so you've always got it available. Just as the iTunes Music Store eliminates the hassle of buying CDs, music sharing eliminates the trepidation that comes with buying a CD before you've listened to it.

Apple doesn't avoid risk—especially if Steve Jobs and company feel that they have the opportunity to change the world (and reap some revenue in the process). This could be one of those times. Of one thing, however, there is no doubt: it's an exciting time to be a music lover . . . and a Mac user.

Electronic Macworld

Digital distribution doesn't start and end with the music industry, though. In April *Macworld* started offering digital subscriptions via the new Zinio Reader application (which requires OS X 10.1 or higher). Our electronic issues are duplicates of the print magazine, complete with artwork and advertising.

If you're like me, you see the value in having a paper magazine to take wherever you go. But an electronic *Macworld* takes up less space on your bookshelf, and overseas readers will benefit from faster delivery. We're also offering individual back issues of *Macworld* for download, which should prove to be a great way to get a back issue that contains an article you simply must read.

For information about digital subscriptions to *Macworld*, visit www.macworld.com/godigital. For digital copies of individual issues, visit www.zinio.com/singles?issn=0741-8647. □

While it's far too soon to know for sure, I have a feeling that Apple is on to something big.

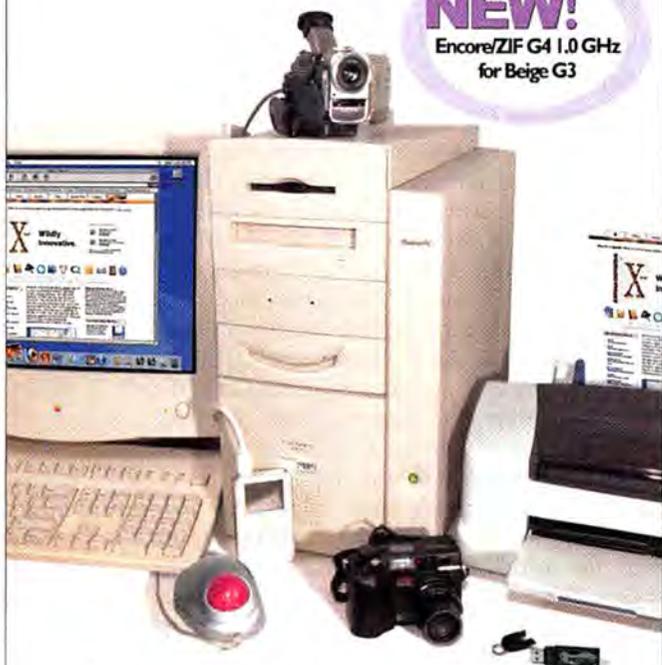
What do you think of Apple's music service? Drop me a line about that or anything else related to the Mac, at jason_snell@macworld.com, or join in the discussion forums at www.macworld.com.

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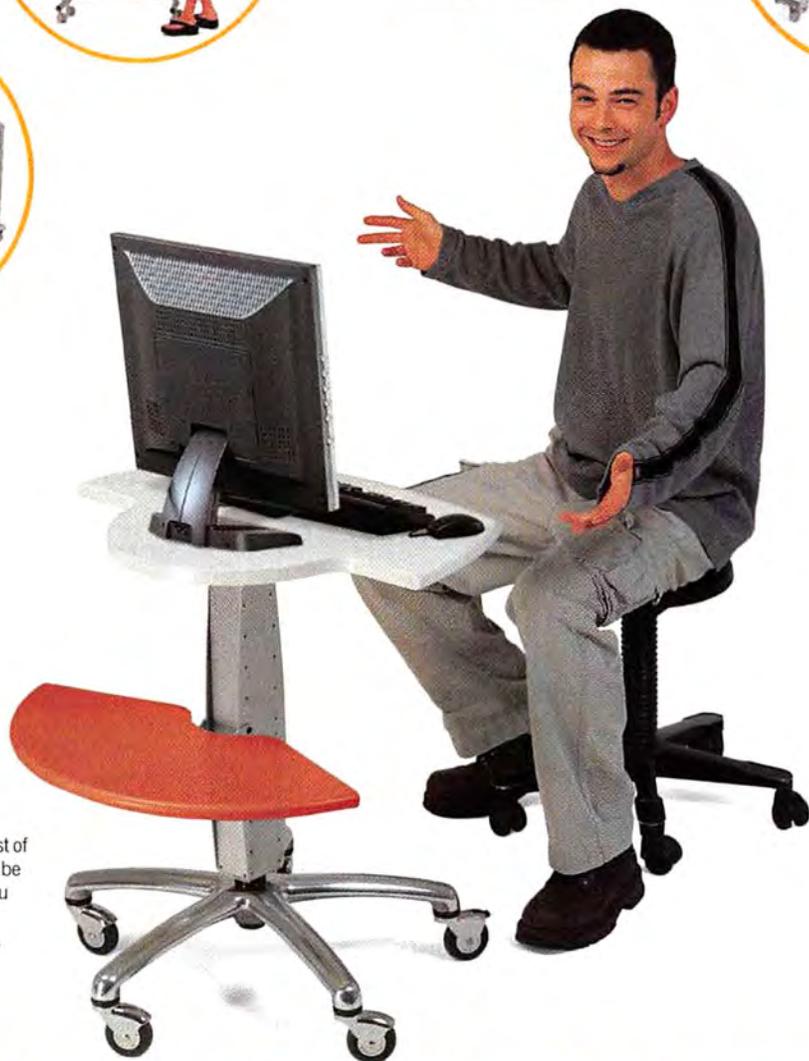
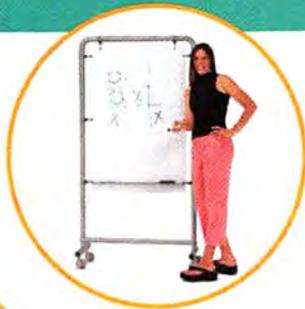
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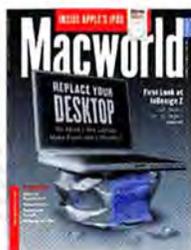
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FEEDBACK

X Marks the Spam

Responses to our April 2003 issue proved that no one likes spam. But if there's one thing that irritates some of our readers more than those unceasing, unwanted offers of weight-loss miracles, high-tech doodads, and dubious overseas business arrangements, it's letters knocking OS X. So after reading a torrent of anti-X sentiment in the April *Feedback*, more than one OS X adherent wrote in to suggest we adjust our spam filter to block any and all Jaguar bashing. We appreciate the passion—on both sides of the debate. But we always try to keep in mind that one person's junk mail is another person's feedback. □

Canning Spam

DAVID B. O'DONNELL

"Guard Your In-Box" (April 2003) was fairly good, but I'd like to see *Macworld* do more than encourage users to adopt client-side filtering programs as their approach to stopping spam. With OS X's Unix underpinnings, we are no longer beholden to system administrators for the implementation of server-side solutions. By using Unix utilities such as fetchmail and procmail and making use of open-source mail-transport agents such as Postfix and Exim, every individual can not only become his or her own antispam system administrator, but also gain a far greater level of control over spam than any filters-based solution offers. Some learning is involved, but the potential reward of a significantly diminished pile of incoming spam is inestimable.

DON CHICOINE

Geoff Duncan didn't mention challenge-based spam filters. Do they exist for the Mac? Challenge-based filters require that the sender do something simple that only a human can do, such as fill out a form. Because spam is automated, it can't do this and gets stopped. Once senders are accepted, they can be added to your whitelist. This seems much easier than attempting to create artificial intelligence through perpetual training of a filter.

Essentially, challenge-based systems consider all e-mail to be spam, allowing only messages from addresses on your whitelist to reach you unimpeded. They're usually platform-independent Internet services, so you have to change e-mail addresses (and/or pay for a new service from your provider) to use them—they aren't Mac specific. Challenge-based systems can be effective if you receive e-mail from a small number of

people, but they're often difficult to use as your whitelists grow, and tend to create problems with mailing lists and legitimate business e-mail.—Geoff Duncan

WILL HERRMANN

The article left out one effective spam countermeasure: Mail's Bounce To Sender action, which sends e-mail, encoded as if your e-mail address didn't exist, back to the spammer. After a while, the spam machines decide to stop sending spam to you, and spammers take you off their lists. To use this action, select the spam message, pull down the Message menu, and select Bounce To Sender.

CRAIG McDOWALL

I was recently faced with ever increasing volumes of spam. Completely frustrated with sorting more than 100 messages a day, I finally contacted my ISP. They took my e-mail catchall and sent it to a black hole. That removed nearly all the unwanted mail, most of which was sent to "postmaster," "contact," "info," "recipient," and "webmaster." It's an excellent way to limit mail to only your specific address.

JEROME LEROY

I found the illustration accompanying "Guard Your In-Box" a bit shocking. Are Asian businessmen, punks, black women, and teenagers considered spam? I guess—and hope—this illustration was made without the intention to hurt, but what your illustrator and editors consider OK is definitely disturbing.

Spam by Any Other Name

TOM HAND

I was quite intrigued by your April 2003 cover story on spam. As I pulled the maga-

zine out of the wrap, what fell to the floor but a reminder that my subscription was running out (not so, since I'd re-upped the previous month). That was wasted paper. As I opened my issue to check the table of contents for the location of the spam article, it fell open to Rick LePage's editorial because a *Macworld* subscription card marked this page for me. I pulled that out and set it on the heavy stock paper that fell out of the plastic wrap. Leafing toward the spam article, I found another *Macworld* card insert, which fell into my lap as I flipped pages, along with a glued-in card for APC and another for *Macworld*. After clearing the magazine of unwanted advertising, I was able to read the articles just as I wanted to when I opened it in the first place. It reminded me of when I open my e-mail app and then have to trash all the unwanted advertising before I can read my messages.

High Fives for X

WHIT GURLEY

I am amazed by the number of OS X-bashing letters *Macworld* prints (*Feedback*, April 2003). I was reluctant to switch a year ago, so I put OS X 10.1.4 on my second drive for testing. I used it for all of one week before deciding that there was no reason to stay with OS 9. And I'm using a 400MHz Power Mac G4—just as restricted, speed-wise, as most of the complainers' systems. Is OS X slower than 9? The Finder is more sluggish, but the actual speed of my workflow has increased by an order of magnitude, since I can now switch to any application at any time and never crash.

BRUCE LLOYD

I'm really getting annoyed by the users who threaten to switch to Windows because of OS X, or who say they'll never use OS X

because it's not OS 9. I've been using OS X since it was a beta, on my PowerBook G3. In all that time (about three years), it has crashed once. As an IT consultant in the creative world, I have to deal with OS 9 on a daily basis. OS 9 is unbearably grueling—it's cumbersome and slow, and it crashes like clockwork. If it weren't for the lack of a native QuarkXPress, I'd have all my clients using OS X. It's simply a better OS—it's very stable, and its protected memory alone is worth its price. I also find it much easier to use than OS 9. It connects to just about anything with ease, which is a godsend in some of the mixed-platform environments I have to deal with.

MICHAEL TOBIN

Reader Michael Simone puts OS 9 in the "real" OS category, apart from Windows and Unix, and claims that OS 9 is superior because it doesn't implement a command-line system. Obviously, he doesn't understand operating systems. A modern OS supports preemptive multitasking, protected memory, and true multiuser support. OS 9 tried to implement these things but

did so very poorly. Instead of reinventing the wheel, Apple took a Unix base and created a wonderful modern OS. If you don't like the command line, you never have to see it, but it's an incredibly powerful tool for those who use it.

A Day in the iLife

CORY PALKA

With his **☹☹☹** rating of iMovie 3 ("Get an iLife," April 2003), Anton Linecker has proved to me that he's sleeping with Apple. iMovie 3 is an unusable application that isn't even worthy of a beta version. From shabby-audio issues, constant crashing, and the beach ball of death, to overall poor performance, it's quite obvious that Apple gave us an unfinished app so it could box the thing into the iLife package.

ROLLIN HOOK

You did your readers a great disservice by not emphasizing a very negative feature of iMovie: when creating a slide show, it automatically creates a QuickTime movie that you can't opt to turn off. Compared

with iMovie 2, iMovie 3 takes an inordinately longer period of time to create a slide show because of this.

PETER ROBBINS

"Get an iLife" didn't address iDVD's limitation of the slide-show feature to 99 images, a serious flaw. It's like going to a museum, seeing 99 pieces, and having to return to the front lobby. If you can watch a lengthy video in iDVD, why isn't there an opportunity for a lengthy slide show? Trying to put a number of still images into iMovie is like trying to put toothpaste back into the tube. You can't output an iPhoto slide show to anything but a replication of the iPhoto structure, and only for other Mac users. I can bring PC images via CD into iPhoto, but not vice versa. I find this extremely confining and infuriating.

Review Makes Its Mark

JAMES SCANNELL

I just wanted to thank you for your attentive review of the 12-inch PowerBook G4

continues

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(April 2003). I've been driven crazy in the last two years by the grid marks the keyboard leaves on my laptop screen. I've tried all sorts of cleaning products and covers—solutions a well-designed portable would not require me to investigate. So when Jason Snell wrote, "The keys also didn't leave gridlike marks on the display during our testing period," I was happy to see someone finally address this problem. It's that attention to detail and to real-world use that will keep me a subscriber to *Macworld* for years to come.

MICHAEL CONNER

Thanks for a great review of the 12-inch PowerBook. I was very interested in this new machine until I read your article. You pointed out all the shortcomings I want to avoid. I want a small form factor for on-the-go ease. But when I get back home, I want to be able to plug in a decent-size monitor via DVI, and I need to be able to plug in PC Cards. Hamstringing performance with lame graphics support and a subpar system bus and Level 3 cache just doesn't make sense to me.

Virtually Faster

RUTHANNE ROBERTSON

In his review of Virtual PC 6 (April 2003), Jonathan A. Oski says there aren't any major speed improvements over version 5. That may be true, but I did find significant improvement over version 4 running in OS 9.2. I had hoped for a small boost and was pleased to find that I didn't feel as though I had a fake PC anymore. Running at full screen on my 500MHz Titanium PowerBook G4 with 512MB of RAM, its speed is respectable and fools the casual observer—version 6 isn't a speed demon, but it holds its own, and I can work without frustration.

Here's to Mac GPG

CHARLY AVITAL

I very much appreciated Glenn Fleishman's review of PGP Personal 8.0 (April 2003). A group of voluntary developers at <http://macpgp.sourceforge.net/> made it possible for OS X users like me to use the safe, stable, and open-source GnuPG (OpenPGP standard) encryption system well before PGP 8.0 was released. They continue their work right now, creating, upgrading, and voluntarily supporting

many GUI apps that make it easier for OS X users still unfamiliar with Unix's arcane processes to install and run an OpenPGP-compliant encryption system that features enhanced compatibility with the different versions of PGP. I respect and value the work and efforts invested by the PGP.com team, especially after Network Associates dropped PGP. But I think that the MacGPG.sourceforge.net team deserves to be reviewed and justly appreciated.

Warming to ColdFusion

TONY CERVO

I was happy to see Andrew Shalat's interview with Macromedia's Rob Burgess ("MX in the Mix," *Mac Beat*, April 2003). I have an issue, however, with the Mac version of the Studio MX suite. The Windows version ships with ColdFusion MX Developer Edition, but no such product exists for the Mac. When will we see a Mac version of ColdFusion? Also, Burgess states that MX stands for nothing. At a recent conference I attended, a Macromedia employee repeated with a wink that officially, MX doesn't stand for anything, but it's no secret that the MX launch coincided with Macromedia's tenth (X) anniversary.

According to Macromedia, the company is currently evaluating interest in developing a full version of ColdFusion MX for OS X. But it hasn't announced any official plans yet.—Andrew Shalat

Going Over the Books

MICHAEL GAGNON

I was disturbed by the test results of the 1GHz PowerBook G4 that appeared in your February 2003 and April 2003 issues. I was initially surprised by your February review, in which the 1GHz PowerBook received essentially the same Speedmark 3.2 score as the 800MHz model (107 and 104, respectively). Then, in your April review of the 12-inch PowerBook, the 1GHz PowerBook had radically different scores: Speedmark went from 107 to 143, and the Quake frame-rate test went from 54.3 to 75.5. These discrepancies call for an explanation. We rely on *Macworld's* numbers to make purchasing decisions. After reading your initial review, we would not have purchased the 1GHz PowerBook, but

after seeing the April test results, we would have. Please explain the difference.

For several years, we've used Mac OS 9's System Restore feature to install the same disk image of our Speedmark tests on every Mac we've tested, thereby providing a consistent testing platform. The 1GHz and 867MHz PowerBooks are the first systems we've encountered that refuse to boot from the Speedmark System Folder, and we had to find a workaround. Installing Speedmark and then upgrading via the PowerBooks' System Restore DVD made the PowerBooks bootable, and we were able to run our tests. But when testing a more efficient method of installing Speedmark, we discovered that this workaround, which we'd used for the February 2003 PowerBook review (and only that review), had caused a performance slowdown. We retested all the products with suspicious results, and the results of those tests appear in our April 2003 review. We sincerely apologize for the erroneous results in the February 2003 issue and for any confusion they caused. We stand firmly behind the Speedmark results that appeared in our April 2003 issue, and we believe that we've completely resolved the issues that led to the aberrant test results. If you have further questions, or suggestions on how Macworld Lab's benchmark results might be more useful, please e-mail me at jgalbraith@macworld.com.—James Galbraith, Macworld Lab Test Manager

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CORRECTIONS

"More Mac Software Bargains" (May 2003) gave incorrect information on jEdit 4.1's system requirements. The program runs only on OS X.

The Game Room (April 2003) incorrectly reported the companies responsible for F1 Championship Season 2000. The game is published by Feral Interactive and distributed in the United States by MacPlay.

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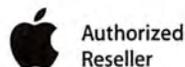
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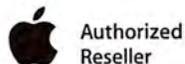


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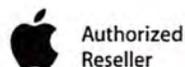
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AVID AND APPLE COMPETE—AND THE USERS END UP WINNING

Courting Video Pros

In an elaborate courtship battle that rivals any of the ardor-fueled calculation and strategizing you might see on *The Bachelor*, Avid and Apple are pulling out all the stops in their efforts to win the affection of the professional video market.

Avid—the veteran, time-tested stalwart of the editing world—hopes to woo customers with new hardware and a trimmer price for its Xpress Pro and Media Composer Adrenaline products. But cutting an equally impressive figure is Apple, with Final Cut Pro 4—the hungry, quickly evolving newcomer to the market.

This contest for the hearts and minds of pro video editors could rage on for years. But one immediate result is a powerful array of new products for an increasingly important Mac market.

Avid's Efforts

Last year, the industry standard Avid started feeling the heat from Apple's Final Cut Pro 3, as real uncompressed support and real-time effects made the program a truly viable alternative to Avid's offerings. So Avid revamped its product line, which now works with its Digital Nonlinear Accelerator (DNA) hardware. The \$1,695 Avid Xpress Pro can output real-time effects to video (DV or analog) without rendering, thanks to the new external Avid Mojo DNA video-accelerator unit. DNA real-time hardware also crosses over into Avid's \$24,995 Media Composer Adrenaline system. The Adrenaline DNA unit funnels 10-bit uncompressed video and 24-bit audio, all over a standard FireWire connection (see "Fanning FireWire 400's Flames").

Cross-compatibility between its products remains Avid's core strategy: Xpress Pro can now open and edit film-based 24-frames-per-second projects that were started in the higher-end Media Composer (Xpress DV 3.5 had the ability to open standard 30-fps video projects). Essentially, editors can off-load media and bin information from their work systems to FireWire drives and then edit on their personal Xpress Pro systems. Any changes can then be applied to the master project. To achieve this, Xpress Pro supports uncompressed video, up to 24-bit audio, and a number of offline resolutions available in the Media Composer.

"Even though you can't capture 24-bit audio in Xpress Pro, it's still essential to support 24-bit audio playback and editing for our cross-product workflow," says Doug Hansel, product designer for Avid, "because, for professional work, you don't want to truncate your quality at any step of the process."

The Kindest Cut of All?

Meanwhile, Apple has been busy redesigning Final Cut Pro (see "Video Double Features," *Mac Beat*, June 2003). "We are creating compelling end-to-end production solutions that leverage the power of our hardware and OS to bring industry professionals the tools they need at an affordable price," says Final Cut Pro product manager Paul Saccone.

Significant enhancements to Final Cut Pro were brought about through technologies Apple bought

WHAT'S NEXT

A scant few days before Apple's developers conference, the elite of the Mac programming world head to Dearborn, Michigan, for the MacHack conference, June 19–21.



ASAF HANUKA

Fanning FireWire 400's Flames

last year (see "Apple's Pro Push," *Mac Beat*, October 2002). The India Titler Pro application has been reinvented as the LiveType titling tool in Final Cut Pro 4. Likewise, elements of eMagic's Logic reside in the new Soundtrack feature.

"Apple's big move this year is opening the creative side of editorial," says Jim Fancher, chief science officer for post-production provider Technicolor Creative Services. "The music-composition tools [of Soundtrack] and the animated titles [of LiveType] are very attractive to the whole middle tier of professional users—the wedding videographers, folks who make corporate videos and local commercials."

Apple has also added RT Extreme to Final Cut Pro 4. Version 3 already had a limited number of real-time effects, but the limits have been removed in the update. So the more computer horsepower you have, the more real-time effects and video streams you can use: this allows Apple "to boost high-end, high-margin computer sales," says Joseph Beaulieu, a Morningstar computer-industry analyst.

Both Apple and Avid have boosted support for interchange formats, which allow you to interchange project information between different editing apps. Avid supports the AAF interchange format, while Final Cut has gone with an XML-based interchange format that includes AAF as a subset. "With so many companies supporting the AAF standard, AAF has the potential to allow users to offline in FCP, finish on an Avid, offline in an Avid, finish in FCP, or on a Quantel iQ, or anything that is AAF compliant," says Wes Plate of Automatic Duck, a company that specializes in interchange-format transfer software.

Apple's support for FireWire 800 has revved high-speed data-transfer rates for the Power Mac product line and the 17-inch PowerBook. But it has also introduced the potential for confusion among Mac users who might infer that the original FireWire 400 is no longer ideal for data-intensive tasks such as digital-video editing. In truth, FireWire 400's potential has never been fully tapped. The DV format, for example, uses only around 16 percent of FireWire 400's theoretical maximum bandwidth of 400 Mbps. But new products from Avid and AJA Video Systems (800/251-4224, www.aja.com) may finally push the original FireWire to its full potential while expanding its use to other digital-video formats that previously required specialized—and very expensive—capture cards.

Made exclusively for Final Cut Pro 4, the \$2,290 AJA IO (pictured below) routes uncompressed video, eight channels of audio, DV 50, and machine control over a single FireWire port. "Traditional FireWire is a 400-Mbps spec. The highest-quality, uncompressed D1 video signal runs 270 Mbps," says AJA's Ted Schilowitz. "So uncompressed video over [FireWire 400] itself shouldn't be considered an amazing feat. It just took some engineering on Apple's and AJA's part to get it done."

Meanwhile, Avid has based its Xpress Pro with Mojo and Adrenaline product lines around standard FireWire 400. The \$1,699 Mojo DNA accelerator for Xpress Pro can capture and play out uncompressed video; even though the video going across the FireWire cable is truly uncompressed, the unit has only S-Video and RCA connections, so full uncompressed quality is not realized. The \$24,995 Media Composer Adrenaline does have full SDI, Component, Composite, Digital Audio, and DV in and out—again over a single FireWire connection. Since compressed high-definition video data rates fall well within the FireWire 400 spec, Avid already has plans for an HD upgrade path for the Adrenaline box; it's due to arrive in 2004.—ANTON LINECKER



The Cost of Romance

Of course, even the best app in the world won't sell if customers think it costs too much. So Apple and Avid have also been going head-to-head with aggressive pricing strategies. And it's here that Final Cut Pro, with its open-source hardware, may enjoy a distinct advantage over the traditionally more expensive Avid systems that use proprietary hardware.

With Final Cut Pro 4, Apple bundles Cinema Tools but keeps the entry price at \$999. An upgrade from version 3 costs only \$399. Open-source add-on capture boards

for uncompressed video capture range from only \$1,000 for standard definition to just more than \$10,000 for high definition.

Avid has responded to this pricing pressure with some deals of its own. Xpress Pro enters the market at \$1,695 and includes all the software that formerly came with the PowerPack version of Xpress 3.5 (formerly \$2,495). Perhaps more striking is the sharp drop in the price of the high-end Media Composer Adrenaline. While \$24,995 is nothing to sneeze at, it's a far cry from the \$68,000-plus that the previous incarnation cost.—ANTON LINECKER

Pro Provisions

Apple and Avid are vying for the attention of video professionals with the following assortment of Mac applications.

COMPANY	PRODUCT	PRICE	CONTACT	HIGHLIGHTED FEATURES	RELEASE DATE
Apple	DVD Studio Pro 2	\$499	800/692-7753, www.apple.com	professionally styled templates, two-pass VBR encoding, design alignment guides, timeline editing	August 2003
	Final Cut Pro 4	\$999		XML and OMF export, DVX100 support, RT Extreme, LiveType, Soundtrack, multichannel audio out, 24-fps editing, 32-bit video rendering	June 2003
	Logic Platinum 6	\$699		professional music-composition software	available now
	Shake 3	\$4,950 (Mac License)		high-end compositing tools, unlimited render license (for OS X only), 16- and 32-bit color resolutions	June 2003
Avid	Media Composer Adrenaline	\$24,995	800/949-2843, www.avid.com	10-bit uncompressed video, 24-bit digital audio, DV I/O real-time effects, playback for both Meridian and AVBV format Avid files	July 2003
	Xpress Pro	\$1,695		offline, uncompressed and Media Composer video file-format support, real-time effects preview through Mojo Hardware accelerator	July 2003

GAME
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Software

Championship Manager 4, from Feral Interactive (www.feral.co.uk): More than just an update to club and player data, this new version—which puts you in charge of your own soccer club in one of 39 national leagues—includes the ability to display simulated matches in real time, an enhanced contract-negotiation system, and improved network game options (\$50).

Enigma, from Pangea Software (www.pangeasoftware.net): In this 3-D-action puzzle game, players must move various streams of flowing liquid—water, oil, and lava, for example—into the correct channels (\$20).

Legion, from Freeverse Software (www.freeverse.com): This strategy game is set in ancient Rome, where you must raise a mighty empire from conquered lands, collect resources, and train recruits. The game supports as many as 20 computer-controlled opponents at once, each with unique strengths and weaknesses (\$20).

Shadowbane, from Ubi Soft Entertainment (www.ubi.com): In this massively multiplayer online role-playing game, players develop a kingdom's economy and army while warring with enemy forces in a 3-D environment that supports thousands of simultaneous players (\$40).

Tony Hawk's Pro Skater 4, from Aspyr (888/212-7797, www.aspyr.com): In a quick conversion from the game-console world, the latest edition of the skateboarding action game lets players freely roam gigantic levels and work to successfully perform 14 of the greatest skateboarding stunts in history (\$40). Also from Aspyr, **Spy-hunter** straps players behind the wheel of the ultimate spy vehicle (\$30). **Bloodrayne**, a third-person 3-D shooter, puts players in the body of a half-human, half-vampire creature who works with a covert agency to stop nefarious occult groups (\$30). And **NASCAR Racing 2003 Season** features new 3-D graphics, enhanced physics and artificial intelligence, and every detail of the 2003 NASCAR racing series including teams, drivers, sponsors, and tracks (\$50).—COMPILED BY JASON SNELL

MAC USERS SHOULD STAY VIGILANT AGAINST VIRUS OUTBREAKS

No News Is Good News

The arrival of OS X gave many Mac users their first taste of Unix. But some experts worried that the new OS's Unix base would lead to less-welcome arrivals: more Mac-specific viruses. The feared outbreak hasn't materialized yet, but Apple and developers of antivirus software aren't taking the potential threat lightly. And Mac users should follow their example.

Addressing concerns that a Unix-based OS would be more vulnerable than the traditional Mac OS, Apple has done a good job of releasing patches for the Unix operating system and the tools underlying Mac OS X and Mac OS X Server, such as sendmail and Apache.

No matter how likely new Mac-specific malware is to surface, the virus-protection advice for OS 9 users applies to OS X users: install and use an antivirus program, and keep its virus definitions up-to-date without fail. Staying protected—and current—is still the name of the game.

For most Mac users, the maddening problem of computer viruses is limited to the torrent of Windows malware that arrives via e-mail and the flood of spam offering to sell antivirus software. (Good news on the second front—Symantec has sued the worst offenders, who besides being contemptible spammers are also

selling counterfeit copies of the company's utilities.) These days, most of the work for Mac antivirus-utility developers involves keeping up with Windows viruses so Macs won't inadvertently pass along viruses to which they're not directly susceptible. The newly released Norton AntiVirus 9.0, from Symantec (408/517-8000, www.symantec.com), has a feature that finds and fixes PC viruses, so Mac users won't transmit them when they forward e-mail messages to Windows users (see "Symantec's Quicker Fix").

Besides Symantec's offering, the main antivirus options available to Mac users come from Intego (512/637-0700, www.intego.com) and McAfee (801/772-1891, www.mcafee.com). Last fall, Intego updated VirusBarrier to run natively in OS X. Virex 7, from McAfee, also runs on OS X, and Apple's \$99-per-year .Mac service includes a copy of the program.

Mail servers with virus-filtering capabilities, such as Glenn Anderson's EIMS (Eudora Internet Mail Server) and 4D's WebStar V, offer additional protection. Since about 80 percent of virus propagation in the Windows world occurs via e-mail, Mac server administrators who stop viruses in their tracks are providing an important service for Windows users.—MARK H. ANBINDER



ILLUSTRATION BY MART MANLEY

Symantec's Quicker Fix



Mac users may be immune to many of the virus problems that plague PCs, but even if a virus doesn't put your Mac out of commission, you can pass the problem on to a Windows user via e-mail. For that reason, at least one feature in the latest version of Symantec's Norton AntiVirus for the Mac will be welcomed by users of both platforms—the ability to find and

fix both Mac- and Windows-compatible viruses in OS 9 and OS X.

Cross-platform virus protection leads the list of new features in Norton AntiVirus 9.0 (\$70; upgrade, \$40), but other changes to the now completely OS X-native utility aim to make things easier on users. New micro definitions make monthly LiveUpdate downloads fast. AntiVirus can now scan and repair compressed files, as well as quarantine irreparable files for increased protection.

Improving its utilities' ease of use seems to be Symantec's overall objective; the company has updated its entire Mac product line. Norton Personal Firewall 3.0 (\$70; upgrade, \$40) adds a setup assistant for easily configuring access and protection settings. The utility can now also detect potentially dangerous services such as file sharing when they start up; a pop-up dialog box lets you change firewall settings on-the-fly so you can allow those services to activate. Norton Utilities 8.0 (\$100; upgrade, \$50) adds a defragmentation scheduler that lets users set when they want to run Speed Disk, to avoid interruptions at work. All the features in Utilities now run natively in OS X, and the included CD can boot on both OS X and OS 9.

Symantec's two utility suites have also undergone updates. Norton Internet Security 3.0 (\$100; upgrade, \$70) includes the latest versions of AntiVirus and Personal Firewall, as well as Aladdin iClean and Norton Privacy Control. Norton SystemWorks 3.0 (\$130; upgrade, \$80) features AntiVirus, Utilities, Dantz Retrospect Express, and Aladdin Spring Cleaning.—PHILIP MICHAELS

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Software

Authoring

WireFusion 3.2, from Demicon (www.demicon.com): The authoring tool for interactive Web presentations has added OS X compatibility; previously, it was available only in Windows and Linux versions (professional version, \$399; personal version, \$99).

Internet Service

FasterMac.net, from Other World Computing (866/896-6768, www.fastermac.net): The Mac-only Internet service provider offers 56K dial-up service throughout the United States (\$119 annual fee; \$13 per month).

MSN for Mac OS X, from Microsoft (888/676-4622, www.microsoft.com): The Internet-subscription service has been built for OS X. Features include a multilevel junk-mail filter, customizable parent controls, and Mac-specific customer support (\$22 monthly fee for dial-up access; \$10 monthly fee for users with another ISP).

Server

Web Crossing 5.0, from Web Crossing (866/725-0030, www.webcrossing.com): The latest version of the server software features a plug-in architecture that allows users to add or update features without upgrading the server. It also has an automatic plug-ins update, to keep users abreast of new upgrades, and a complete interface makeover (seat licenses begin at \$295; upgrade prices begin at \$119).—COMPILED BY LISA SCHMEISER

INPUT-DEVICE
BEAT

Hardware

Keyboards

A mouse and keyboard combination from Microsoft (800/426-9400, www.microsoft.com): The **Wireless Optical Desktop Special Edition** (\$85) features an optical mouse, keyboard, and wireless transceiver, all with a white exterior. The Wireless Optical Mouse Special Edition is available separately with a white (\$45) or a black (\$35) matte finish. The MultiMedia Keyboard Special Edition (\$35) is also available separately, with a black matte finish.

Tablets

A new exterior color for two tablets from Wacom Technology (800/922-6613, www.wacom.com): Two sizes of Wacom's **Intuos2** pen tablets will sport a new platinum look. The 6-by-8-inch (\$370) and 9-by-12-inch (\$490) models will be available in mid-June.—COMPILED BY PHILIP MICHAELS

APPLE PROMOTING IP-OVER-FIREWIRE AS ETHERNET ALTERNATIVE TO XSERVE USERS

Make Room for FireWire

FireWire isn't just for connecting iPods and DVD burners anymore. A software package from Apple lets you use plain old—and fancy new—FireWire cables to connect Macs in a network.

Apple's IP-over-FireWire software turns a FireWire bus into something akin to an Ethernet port. Just like a wired or wireless network, a FireWire network can use TCP/IP, the standard Internet protocol, to carry data.

Apple developed the IP-over-FireWire software for its Xserve rack-mounted servers, which required an inexpensive but high-speed way to exchange data. Tom Goguen, Apple's marketing manager for server operating systems, reports that customers wanted an alternative to expensive Gigabit Ethernet and would say, "You've got these two FireWire ports at the back, and it sure would be nice if we could just daisy-chain all of these devices together."

As many as 63 devices can be chained together via FireWire, with each computer

connected to the next. But this kind of network shares one pool of 400 or 800 Mbps among all connected devices. With switched Ethernet, each computer can have the equivalent of a direct, full-speed connection to every other computer.

Using new FireWire adapters can also radically increase the distance between systems, adds Xserve product manager Doug Brook. Apple estimates 100 meters at up to 200 Mbps with plastic optical fiber, and full FireWire 800 speeds with glass fiber. These adapters aren't yet readily available, as Apple is the first company to support FireWire 800 gear.

Apple sees IP-over-FireWire as a server product; it's not releasing the software as a general download at this time. However, individual users can register for the free online developer program (<http://developer.apple.com/membership/online.html>) and then download the IP-over-FireWire package to install on Mac OS X 10.2.—GLENN FLEISHMAN

KEYCHAIN-SIZE DEVICES COMBINE STORAGE, MUSIC

MP3 Players Start a Flash Dance

Apple's iPod proved that a great MP3 player should carry more than just a tune, winning raves as much for being a pocket-size portable drive as for its music-playing prowess. Other manufacturers are following Apple's dual-functionality lead, albeit on a smaller scale; they've added MP3-playing capabilities to keychain-size USB flash storage devices (see "Music Store"). While less expensive than the iPod, these MP3-playing flash drives don't match the available storage space of Apple's MP3 player. Capacities range from 64MB to 256MB—not anywhere near enough room to fit 1,000 songs in your pocket. But the flash-enabled MP3 players take up little space. For example, BesTrade USA's Gray Whale measures 3.5 by 0.8 by 0.3 inches, compared with 4.1 by 2.4 by 0.73 inches for the iPod. No drivers are required—just plug a device into a USB port and drag a file onto the drive. Given its superior storage capacity and iTunes integration, the iPod is likely to remain a top performer among MP3 players. But with flash-enabled devices, Mac users looking for a less expensive combination of music and storage have an intriguing alternative act.—ADELIA CELLINI



Kanguru Solutions' KanguruMicro MP3 (top); BesTrade USA's Gray Whale (bottom)

Music Store

Several keychain-size devices combine USB flash storage with MP3-playing capabilities.

COMPANY	PRODUCT	CAPACITY AND PRICE	CONTACT
BesTrade USA	Gray Whale	64MB, \$110; 128MB, \$140; 256MB, \$210	877/294-2979, www.bestradeusa.com
Creative Labs	Nomad MuVo	64MB, \$100; 128MB, \$150	800/998-5227, www.nomadworld.com
Kanguru Solutions	KanguruMicro MP3	64MB, \$80; 128MB, \$110; 256MB, \$160	888/526-4878, www.kanguru.com
SmartDisk	Rover	64MB, \$70; 128MB, \$100	239/425-4000, www.smartdisk.com



Entries Now Accepted Worldwide
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Take On the World! Create A New Digital Imaging World!

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Entry Categories

Gold Award: **US\$20,000**

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Digital Graphics/ Illustration (Print) Division—Printouts of computer-generated graphics, illustrations, etc.

Digital Movie Division—Modified and/or edited live-action digital movies shot with a digital video camcorder; or computer-graphics animated movies.

Web Division—Web-based graphics or other images (interactive or noninteractive) viewable over the Internet using Internet Explorer 5.0 (or later versions) or Netscape Navigator 4.7 (or later versions).

Entry Period

Monday, March 24–Thursday, September 4, 2003
 All entries must be received by 5:00 pm local time on September 4, 2003
 For official contest rules, please visit www.canon.com/cdcc/

Judges

tomato (Creative Unit, UK), Kate Gibb (Printmaker), Katsura Moshino (Illustrator/Art Director), Hiroyuki Nakano (Director, Peacedelic Affiliation), Scott Ross (CEO, President, and Co-founder of Digital Domain, Inc.), Joshua Davis (Artist/Technologist)
 Contest Supervisor: Hiroshi Kashiwagi (Professor, Musashino Art University, Art and Design Critic)

For inquiries, contact:

Canon Digital Creators Contest New York Secretariat
 E-mail: info-us@c-dcc.com Te l: 1-800-959-3631
 Fax: 631-454-1814 URL: www.canon.com/cdcc/

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LINKSYS ROLLS OUT LOW-COST GIGABIT ETHERNET SWITCHES

Ethernet's Fast-Falling Prices

Gigabit Ethernet—a high-speed transmission technology that can deliver data at 1,000 Mbps—may become an affordable way to connect equipment over a network, as prices for Gigabit Ethernet switches that achieve this greater throughput fall within reach of small-office and home-office users.



The Linksys Gigabit 8-Port Workgroup Switch

Gigabit Ethernet has been around for a while, with gigabit PCI cards hitting the Mac market nearly four years ago. As processor and system-bus speeds have increased over the years, Apple has added 10/100/1,000-Mbps Ethernet ports to its professional desktops and laptops.

The counterpart to Gigabit Ethernet is a switch that's capable of handling those faster speeds. Ethernet switches create the data equivalent of a separate, full-speed connection between every port. When Gigabit Ethernet was restricted to server rooms, those switches cost \$150 to \$200 or more per port. Managed switches with bells and whistles can still run that high, but Linksys introduced the Gigabit 5-Port Workgroup Switch and Gigabit 8-Port Workgroup Switch with prices aimed at small-office users—\$130 and \$170, respectively (800/546-5797, www.linksys.com).

Linksys product manager Chris Chapman says that Gigabit Ethernet doesn't require rewiring a network that works with 10/100-Mbps Ethernet using standard eight-wire Category 5 cable. The Linksys switches automatically adjust to 10, 100, or 1,000 Mbps, depending on the device or switch attached. They also sense the Ethernet cable type. "Each port will be able to act as an uplink port," says Chapman, so you no longer need to manage crossover and patch cables when you connect cable or DSL modems, or other switches—just like on all new Macs.—GLENN FLEISHMAN

NEW YORK MAC SHOW GETS NEW NAME, REFINED FOCUS

An Expo for Creative Pros



Apple will be in New York for the biannual Macworld Expo this July, but the midsummer Mac trade show will kick off on July 14 with a new name—Macworld CreativePro Conference & Expo. Organizers say the name change

is more than cosmetic. This year's event will focus on the technology needs of Mac-using creative professionals; there will be conference sessions on everything from digital video, music, and photography to design and publishing, audio, and Mac skills. More information on the CreativePro offerings is available at www.macworldexpo.com (where attendees can also register, starting the start of the show).

Apple's involvement in the summertime exposition was in doubt after IDG WorldExpo (which is owned by the company that owns Mac Publishing) announced last year that, beginning in 2004, future trade shows would be in Boston instead of New York. But Apple is heavily involved in the CreativePro trade show—the company has a leading role in developing the conference program, and it will have the largest booth on the exhibit floor.—MACWORLD STAFF

PRO FILE | Q&A WITH ROZ HO

TRACK CHANGES

A lot can change in a year. Just take a look at the relationship between Microsoft and Apple. In the past 12 months, a five-year technology alliance between the onetime rivals expired, Apple released a pair of products that challenged Microsoft's long-standing dominance in presentation software and Web browsers, and Microsoft brought in a new general manager for its Macintosh Business Unit. Roz Ho, an 11-year veteran of Microsoft, now heads the software giant's Mac efforts. But, as Ho explained in a recent interview with *Macworld*, sometimes the more things seem to change, the more they stay the same.—PHILIP MICHAELS



AT A GLANCE

ROZ HO General Manager, Microsoft's Macintosh Business Unit
MAC: 800MHz iMac; 867MHz PowerBook G4, 12-inch
SOFTWARE: iTunes

How would you describe your relationship with Apple since the technology pact with Apple expired?

Our relationship with Apple has never been better. For example, we recently worked closely with Apple on the Office v. X test-drive preinstall—allowing Mac users to try Office v. X on their Mac for 30 days without purchasing the productivity suite, which now comes preinstalled on all new Macs shipped in 2003. Additionally, we just wrapped up another very successful promotion with Apple, in which we offered Mac users the opportunity to purchase Office v. X for Mac for \$199 when they purchased a new Mac. The [Macintosh Business Unit] development team has always had a great technical relationship with Apple, and it's even closer now that we are coordinating on test scenarios. We have weekly meetings with Apple to go over bugs and have regular meetings to discuss our requirements as a [developer] on the Mac platform and future Mac technologies.

Apple released its Keynote presentation software and a beta for the Safari Web browser. What has been the reaction to Apple's foray into areas that have been your strongholds?

We've heard positive things from Mac users who have tried Keynote and Safari. We believe customer research is key to developing quality products and we continue to listen to our customers for their thoughts on Apple's products and ours.

But from the outside looking in, the assumption might be that it would strain the relationship. Has that been the case?

No. Our relationship with Apple continues to be solid, and our commitment to Mac customers is as strong as ever.

More Info:

www.macworld.com/2003/07/macbeat/rozho
 Roz Ho talks about the latest Mac developments to come out of Microsoft—from the launch of MSN for OS X to native Exchange Server support for Entourage.

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Ron Okamoto, Vice President
Worldwide Developer Relations, Apple

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EDUCATION BEAT



Software

Graphing

DeltaGraph 5 for Mac OS X, from Red Rock Software (801/322-4322, www.redrocksw.com): The charting, graphing, and data-analysis software adds OS X compatibility (\$299; upgrade, \$199).

Information Management

Totwise 1.2, from Totwise (www.totwise.com): The management and billing program for preschools adds weekly billing and new administrative security options (as many as 100 children, free; more than 100 children, \$1,000 plus \$1 per child).

Math

Instant Interactive Drills 2.0, from Instant Interactive (www.instantinteractive.com): The math program now includes more math problems. The program also runs on OS 8 and higher, including OS X (\$20; upgrade, free).

Reference

Visual Thesaurus Desktop Edition, from Plumb Design (888/237-5862, www.visualthesaurus.com): The desktop version of the thesaurus application offers the same functionality as the Web-based program. It runs on OS X (\$40).—COMPILED BY PHILIP MICHAELS

MULTIMEDIA BEAT



Hardware

Cameras

A digital-video camcorder from Canon (800/652-2666, www.usa.canon.com): The **Elura 50** (\$899) features a 1/2-inch, 680,000-pixel CCD image sensor. Along with FireWire and USB interfaces, the camcorder also features analog in and out connections to a TV or VCR.

Software

Authoring

iShell 3, from Tribeworks (415/674-5555, www.tribeworks.com): The QuickTime-native multimedia-authoring suite adds OS X compatibility, native XML support, Unicode capability, and MPEG-4 AV support (Silver Membership subscription, \$975).

Video

Flix Pro 3.2, from Wildform (310/396-2025, www.wildform.com): The Flash video encoder (\$149; upgrade pricing available) adds support for importing MPEG-4 (which requires QuickTime Player).—COMPILED BY PHILIP MICHAELS

AMAZINGWORLD LETS YOU TAKE CHARGE OF YOUR HOME FROM YOUR MAC

Mac System Takes Control

The Mac has long enjoyed a reputation as the centerpiece of any room. But Amazing Controls (408/399-1800, www.amazingcontrols.com) is taking that idea one step further by equipping Macs to be the *control* center of every room.

Amazing Controls sells hardware and software that provide building control, security, and automation for homes and businesses. Its flagship product, AmazingWorld, is a Mac-powered server-client setup that lets users instantaneously control every conceivable part of a property—from access to lighting to climate control—from the comfort of a Mac.

Say someone knocks at your door. Motion sensors outside the door detect the visitor, and a camera captures a picture that pops up on your Mac, along with a dialog box that lets you unlock the door with a keystroke or mouse click. AmazingWorld then stores a record of the entire transaction—when it took place, whether the visitor was let in, and even an image capture from the camera.

AmazingWorld also lets you program settings for air-conditioning, sprinkler, and other systems—for example, you can program the lights to turn on when motion sensors detect someone entering a room and to then turn off after no movement is detected for a set period of time. The software can recognize an unlimited number of users, and each user can be assigned privileges. “Anything you can imagine can be done,” says Amazing Controls’ president, Raj Marya.

AmazingWorld runs through a server, an iMac powered by OS X. Distributed Control Units placed throughout the property collect and send data to the server via a LAN connection, giving users of the client software immediate feedback about changing conditions.

All this control doesn’t come cheap. A basic AmazingWorld setup starts at around \$30,000. People who want a

less extensive and less expensive security setup can opt for Amazing Controls’ iDoor, which strips away AmazingWorld’s climate, lighting, and other building-control features to integrate access control with video surveillance. Starting at \$2,500, iDoor consists of an iMac-based server running on OS X, a controller, a vandal-proof keypad, and a browser-based



Rooms with a View The FloorPlan window offers graphical control.

client that lets you control the iDoor system from any computer.

Amazing Controls opened for business eight years ago, and it has always turned to Macs to run its assorted control systems. “The Mac’s superiority with networking made it a no-brainer,” Marya says. Consumer demand is driving the company to develop client software that runs on other platforms, via browser-based clients, or on handhelds, though the server will always be Mac-based—“especially with OS X,” Marya adds. “It’s so robust and bulletproof, we wouldn’t dream of putting the server app on any other machine.”—PHILIP MICHAELS



Well Lit Settings are accessed via control panels.

TV for your Mac!



Watch TV on your Mac | Works best under OS X!

MyTV and **MyTV2GO** are the best ways to watch TV on your Mac. With prices starting at just \$99.-, they are so affordable that you'll never miss your favorite TV shows again!

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MyTVs' other great features include an external A/V input to connect to VCR's and video cameras, and support for Apple script. Plus USB makes MyTV a snap to install!

- Watch TV in a window or full screen
- Record TV and video to disk*
- Works best under OS X
- Works on all Macs 700MHz and faster
- USB Plug-and-Play for easy installation

* This feature is not available on MyTV2GO

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MAC USER BUILDS FLOPPY-BASED RAID DRIVE—JUST BECAUSE

RAIDers of the Lost Floppy



When you're attempting the impossible or the insane (or both), it's important to have the right tools—for example, a Mac.

Daniel Blade Olson has one—an aging Bondi Blue iMac running OS X 10.2.4—and he recently used it to create what is possibly the world's first floppy-based RAID drive. If that concept means nothing to you, think of it as the equivalent of building a spaceship powered by horses and buggy whips.

A RAID (redundant array of independent disks) drive improves the performance and dependability of high-end computers by combining a handful of normal hard drives into a single, virtual "super drive." In its most advanced configuration, a RAID drive not only runs faster than a normal drive, but also runs more reliably, because all the data on any one disk is duplicated on the others.

What Olson, a Chicago resident and marketing manager at peripheral maker Y-E Data, did was replace the hard drives in the RAID equation with floppies—five attached via a USB hub and merged into a RAID using Disk Utility. "I had just built a legitimate hard-disk-drive RAID, and I thought 'This must be done!'" Olson says.

People looking for the practical aspects of the experiment won't find any. Olson's project is a small testament to the flexibility of Apple's OS, but mostly, it's the geek version of climbing Mount Everest—you do it because it's there. "If you have an idea and don't bother to try," Olson says, "you will never know the results."—GREG KNAUSS



STORAGE BEAT

Hardware

Drives

Desktop and portable DVD-recordable optical drives from MCE Technologies (949/458-0800, www.mctech.com): The **MCE External 4X DVD-R/RW FireWire/USB 2.0 SuperDrive** (\$329) is a desktop optical drive that writes DVD-Rs at 4x and DVD-RWs at 2x. The drive also burns CD-Rs at 16x and CD-RWs at 8x. The **Lucid-SD Portable DVD-R/RW FireWire Drive** (\$449) burns DVD-R and DVD-RW media at 1x. It burns CD-Rs at 16x and CD-RWs at 10x. The portable drive weighs less than a pound. Both the desktop drive and the portable model ship with Roxio's Toast Lite; they're compatible with iTunes and Disc Burner.

Software

Utilities

SMARTVue Pro, from Granite Digital (510/471-6442, www.granitedigital.com): The suite of hard-disk utilities for OS X monitors hard drives for potential problems (\$30; Lite version, free).—COMPILED BY PHILIP MICHAELS

WHAT'S HOT

Special All-Music Edition

1. **Apple opens its online iTunes Music Store.** Features of the service include the ability to download full albums, exclusive music tracks from top artists, and a virtual store clerk who snorts contemptuously at each of your purchases.
2. **Apple denies rumors that it made a bid to buy Universal Music Group.** However, Steve Jobs confirms that he bid for a Universal Soldier DVD on eBay.
3. **The upgraded iPod now features a maximum capacity of 30GB.** Now the music you load on your iPod will be wildly unpopular by the time you're finished listening to all of it.
4. **iTunes 4 gives you the ability to share your music library with other users.** Coming in iTunes 5: a feature that helps you deal with your shame when all your friends discover you own 50 different versions of "Mr. Roboto."

FASTER PROCESSORS, NEW GRAPHICS CARD MARK DESKTOP UPDATE

Picture This: eMac Gets Graphics Boost

When the eMac debuted a year ago, Apple used the all-in-one desktop to take aim at the education market (see "Head of the Class," *Mac Beat*, July 2002). Having since made



the machine available to consumers at large, Apple now hopes to broaden the eMac's appeal with an update that boosts its processing and graphics power.

Two of the three new eMac models run on a 1GHz G4 processor (see "eMac's Graphic Changes"); the third entry-level model features an 800MHz G4 CPU. Previously, the fastest eMac topped out at 800MHz. Apple has also replaced the eMac's original Nvidia GeForce2 MX graphics processor with an ATI Radeon 7500 card that features 32MB of video memory. Apple hopes this will attract a

broader range of consumers, particularly gamers, who typically require much more graphics power than average users.

"We think graphics are important to customers," says Greg

Joswiak, Apple's vice president of hardware product marketing. "Oftentimes, they are surprised when they get a low-cost PC home and find out it's not a very good game machine. Things like 3-D gaming are important to the consumer, and we want to offer a great experience to

them, which means offering dedicated video controllers and dedicated video memory."

The new eMacs add internal support for AirPort Extreme wireless networking. Also, Apple has replaced the DVD-burning SuperDrive in the top-of-the-line eMac with a faster model that burns DVDs at 4x.

Two of the new eMac models—the \$799 800MHz eMac and the \$999 1GHz model—will boot into either OS 9 or OS X. The \$1,299 1GHz SuperDrive-equipped eMac will boot only into OS X because iDVD 3 runs only in OS X, Joswiak says.—JIM DALRYMPLE

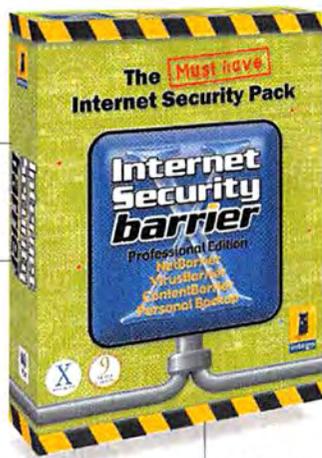
eMac's Graphic Changes

PROCESSOR	PRICE	MEMORY	HARD DRIVE	OPTICAL DRIVE	VIDEO CARD, MEMORY
800MHz G4	\$799	128MB SDRAM	40GB	CD-ROM	ATI Radeon 7500, 32MB DDR SDRAM
1GHz G4	\$999	128MB SDRAM	60GB	Combo drive	ATI Radeon 7500, 32MB DDR SDRAM
1GHz G4	\$1,299	256MB SDRAM	80GB	SuperDrive	ATI Radeon 7500, 32MB DDR SDRAM

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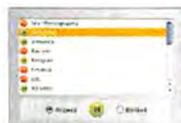


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REVIEWS



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

REALBASIC 5.0

Software-Development Application Remains Top in Field

BY ANDY IHNATKO

We're going to state right off the bat that RealBasic 5.0 is a significant and worthy upgrade to an already fine product. As a programming environment that lets ordinary civilians write useful Mac software with a minimum of experience, sweat equity, and grain alcohol, RealBasic no longer stands alone—but it's still the best choice for entry-level programmers.

People who've never written a line of code before will find that RealBasic 5.0 is a nonthreatening environment in which to acquire fundamental programming skills. Experienced programmers who are comfortable with modern BASIC will discover that they can build Cocoa or Classic applications just as professional-looking and powerful as many applications developed in more-traditional, hard-core development environments such as Metrowerks' CodeWarrior and Apple's Project Builder.

The Basics of RealBasic

One of the most attractive things about building software in RealBasic is that you don't start off by designing your application's data structure and code framework. Instead, you pick up the mouse and design the user interface. Imagine having a copy of Adobe Photoshop—only instead of brushes, pens, and shape tools, the tool palettes are full of standard user-interface elements such as windows, menus, and buttons.

Once you've created something that *looks* right, you go in and attach bits of working code to each of those user-interface elements. Wiring up your interface with code isn't trivial, but RealBasic nicely compartmentalizes the process so you can work on your application in piecemeal fashion, which can be very easy and very fulfilling. You don't have to finish the whole app to see worthwhile results, so if all you feel like doing one day is making a single button work,

you can spend an hour writing code and attaching it to the button—and that button will actually do something useful. There's another advantage of the *get-results-as-you-go* approach: before you've finished your application, you can take it for a test drive and experience it from the user's point of view. If your user interface stinks after one day of development, you can fix it the next day, instead of burning several days on work you'll have to undo once you realize your mistake.

Of course, there are many ways to experience the compartmentalized-development model. When RealBasic 1.0 appeared on the scene, its chief competitor was Apple's HyperCard (still the ultimate in right-brain programming environments). Now, the real challenger is AppleScript Studio. Like RealBasic, it lets you build full-featured applications by drawing a user interface and then writing the underlying code. Unlike RealBasic, it's got AppleScript at its core, which means that you'll be learning skills you can use everywhere in the Mac Experience, not just while you're building apps. And unlike RealBasic, which costs at least \$100, AppleScript Studio is free from Apple.

But while AppleScript Studio should occupy a prominent slot in anyone's bag of tricks, it wasn't created with the same goals as RealBasic. AppleScript Studio was designed as a simple way to create simple apps; RealBasic was always intended to be an all-solutions development environment that could stand on its own. If you want to grow as a programmer, you'll graduate from Studio at some point, but unless your coding ambitions include creating the next version of Microsoft Office or developing the operational firmware for a race of sentient

robots designed to enslave the human race, you can spend years with RealBasic.

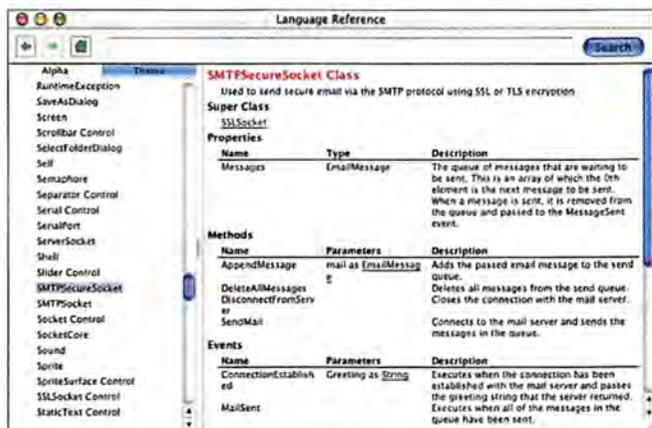
There's also the human factor to consider: learning to program in any sort of environment can be a lonely, frustrating process, but when you commit to RealBasic, you become part of an enormous base of smart, dedicated, and friendly users who provide a variety of great resources, from books to message boards.

Rebuilt from the Ground Up

As we've said, RealBasic 5.0 is a huge upgrade. Real Software has dragged its existing compiler and debugger into the Trash and built new ones completely from scratch, which is just as significant and ambitious as Apple's decision to start all over again with OS X instead of just fixing and tweaking its existing code base.

The most noticeable benefit of the reconstructed compiler and debugger is raw speed. The compiler and debugger are much, much faster at building executable code. You don't need careful benchmark testing to detect subtle improvements here. When I compiled a simple app, RealBasic was done before I had even chosen which magazine to thumb through while waiting for the compilation to finish. The difference is that dramatic.

Real Software has also done some long-overdue housecleaning in its implementation of the BASIC language, chiefly bringing RealBasic more in line with what most of the world has come to expect from BASIC. The company has also fixed some long-standing (and weird) quirks, particularly regarding how programmers have to declare and allocate variables. On the whole, programmers who are already familiar with



Back to Basics RealBasic 5.0's networking support lets you write applications that feature some sophisticated connectivity features—without requiring that you license third-party modules or build your own.

30 Programming application
RealBasic 5.0

31 Database-development application
4th Dimension 2003 Standard Edition

32 OS X fax application
Faxstf X Pro

33 Font editor
FontLab 4.5

34 Vector-based illustration program
FreeHand MX

35 Text editor
TextWrangler 1.0

35 Digital-asset manager
Portfolio 6.1

36 Upgrade cards
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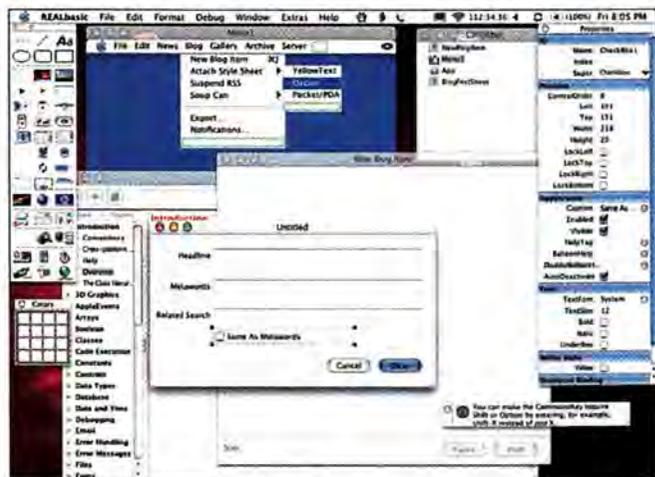
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OUTSTANDING: VERY GOOD: GOOD: FLAWED: UNACCEPTABLE:



Put On a Happy Interface To build an application in RealBasic, you begin by constructing its user interface. Drag and drop all the elements your application is going to need, and then attach snippets of code to each.

BASIC (and budding RealBasic programmers who might want to use their knowledge elsewhere someday) will have a much easier transition, thanks to the changes made in 5.0. The environment is also far stabler than that of previous editions, and it now offers a new Project Manager (available only in the Pro edition) that makes it easier for multiple programmers to collaborate on a project. But Real Software hasn't addressed a persistent gripe of ours: you still can't open two projects simultaneously and cut and paste code between them, so you may waste an awful lot of time opening and closing files if you want to casually recycle code between projects.

Still, the real fun of RealBasic 5.0 is in the new OS X features that you can easily implement in your applications. You can use metal windows (à la iTunes), native OS X toolbars (à la Sherlock 3 and the Finder), and window drawers. Version 5.0 supports OS X's Quartz graphics technology, which makes your text and graphics instantly crisper. In short, you can make applica-

tions that look and feel just like anything created in a more conventional development environment. Of course, those compiled applications are still a little on the large side, though they're slimmer than they used to be.

Builders of network-savvy applications will be thrilled to find out that RealBasic now offers built-in support for HTTP, POP, and SMTP, and the Pro edition adds support for SSL and server sockets. Anyone

continues on page 41

RATING:

PROS: Faster and stabler compiler; improved support for networking and many OS X user-interface elements; Pro edition supports collaborative projects.

CONS: Some projects from RealBasic 4.5 won't compile correctly in 5.0; not easy to cut and paste between two different projects; compiled applications are large.

PRICE: Standard edition, \$100; Professional edition, \$300

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Real Software, 512/328-7325, www.realsoftware.com

4TH DIMENSION 2003 STANDARD EDITION

Database-Development App Adds Cool New Features but Retains Familiar Barriers to Ease of Use

BY SCOTT LOVE

Before the Internet, it didn't really matter which proprietary database system you used, as long as you could export a tab-delimited file. Times have changed as databases have become increasingly interconnected, and 4D's 4th Dimension has changed, too. Since its humble beginnings on the Mac in 1987, it has combined the ability to create a graphical user interface, rich data-structuring tools, and its own programming language. The latest version, 4th Dimension (4D) 2003, is totally OS X native, adds a number of solid Web capabilities, and improves on the program's already impressive range of developer features. However, it also retains the idiosyncratic take on rapid application development that we described in our review of the last version, 4D 6.8.1 (; December 2002).

The Web Dimension

Developer tools are all well and good, but the most-interesting new capabilities in 4D 2003 come in the form of its integrated support for Web services, including XML, SOAP (Simple Object Access Protocol), and WSDL (Web Service Description Language). Acronyms aside, these features essentially allow you to publish to or use information from the Web within your solution. There's a wide range of possible ways to use Web services—you can enable your database to track your FedEx

packages, check Amazon.com prices, or record weather status. And a quick online search for *Web service* or a visit to www.w3.org/2002/ws/ reveals a ton of available Web services. By connecting your 4D database to a Web service, you turn the database into a client that interacts with a server on the Internet.

This is where 4D 2003 hits its stride. Its Web Services wizard unlocks the door to some powerful tools, via a series of dialog boxes that guide you through accessing a Web service or setting up your own. One downside is 4D's (quite appropriate) focus on developers and programming tools, which means that the byzantine layers of options and dialog boxes will easily lose some novices. An upside is that real power lies under 4D's hood, but you'll need to become quite familiar with the application before you'll be able to go beyond the common paths to configuring Web services.

continues

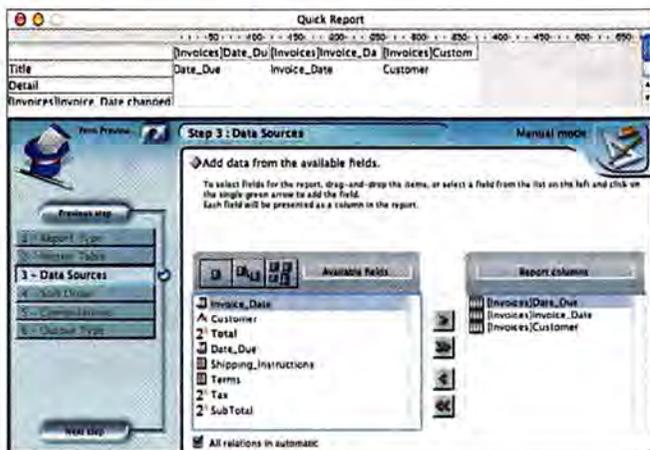
RATING:

PROS: Support and wizard for using Web services; integrated compiler. **CONS:** Idiosyncratic development paradigm; users may quickly outgrow wizards.

PRICE: \$349; upgrade from version 6.8, \$175; upgrade from version 6.7, \$229

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: 4D, 408/557-4600, www.4d.com



Get the Report Using the Quick Report wizard, you can build some common types of reports, but we found a few hiccups when working with cross-tab data.

"D" Is for Developer

Developers already familiar with 4D will be right at home with 4D 2003, which is a solid step forward with welcome new features in a variety of areas. The new Methods Editor takes its cues from modern Web-authoring tools, with type-ahead functionality, the ability to remove devel-

oper comments even if you choose not to compile your solution, multiple undos (thank goodness!), live syntax checking, and my favorite: split windows for looking at different parts of code at once.

Database developers will appreciate 4D, especially when integrating it with other sys-

tems (it comes with an ODBC driver and can act as a front end to a SQL server) and using its built-in Web server or 4D's own WebStar, but if you're a small-business owner looking to get your storage room organized, you may end up feeling quite lost.

To help you with some of the challenges of working with 4D 2003, the company has taken pains to ship 4D 2003 with a wealth of handy editors and wizards that step users through creating reports. The program also comes with a ton of electronic (and Web-based) documentation.

The Quick Report editor—while a bit of a misnomer since it's not so quick and easy to use—takes some of the mystery out of generating complex reports. Listing invoice totals by date, for example, is pretty easy, but summarizing them by customer or region can be a bit tricky. The editor handles formatting, gives you a wide range

of print options, and even generates HTML. Ultimately, using Quick Report seemed counterintuitive when we were trying to work with cross-tab data (in our case, information from related child tables), but it was faster than building reports by hand.

4D 2003 also now includes a built-in compiler (also finally native in OS X), rather than the external application of prior versions. You can run your solution in compiled mode, which produces a smaller, faster application, when you're finished coding, or have it interpreted by the 4D application so you can go back and make necessary changes.

Macworld's Buying Advice

In an overall sense, 4D 2003 is not easy to learn or use, but the company sure is trying, as evidenced by its well-integrated XML and Web-services support. It's well worth purchasing if you're an established 4D developer, but it will likely be over your head if you're not. □

FAXSTF X PRO

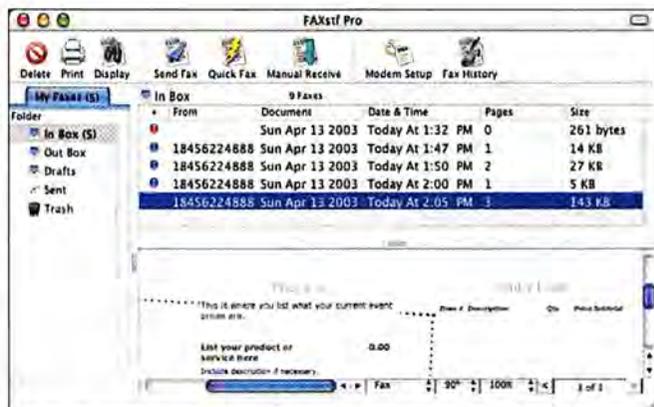
Major Improvements Earn Fax Software a Place among Its Competitors—Though It's Not without Faults

BY JEFFERY BATTERSBY

Smith Micro's Faxstf X was the first—and for a while the only—fax application available for OS X, but it had some significant problems (☹☹☹; May 2002). The recently released, and compatible with OS X 10.2 and later, Faxstf X Pro has some quirks, but its complete interface redesign and

integration with OS X's Address Book make it a worthwhile program. (It was not released in time to be included in our May 2003 review of fax software.)

Faxstf's new interface consists of a three-pane browser window similar to those found in many e-mail applications. The left-hand pane contains folders (In Box, Out Box, Drafts, Sent, and Trash, as well as any folders you create) that hold your sent and received faxes. The browser's upper pane displays a sortable list of faxes. Selecting a fax within that pane displays, in the lower pane, all the pages of the fax, which you can then rotate or resize for viewing ease. We did encounter a frustrating problem with receiving faxes—the program often cut off the bottom portion of a page—but we couldn't isolate its cause.



Don't I Know You? Faxstf X Pro's redesigned interface looks and works like those of many e-mail programs, with folders on the left side and a preview at the bottom.

You use the Print dialog box to send faxes, and Faxstf perfectly handled a variety of documents in landscape and portrait mode. The rub comes when you address a fax: to do so, you must select the Fax Options menu item in the Print dialog box. Faxstf then displays every Address Book contact that has a fax number—a feature similar to Live Addressing in Smile Software's Page Sender (☹☹☹; May 2003). Faxstf also lets you broadcast faxes to groups you've

defined in Address Book. But it supports only Address Book, and if you have more than one fax number for a contact, Faxstf selects the business fax number—you can't choose an alternative.

Macworld's Buying Advice

Faxstf X Pro is significantly better than its predecessor, but its hefty price, inconsistency in receiving faxes, and limited address-book compatibility mean it's no match for Page Sender. □

FONTLAB 4.5

Highly Scriptable, OpenType-Compatible Font Editor Deserves to Be the Typography Professional's Choice

BY AMY CONGER

Since the last update of MacroMedia Fontographer in 1996, type designers have developed a yearning for an up-to-date, affordable, Mac-compatible font editor for TrueType, Type 1, and OpenType fonts of many languages. With the arrival of FontLab's FontLab 4.5, their wait is over.

FontLab 4.5 bridges the gap between Fontographer—including the capabilities of the Python-scriptable RoboFog—and DTL FontMaster, an expensive (about \$2,170) bundle of programs informally known as Ikarus. FontLab has adopted features of both. However, some aspects of its interface remain difficult to decipher, even with the help of the program's well-written manual and excellent technical support. (For hobbyists and beginners, FontLab's \$99 Type Tool, a simpler font editor, may be more appropriate.)

Fat Interface

A font is a collection of glyphs (or characters) organized into encodings. FontLab supports common font encodings including Macintosh Roman, Windows ANSI, and various forms of Cyrillic, as well as encodings with Unicode double-byte codepages that allow as many as 5,000 glyphs in a font—a necessity for creating many Asian fonts.

As in other font editors, FontLab's glyphs are arranged in the Font window, a grid of cells defined by the chosen encoding. Each empty cell contains a gray glyph icon that shows which glyph to place there. To edit a glyph's outline, double-click on a cell to open its Glyph window. It's a breeze to select or move single glyphs or ranges of glyphs in the Font window. You can even select noncontiguous ranges.

But FontLab's interface is plagued by confusing toolbars, whose organization makes it

impossible to intuit their uses. Some buttons appear on multiple toolbars; others that look almost identical have very different functions (see "Too Many Toolbars").

Getting the Glyphs In

FontLab allows you to draw glyphs using both PostScript-style Bézier curves and TrueType-style splines, so your glyphs print well in the font format you choose. FontLab also converts from PostScript to TrueType and vice versa. Unlike other font editors, FontLab does not irreparably convert TrueType splines into PostScript curves when opening a TrueType font.

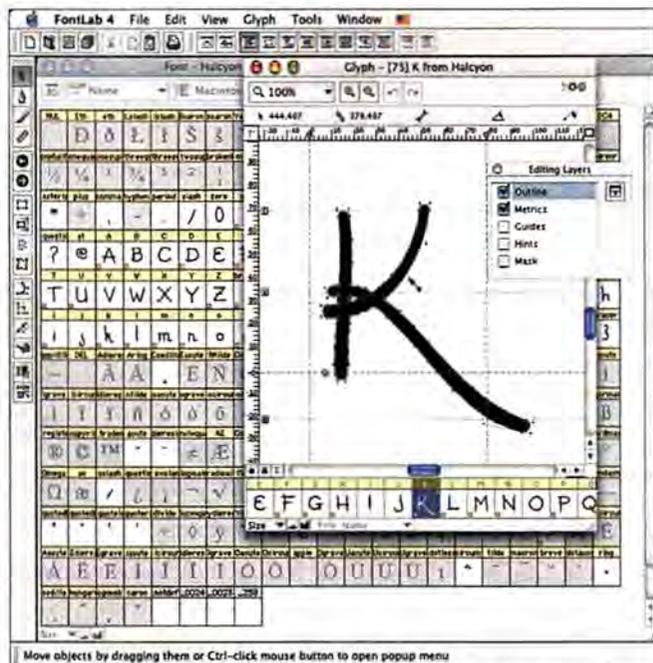
In addition to vector drawing tools, FontLab now includes two new modes for drawing and editing glyphs: VectorPaint lets you create simplified Illustrator brushstrokes that don't have pressure sensitivity, and Sketch mode is where you edit a glyph's outline. Whichever method you choose, FontLab's new, live, antialiased glyph-fill preview, which updates the filled preview of the glyph as you drag points and curves, is a welcome feature.

Unfortunately, editing glyphs in FontLab is complicated by a maddening "sticky mouse" problem that causes the mouse to briefly continue dragging an item after you've released the mouse button. (The company says that this bug will be fixed in an upcoming update.)

It's easy to import or paste glyphs drawn in a vector-drawing program, such as Adobe Illustrator or Macromedia FreeHand, into FontLab files, although the glyphs might then need some adjustment. FontLab has no auto-tracing feature; people who scan in hand-drawn characters may be interested in FontLab's \$99 ScanFont program.

More Than Just Letters

FontLab also gives designers control over other important



Too Many Toolbars FontLab 4.5's Edit toolbar, second from the left at the top of the screen, duplicates buttons from the Tools toolbar (vertical, on left) and the VectorPaint toolbar (horizontal, above glyph).

aspects of fonts, such as kerning pairs (the way letters fit together), metrics (glyph dimensions), hinting (advanced display instructions), and proofing fonts when they're finished.

The kerning process, usually a time-consuming chore, is somewhat automated here, although you'll still have to finesse the results by hand in the Metrics panel, which now resembles Fontographer's Metrics window. FontLab's class-based kerning helps by grouping similar glyphs, such as *A*, *Á*, and *À*, so you can kern them all at once.

FontLab's Preview panel features the waterfall preview (for proofing a single glyph in many sizes) and a vertical preview for type that is read downward. FontLab's hinting controls are extensive, incorporating both Type 1 hinting and TrueType style links. The autohinting feature works well, but only on geometrical typefaces. Other hinting features, such as alignment zones, will keep picky type designers happy.

FontLab fonts are exportable to many different Mac, Windows, and Unix formats. FontLab also uses Multiple Master technology to generate fonts made by interpolating two fonts. Use any of the four standard axes (weight, width, optical, and serif),

define your own, or blend two unrelated fonts to create a hybrid.

The Power of Scripting

There are several tedious type-design tasks that can be automated with scripting—three kinds of scripting are available in FontLab: Transformations programs, OpenType font features, and Python programs.

Transformations programs connect a string of FontLab's many glyph-transformation commands into a single action. A program that has these commands could, for example, clean up glyphs' outlines, set their widths, and center them.

FontLab generates OpenType fonts with features such as glyph substitutions that, for example, turn pairs of characters into
continues on page 41

RATING: ★★★★★

PROS: Pro-level features; several drawing modes; scriptable; generates full-featured OpenType fonts; relatively inexpensive.

CONS: Frustrating sticky-mouse bug; hard-to-decipher toolbars.

PRICE: \$549; upgrade from FontLab 3.X and Fontographer, \$199

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: FontLab, 877/366-8522, www.fontlab.com

FREEHAND MX

Illustration Program Joins the MX Family

BY ANDREW SHALAT

Somewhere between versions 9 and 10, Macromedia FreeHand went through an identity crisis—the application wasn't sure whether it was a print-focused illustration tool, a multimedia program, or a cut-rate Macromedia Flash. But it has recovered, and it's now a stable and productive member of the MX family. Powerful new illustration tools and enhanced integration with other MX programs have earned FreeHand its MX moniker.

Interface-lift

The interface differences between FreeHand 10 and FreeHand MX range from subtle to radical. Although the Tools panel is relatively consistent with earlier FreeHand versions, you'll see some new tools, such as Extrude and Bezigon (more about these later). Rolling over icons with your cursor reveals each tool's name, so if you find an unfamiliar icon, you can at least identify it.

Macromedia has redesigned its palettes as dockable panels, which help reduce clutter on screen. You can easily rename and customize panel groups, using the Group With panel submenu found in the upper right corner of each panel. The look-and-feel of the panels is similar to that of panels in other MX applications, so it's easy to move from one program to another.

FreeHand MX's new Object panel is perhaps the most important and versatile of the dockable panels. It sets itself apart from earlier versions' tabbed palettes by letting you drill down through an object's various attributes and properties without leaving the panel window.

The Object panel's one-stop Stroke, Fill, and Effect variations make up the most intuitive interface to come along since the introduction of float-



One-Stop Dock The enhanced Object panel lets you change, refine, and add attributes to objects without having to go anywhere else in the program.

ing palettes; this panel's display changes to reflect any fill, stroke, or effect attribute in any selected object. You can change these properties within the Object panel, or you can change the properties directly in the objects you've selected. For many users, the resulting time and mouse-movement savings alone may be worth the cost of the upgrade.

Multiple Choices of Multiple Attributes

FreeHand MX now allows multiple attributes or effects in a single object; the ability to quickly apply, separate, and manipulate multiple attributes—and the increased integration with Flash—will open up illustration techniques that could positively affect both print and Web work for years to come.

Using the Modify menu and selecting Separate Attributes, you can also separate objects with multiple attributes into several individual objects—one object can essentially hold numerous styles. To us, being able to export complex objects and elements to Flash makes FreeHand more powerful than any rival illustration application.

Tool Improvements

FreeHand MX has some unique new tools. Its enhanced Pen tool accommodates on-the-fly stroke-style changes, and its multiple-attribute capabilities take variations in illustrations and styles to another level. FreeHand MX also has beefed-up gradient-fill control; you can edit your gradients directly within the object on screen, rather than through a combination of handles and palette controls.

The Bezigon tool might become a favorite for designers accustomed to manipulating Bézier curves. It lets you create polygons that combine curves and corners with precision and ease.

The new Extrude tool is an easy way to add simple 3-D effects to objects. Even after extruding an object, you can edit the original shape. Changes you make to the object are quickly—though not instantly—made to the extrusion as well.

The vector-based Eraser tool creates new shapes and cutouts from existing shapes by making separate vector paths from erased space. The Action tool allows click-through navigation from one page to another in multiple-page FreeHand documents. While the ActionScript tool is powerful, we wonder how many times we'll need to build navigation commands in FreeHand, rather than in a more Web-focused application, such as Flash, where ActionScripting is more comprehensive.

Welcome Back to the Family

FreeHand MX shares files with MX-mates Fireworks and Flash. For example, you can open FreeHand MX files directly within Fireworks, keeping the Free-

Hand MX files editable. This enhanced reciprocity will be appreciated by people who bounce from FreeHand to Fireworks to Dreamweaver to Flash.

FreeHand MX now has the same level of Flash import and export ease that it has with Fireworks. Flash-format files imported into FreeHand can be edited in Flash MX through the Object panel. The imported files are automatically updated.

FreeHand has always had extensive export options, and this version continues to offer myriad file formats. Unfortunately, it still doesn't import or export Adobe Illustrator files beyond version 7.X.

FreeHand MX's new feature set and interface innovations have not only expanded its users' potential repertoire, but also resolved stability issues in FreeHand 10. The workspace-viewing choices have been simplified to Preview, Fast Preview, Keyline, and Fast Keyline. Preview and Keyline are antialiased, and the lines and edges of objects are smoother. And the application doesn't crash while switching between views.

Macworld's Buying Advice

If you're using Dreamweaver, Flash, or Fireworks, then FreeHand MX is an essential piece of your Web-design puzzle. However, the real selling point is its more comprehensive integration with other MX products; this integration finally brings FreeHand MX up to a level where professionals can use it with confidence. □

RATING: ★★★★★

PROS: Easy to use; versatile integration with MX product family; powerful new illustration tools and techniques; reliable performance.

CONS: No completely seamless import or export from Illustrator 9 and 10.

PRICE: \$400; upgrade from FreeHand 10, \$100; upgrade from FreeHand 9, \$150

OS COMPATIBILITY: Mac OS 9, Mac OS X

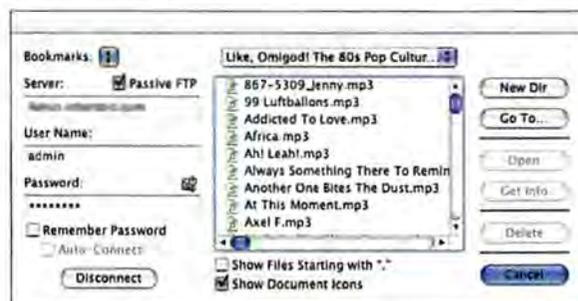
COMPANY: Macromedia, 800/470-7211, www.macromedia.com

TEXTWRANGLER 1.0

Text Editor Brings BBEdit Features to Bargain Market

BY JASON SNELL

Despite its version number, Bare Bones Software's TextWrangler is not a conventional "1.0 product"—a new product with new and untested code. Instead, it's a \$49 text editor based on Bare Bones' \$179 BBEdit (★★★★; March 2003), a product that's been around the block a few times. This useful, low-cost application will appeal to hobbyists and aspiring geeks, but TextWrangler's curious feature set needs some fine-tuning before it will appeal to a broader range of users seeking powerful text-editing tools.



Can Opener With TextWrangler's Open and Save With FTP commands, you can connect to files on remote servers as if they were on your hard drive.

Born from BBEdit

Like BBEdit's, TextWrangler's text-editing engine is first-rate, featuring a variety of built-in text-manipulation tools for editing and sorting document contents. TextWrangler supports multibyte and Unicode text, and it's Unix-savvy: you can open and save files remotely via FTP, and you can even write to permission-protected OS X files via an authentication dialog box.

If those features don't make you sit up and take notice, TextWrangler may not be for you. TextWrangler is not a word processor. It doesn't support styled text, so italic type, boldface type, and multiple fonts are out of the question. Bare Bones says that it expects TextWrangler to appeal to database and system administrators, students, and programmers who are beginning to outgrow the text editor that comes with Project Builder (part of Apple's free development-tools package) and who want to take advantage of two TextWrangler features: syntax coloring for C programs, and the ability to act as an external code editor for ProjectBuilder.

For that audience, TextWrangler offers plenty of interesting tools. It allows you to strip duplicate lines, to base sorting on regular expressions (so you can sort by items

within a line, not just by the first character of a line), to create hard wrapping, to select rectangular segments of text (useful for modifying tabular data), and to compare two versions of a document.

Although TextWrangler doesn't offer the HTML-editing features (including syntax coloring) that BBEdit does, it can be a useful tool for Web developers on a budget. Consider TextWrangler's most powerful feature, its search-and-replace engine. With support for grep pattern matching and the ability to search hundreds of text files at once, you can massively alter the contents of a folder full of text files in just a few steps.

What's Missing

Besides HTML tools, TextWrangler lacks several other BBEdit features. Most of these features are so specialized that their absence from the low-cost TextWrangler makes sense, but a few omissions are puzzling. For example, TextWrangler doesn't support AppleScript, thereby preventing the

scripting community from generating productivity-enhancing tools for TextWrangler users. TextWrangler could also benefit from a feature like BBEdit's Glossary, which allows users to save snippets of text in a palette for later reuse.

Macworld's Buying Advice

TextWrangler is a moderately powerful tool for sorting, processing, and editing text files. If you spend a lot of time looking at Unix config files or exports from a database application, or if you simply can't afford the \$179 BBEdit, TextWrangler is a good option. But for TextWrangler to build a broader audience, it will need more flexibility and some features—such as AppleScript support—that it currently lacks. □

RATING: ★★★★★

PROS: Powerful text-editing, sorting, and search-and-replace features.

CONS: No support for styled text; no AppleScript support; no HTML-specific tools.

PRICE: \$49

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Bare Bones Software, 781/687-0700,

www.barebones.com

PORTFOLIO 6.1

Upgrade to OS X—Native Digital-Asset Manager Speeds Workflow

BY ANDREW SHALAT

Digital-asset managers have been around for as long as digital publishing, letting publishing professionals instantly survey, evaluate, and select files.

Extensis Portfolio 6.1 is a stand-alone, industrial-strength digital-asset manager that's not only easy to use but also powerful and fast. Version 6.1 is OS X native and builds on the familiar features and interface of version 6 for OS 9 (★★★★; July 2002), with a few key additions aimed at minimizing workflow interruptions.

If It Ain't Broke, Make It Better

Like previous versions, Portfolio 6.1 lets you build catalogs by either dragging and dropping files into an application window, as in Adobe Photoshop, or scanning specific folders. Version 6 introduced FolderSync, a catalog-updating feature that watches any specified folder, file, or volume, and with one click resynchronizes the catalog accordingly.

Contextual menus, introduced in Portfolio 6, speed catalog creation as well. Control-click on any file, folder, or volume, and you'll have the option of creating a new catalog or adding the item to an existing catalog. Portfolio then launches on its own, saving you a few steps. However, we do wish the Portfolio 6.1 application didn't have to launch completely to perform this function. Whenever a new application has to launch, it interrupts your workflow.

While past versions let you rename files and folders from within Portfolio, this upgrade has added a batch-rename command, bringing the program up to parity with its Windows sibling. Batch renaming speeds up your work-

continues on page 43

RATING: ★★★★★

PROS: Portfolio Express provides easy access to catalogs from within the current application; FolderSync cuts down on file-management tasks; excellent output options.

CONS: Contextual menus can slow down catalog compilation, due to lengthy application launch; pricey for single users.

PRICE: \$200; upgrade from Portfolio 6, free; upgrade from Portfolio 5, \$100; competitive upgrade from Cumulus, \$150

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Extensis, 800/796-9798,

www.extensis.com

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Macworld
The Mac Product Experts

REVIEWS

GIGA DESIGNS G4 UPGRADES

Recent Entries to CPU-Upgrade Market Let You Hold On to Your Old Mac

BY JEFFY K. MILSTEAD

The argument for buying a processor upgrade gets a little weaker each time Apple introduces a new machine. But if you're not sure you want to forsake your trusty old Mac, an upgrade card will let you throw a smaller overall amount of money at the problem.

We looked at the second generation of upgrades for Power Mac G4s (models with AGP graphics, through the Quicksilver) from Giga Designs: the G-celerator GC1-800-S2, which runs at 800MHz, and the G-celerator GC5-1000-S2, which runs at 1GHz.

To test Giga Designs' cards, we installed them on our 500MHz Power Mac G4 (AGP graphics) test system and ran the Mac through our Speedmark suite of application-based tests. Installing the upgrades took less than ten minutes; we were able to begin using both cards immediately and found no compatibility issues or glitches.

Though instructions are not included in the documentation, both cards let you overclock the CPU—run the chip beyond its normally rated speed by changing the jumper settings. But we don't recommend it. Doing so voids your warranty and could be hazardous to the CPU's long-term health.

There's no arguing about the allure of a flat-out deal, and at \$280, the GC1-800-S2 is one of the lowest-cost 800MHz upgrades available for G4s. It includes 2MB of L3 cache, which you won't find in the 800MHz iMac, for example. Except for its lower graphics scores (due to the older graphics chips on older machines), the GC1-800's performance beat that of the iMac.

Likewise, the competitively priced \$420 GC5-1000-S2 1GHz G4 upgrade card

comes with a full 2MB of L3 cache and turns in benchmark numbers on a par with those of both Sonnet's and PowerLogix's 1GHz cards (see "Power Mac Power Boost," March 2003). To keep the prices of their cards down, Giga Designs does not use DDR memory for their backside caches, as Apple does. Instead, the company opts for less-expensive static RAM. We found only negligible performance differences between the two types of RAM.

Macworld's Buying Advice

We highly recommend the G-celerator GC1-800-S2, as it's a good performer with a very tempting price. For the best system performance, you can't beat buying a new machine. But we can still recommend the G-celerator GC5-1000-S2 for its speedy performance and trouble-free operation. □

G-CCELERATOR GC1-800-S2

RATING: **★★★★**

PROS: Good value; trouble-free operation.

CONS: None significant.

PRICE: \$280

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Giga Designs, 510/445-8963, www.gigadesigns.com

G-CCELERATOR GC5-1000-S2

RATING: **★★★★**

PROS: Trouble-free operation; good performance.

CONS: Not as fast as a new Mac.

PRICE: \$420

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Giga Designs, 510/445-8963, www.gigadesigns.com

	Speedmark	Adobe Photo-	iMovie	iTunes 3	Quake III
	3.2	shop 7.0.1	RENDER	MP3 ENCODE	v1.30b5
	OVERALL SCORE	SUITE			FRAME RATE
Apple Power Mac G4/500 (base)	96	1:28	1:07	1:18	20.2
with G-celerator GC1-800-S2	115	1:07	0:52	0:52	20.8
with G-celerator GC5-1000-S2	131	0:56	0:44	0:44	20.8
Apple iMac G4/800	103	1:11	0:59	1:00	51.8
Apple Power Mac G4/1GHz (DDR)	152	0:53	0:41	0:41	76.1
	>Better	<Better	<Better	<Better	>Better

BEST RESULTS IN BOLD. REFERENCE SYSTEMS IN ITALICS.

Speedmark 3.2 scores are relative to those of a 700MHz eMac, which is assigned a score of 100. Photoshop, iMovie, and iTunes scores are in minutes:seconds. Quake scores are in frames per second. We tested each system with Mac OS X 10.2.3 installed and 256MB of RAM. We set displays to 1,024-by-768-pixel resolution and 24-bit color. We tested MP3 encoding with an audio-CD track that was 9 minutes and 25 seconds long, converting it from the hard drive using iTunes' Better Quality setting. We tested Quake III at a resolution of 1,024 by 768 pixels with Graphics set to High Quality. For the Photoshop Suite test, the systems were upgraded to 512MB of RAM; the suite is a set of ten scripted tasks using a 50MB file. Photoshop's memory was set to 100 percent and History was set to Minimum. For more information on Speedmark 3.2, visit www.macworld.com/speedmark.—MACWORLD LAB TESTING BY JEFFY K. MILSTEAD

LIVE 2.0 AND PHRAZER 2.0

Two Apps Represent the Highs and Lows of Loop-Based Sequencing

BY CHRISTOPHER BREEN

Mac-using DJs looking to get a groove on are increasingly turning to loop-based sequencing applications. Much like Sonic Foundry's renowned Acid for Windows, Ableton's Live 2.0 and BitHeadz's Phrazer 2.0 allow you to string together prerecorded audio loops to create dynamic dance tracks (and if you're a musician, they let you overdub tracks of your own). The ease with which you can assemble and play those loops is what separates an astoundingly elegant app from one that strikes the wrong note.

Making Tracks

Conceptually, Live and Phrazer are similar. Each lets you drag audio loops—a drum or bass groove, for example—from a bin of audio files into one of a series of tracks. By dragging several of these loops into different tracks, you build a multipart arrangement. Both programs let you adjust the loops so their tempos match, and both allow you to change the tempo of an arrangement without also changing the pitch of the tracks within it. Live and Phrazer also purportedly let you trigger individual tracks with the mouse or the Mac's keyboard, or via MIDI for live performance. Regrettably, only Live does most of these things well.

Phrazer's Faults

In our tests, Phrazer's loops didn't always sync—for example, when we auditioned a loop. And because Phrazer doesn't currently support OS X's CoreMIDI protocol, you can't trigger a Phrazer loop via MIDI in OS X (although you can in OS 9). Phrazer supports audio in OS X only to the extent that it plays through the default output device in the Audio MIDI Setup utility, but Phrazer can't record audio from that device.

Live's Line

Thankfully, Ableton's Live more than makes up for Phrazer's deficiencies. You "play" Live from your MIDI keyboard by assigning keys on your keyboard to trigger loops and tracks. And because Live supports OS X's CoreAudio functionality, recording a live audio track directly into the program is easy.

Since we last looked at Live (★★★★; August 2002), Ableton has added a feature that lets you choose from three time-stretching schemes that make loops continue to play at

the correct pitch when you increase or decrease your track's tempo. Another cool addition, Tap Tempo, allows you to change the tempo of your arrangement by rhythmically tapping a MIDI key or a Mac keyboard key, or by clicking the mouse.

While we were impressed with Live, we wish that its printed manual included an index and that its interface were more Mac-like. For example, invoking a Rename command to edit a track's name, rather than simply double-clicking on the name, is awkward.



Playing Live Live's intuitive loops-and-tracks interface makes it easy to create dynamic grooves.

Macworld's Buying Advice

Live, with its ease of use, implementation of OS X music technologies, and cool new features, is the finest loop-based sequencing application available. Phrazer, which lacks essential support for OS X, clearly isn't. □

LIVE 2.0

RATING: ★★★★★

PROS: Solid MIDI and audio support in OS X; new time-stretching features; new Tap Tempo feature.

CONS: No index in manual; interface sometimes not Mac-like.

PRICE: \$399

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Ableton (distributed by M-Audio), 800/969-6434, www.ableton.com

PHRAZER 2.0

RATING: ★★

PROS: Works reasonably well in OS 9.

CONS: No MIDI- or audio-input support in OS X.

PRICE: \$299

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: BitHeadz, 401/886-7045, www.bitheadz.com

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for
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THIS MONTH IN DIGITAL CAMERAS



Model	Canon PowerShot A70	Nikon Coolpix 3100	Olympus D-560 Zoom	Olympus Stylus 300	Sony Cyber-shot DSC-P8	Sony Cyber-shot DSC-P72
Rating	★★★★	★★★	★★★	★★★★	★★★★	★★★
Resolution (in megapixels) ^A	3.2	3.2	3.2	3.2	3.2	3.2
Price	\$399	\$349	\$349	\$449	\$399	\$329
Lens						
Zoom (35mm equiv.)	3× (35mm–105mm)	3× (38mm–115mm)	3× (35mm–105mm)	3× (35mm–105mm)	3× (39mm–117mm)	3× (39mm–117mm)
Maximum Aperture	f2.8–f4.8	f2.8–f4.9	f3.1–f5.2	f3.1–f5.2	f2.8–f5.6	f2.8–f5.6
Media Supported	CompactFlash Type I	CompactFlash Type I	xD Picture Card	xD Picture Card	Memory Stick Pro	Memory Stick Pro
Size (in inches) ^C	compact, 4.0 × 2.5 × 1.2	compact, 3.5 × 2.5 × 1.5	compact, 4.3 × 2.3 × 1.6	compact, 3.8 × 2.2 × 1.3	compact, 4.3 × 2.0 × 1.4	compact, 4.7 × 2.3 × 1.3
Weight (in ounces) ^D	7.6	5.3	6.0	5.8	7.3 (with battery, Memory Stick)	9.1 (with battery, Memory Stick)
Bundled Software	Canon Digital Camera Solutions, ArcSoft Camera Suite	NikonView, ArcSoft Camera Suite	Olympus Camedia Master	Olympus Camedia Master	Pixela ImageMixer (not OS X native)	Pixela ImageMixer (not OS X native)
Bundled Hardware	16MB CompactFlash card, USB and video cables	16MB CompactFlash card, USB and video cables	16MB xD card, USB and video cables	16MB xD card, remote control, USB and video cables	16MB Memory Stick, AC adapter, USB and video cables	16MB Memory Stick, USB and video cables
Battery ^E	AA (no charger)	AA (no charger)	AA (no charger)	lithium ion	lithium ion	AA
Additional Features	AF illuminator, supports add-on lenses and underwater case, many scene modes	elaborate scene modes, support for external flash	pixel-mapping feature eliminates "bad pixels"	all-weather body, supports underwater case, pixel-mapping feature eliminates "bad pixels"	tracking AF system with illuminator, supports add-on lenses, external flash, and underwater case	AF illuminator, supports add-on lenses and external flash
Movie Mode	yes, with sound (3-minute maximum)	yes, no sound (40-second maximum)	yes, no sound (60-second maximum)	yes, no sound (70-second maximum)	yes, with sound (maximum length dependent on card)	yes, with sound (maximum length dependent on card)
Image Quality	Very good; images tend to be soft; red-eye problems.	Good; images can be noisy, especially in low light; red-eye problems.	Very good; some red-eye problems.	Very good; some noise and jagged edges.	Very good; slightly noisy; red-eye problems.	Very good; minor red-eye problems.
User Interface	Very good.	Excellent; very easy for beginners.	Very good; easy for beginners.	Very good; easy for beginners.	Very good; extremely simple.	Very good; extremely simple.
Pros	Superb value; full manual controls; great performance; AF illuminator; strong movie mode; supports add-on lenses.	Intuitive menus and scene modes; manual white balance; supports external flash.	Easy to use; traditional body style feels comfortable in your hands.	Tiny, all-weather metal body; fast performance; remote control included; supports underwater case.	Small metal body; fast performance; tracking autofocus system; excellent movie mode; nice accessory options.	Top-notch movie mode; AF illuminator; very good battery life; supports add-on lenses and external flash.
Cons	Red-eye problems; soft images will bother some users; some purple fringing; diopter correction.	No AF illuminator; noise and red-eye in images; unimpressive movie mode.	No AF illuminator; some red-eye; no manual controls; poor movie mode; help manual on CD.	No AF illuminator; no manual controls; battery door opens too easily; poor movie mode; help manual on CD.	Red-eye problems; poorly placed macro button; battery life not as good as the DSC-P72's; no manual controls.	No manual controls; plastic body not as well-made as the DSC-P8's body.
Contact	800/652-2666, www.powershot.com	800/645-6687, www.nikonusa.com	800/553-4448, www.olympusamerica.com	800/553-4448, www.olympusamerica.com	877/865-7669, www.sonystyle.com	877/865-7669, www.sonystyle.com

Cameras are listed first in order of resolution and then alphabetically by vendor. ^AThe camera's effective resolution, not the CCD's resolution. ^BMMC = MultiMedia Card. ^CWidth × height × depth.

BY JEFF KELLER

This year's Photo Marketing Association (PMA) show brought a flood of new digital cameras to market—and made it clear that choosing a digital camera isn't getting any easier. Camera companies keep cranking out models with strikingly similar features, making it more difficult for consumers to find the cameras they want.

The PMA show also demonstrated that 3.2 megapixels is now the entry

point for most camera manufacturers, as is a 3× optical zoom lens—six of the ten cameras I looked at this month have both those characteristics.

The best camera of that bunch is the Canon PowerShot A70. What defines this camera is its full suite of manual controls, including shutter speed, aperture, focus, and white balance. Add an autofocus (AF) illuminator, a nice movie mode, and support for both conversion lenses and an underwater

case, and the A70 is way ahead of the competition, especially with a street price of \$399.

Two other nice cameras—and the only others in the 3.2-megapixel class that have an AF illuminator—are Sony's Cyber-shot DSC-P8 and DSC-P72. The P8 has a few more features than the P72, such as control over sharpness and saturation, and it's slightly smaller, with an all-metal body (the P72's body is plastic). Also, the P8

uses a proprietary lithium-ion battery while the P72 uses two rechargeable NiMH AA batteries. As a result, the P72's battery life is almost twice that of the P8. The trade-off here is really between size and battery life. Both cameras support add-on lenses and an external flash, and you can buy an underwater case for the P8. The cameras have a movie mode that is among the best we've seen; it allows you to record 640-by-480 videos (with



Canon PowerShot S400 Digital Elph	Canon PowerShot S50	Kyocera Finecam S5	Minolta Dimage F300
★★★★	★★★★	★★★	★★★★
4.0	5.0	5.0	5.0
\$599	\$699	\$599	\$599
3× (36mm–108mm)	3× (35mm–105mm)	3× (35mm–105mm)	3× (38mm–114mm)
f2.8–f4.9	f2.8–f4.9	f2.8–f4.8	f2.8–f4.7
CompactFlash Type I	CompactFlash Type II	Secure Digital/MMC [®]	Secure Digital/MMC [®]
compact, 3.4 × 2.2 × 1.1	midsize, 4.4 × 2.3 × 1.7	compact, 3.6 × 2.3 × 1.3	compact, 4.4 × 2.1 × 1.3
6.5	9.2	5.8	6.5
Canon Digital Camera Solutions, ArcSoft Camera Suite	Canon Digital Camera Solutions, ArcSoft Camera Suite	Pixela ImageMixer (not OS X native)	Minolta Dimage Viewer
32MB CompactFlash card, USB and video cables	32MB CompactFlash card, USB and video cables	16MB SD card, AC adapter, USB and video cables	16MB SD card, USB and video cables
lithium ion	lithium ion	lithium ion	AA
AF illuminator, supports underwater case, coating on front and top of body prevents scratches	AF illuminator, supports underwater case, saves favorite settings to mode wheel, manual focus-area selection	none	tracking autofocus system follows moving subjects, LCD information display on top of camera, automatic scene modes
yes, with sound (3-minute maximum)	yes, with sound (3-minute maximum)	yes, with sound (2-minute maximum)	yes, with sound (20-minute maximum)
Very good.	Excellent.	Good; images noisy; red-eye problems.	Very good; sharp but slightly noisy.
Very good.	Very good.	Very good.	Very good.
Small, beautifully designed metal body; AF illuminator; good movie and playback modes; no red-eye problems.	Full manual controls; AF illuminator; good movie and playback modes; high-quality metal body.	Small metal body; some manual controls; easy to use.	Sharp images; tracking AF system; full manual controls; compact metal body.
Limited manual controls; back of camera not scratchproof.	Red-eye; no diopter correction; no live histogram in record mode; poorly designed four-way switch.	Red-eye and noise in images; slow image-write speeds; no AF illuminator; bundled software not OS X native.	No AF illuminator; noise in some images; slow-moving lens; noticeable shutter lag.
800/652-2666, www.powershot.com	800/652-2666, www.powershot.com	732/560-0060, www.kyocera.com	201/825-4000, www.minoltausa.com

[®]Camera only unless otherwise noted. ¹Battery charger included unless otherwise noted.

a 16-fps frame rate) until the memory card is full. And both use the Memory Stick Pro, though they can also use regular Memory Sticks.

Another good camera in the 3-megapixel class is the Olympus Stylus 300. What makes this point-and-shoot camera stand out is its weatherproof (but not waterproof) metal body. It's easy to operate and its picture quality is good, although it could really use an AF illuminator. Olympus's other new

camera, the D-560 Zoom, has the same feature set as the Stylus 300 but doesn't have the fancy body. It's a decent enough camera that provides good-quality images.

Nikon's Coolpix 3100 is a good camera with a unique scene-mode feature. Instead of just letting you flip to a scene mode (for example, portraits, landscapes, or sports shots), the 3100 goes one step further by putting grid-lines or other aids on the LCD to help

you compose better shots. In some cases this feature is overkill, but beginners should find it helpful. The Coolpix 3100 also has a manual white-balance mode, which is rare for a camera in this price range. Its image quality is good, but the pictures were

JEFF KELLER is the editor of the Digital Camera Resource Page (www.dccresource.com), which includes reviews and ratings of more than 470 digital cameras, and [dvspot](http://www.dvspot.com) (www.dvspot.com), a consumer-oriented DV-camcorder site. Send feedback about this column to reviews@macworld.com.

a bit too noisy for my taste, and it really needs an AF illuminator.

This month's 4-megapixel camera is a great one: Canon's PowerShot S400 Digital Elph. The latest camera in Canon's Elph line features a stunning all-metal body with a special coating on the front and top to prevent scratches. The S400 is strictly a point-and-shoot camera, though it lacks the scene modes found in the other cameras reviewed here. Its movie mode is good but not as good as that of the A70. Photos are sharp and free of noise, and surprisingly, red-eye wasn't a problem.

Of the three 5-megapixel cameras in this month's roundup, the best is Canon's PowerShot S50. The S50 is almost identical to the PowerShot S45 (★★★★; April 2003), but with a 5-megapixel CCD and black metal body. The S50 has a full suite of manual controls, an AF illuminator, a good movie mode, and excellent photo quality—even a bit sharper than the S45's. The S50 doesn't support any lens or flash attachments, red-eye can be a problem, and the camera's four-way controller is a little quirky, but the rest of its features make up for those minor faults.

While not quite as nice as the S50, Minolta's Dimage F300 is worth considering. The F300 is similar in size to the S50 and has comparable features, with a few exceptions. The F300 uses AA batteries instead of Canon's proprietary battery, and it has a tracking autofocus mode, which keeps moving subjects in focus. Its image quality isn't as good as the S50's—images are definitely noisier. It lacks an AF illuminator, and its software bundle is unimpressive.

Kyocera's 5-megapixel Finecam S5, about the same size as the Canon S400, is mediocre in all respects, unfortunately. It has few manual controls and lacks an AF illuminator, and its images were noisier than average (severe red-eye was also common). The camera's pop-up flash is awkwardly positioned, and its Secure Digital card exhibited sluggish write speeds. The Finecam S5 isn't a bad camera, but it can't handle the fierce competition in the 5-megapixel category. □

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REVIEWS

ZBRUSH 1.5

Package Lets 2-D Artists Break
In to the Third Dimension

BY BEN LONG

If you've ever tried your hand at 3-D modeling, you know that it's a complex process involving weird tools and changing viewpoints. Pixologic's ZBrush 1.55b delivers sophisticated tools to would-be 3-D artists, but it provides them in a form most of us already understand: the paintbrush.



Liquid Software This figure was sculpted in 3-D and then painted over with ZBrush's Sphere brush.

Zbrush's painting tools let you paint objects that have depth and dimension, but the program can't do all the things a true 3-D modeler can do (for example, lofting and extruding). It's really something of a 2-D-3-D hybrid, and its interface is a bit unusual. But once you figure it out, you can use it to create 3-D images fairly easily.

Z Painting

ZBrush is different from other painting programs, in that it understands depth. While most 2-D programs concern themselves with a grid of pixels along the *x* and *y* axes, ZBrush adds a third axis, *z*, to create three-dimensional pixels called Pixols. When you paint with a ZBrush brush, the program understands where the resulting virtual paint sits in 3-D space. As you paint over earlier strokes, the paint builds up to create a 3-D "blob" that can be further sculpted and manipulated. By default, ZBrush images are rendered with lights and shading, so your 3-D objects have correct highlights and shadows.

Although ZBrush makes it easy to paint the layers of overlapping muscle in a sinewy forearm, for example, new paint sometimes inexplicably dives under preexisting paint, with unpredictable results. A paint blob may start out "deep," but painting across a "shal-

low" stroke can cause the brush to rise suddenly to the surface of the *z*-axis layers.

ZBrush's interface will also unsettle all but the most adaptable users. The unfamiliar placement of palettes, the unintuitive arrangement and naming of tools, and the often confusing icons (for example, spheres and circles are used liberally as icons for numerous unrelated tools) do little to help.

This program's 3-D facilities are innovative, but its basic 2-D-painting tools fall a little short. Expect to move your images into another painting or image-editing program for basic 2-D work. And although Pixologic's elaborate, scripted tutorials are an unusual and effective approach to teaching, the absence of straightforward documentation will frustrate newcomers who simply need to look up how to make something work as expected.

3-D Training Wheels

ZBrush's 3-D sculpting is great at helping you create elaborate organic forms, but it's a poor choice if you need to make accurate models of objects with more-exact measurements, such as a vehicle.

The Zspheres tool models an object by stringing together chains of spheres—much as a

traditional artist might block out the form of a human character by drawing circles. You can then stretch a smooth polygonal skin over this form to create a single continuous shape. But while Zspheres are impressive, they don't let you build circular overlapping chains, so you can't really use them to model a body, for example, where bunched and connected muscles are covered by a single layer of skin.

Macworld's Buying Advice

We like ZBrush's innovative support for painting with depth, but the interface leaves lots of room for improvement—and the program can't replace Adobe Photoshop or a full-featured 3-D application. If you need an easy-to-use 3-D-modeling facility, it's a great tool to have, as long as it isn't the *only* 3-D brush in your tool kit. □

RATING: ★★★

PROS: Innovative brushes that can paint in 3-D space; real-time rendering and lighting; very good performance.

CONS: Limited image editing; interface is cluttered and confusing.

PRICE: \$399

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Pixologic, 888/748-5967,
www.pixologic.com

RealBasic 5.0

continued from page 31

creating applications that require multiple simultaneous TCP connections will be very happy.

We should also note our excitement about 5.0's compatibility with a soon-to-be-released Windows edition of RealBasic. RealBasic has always been a multiplatform environment—you can turn many Mac RealBasic projects into Windows applications with just a few clicks—but this file- and project-compatible release promises to allow one help desk or IT department to serve the development needs of everyone on every platform.

We are not nearly so happy that some of our RealBasic 4.5 projects didn't compile correctly in RealBasic 5.0. Fortunately, Real promises to fix this in an update.

Macworld's Buying Advice

All of 5.0's core improvements and new features are neat stuff, of course, but what makes RealBasic a compelling buy has remained the same since the early days: when you commit to RealBasic, you've got a lot of people at your back.

With its newly rebuilt compiler and debugger, and with its incorporation of OS X's appealing interface features, RealBasic remains the most fun way to develop thoroughly modern and truly muscular applications for the Mac. □

FontLab 4.5

continued from page 33

ligatures while knowing which languages to do it in. You can program these features and more, using Adobe feature-definition language, within FontLab's OpenType panels, where you can also proof the results.

Programs written in the Python language can automate tedious tasks and create new tools in FontLab. Python programs can report on or edit just about any aspect of a font or glyph, from counting empty cells to moving nodes by algorithm. An unofficial guide to Python and FontLab is at <http://dev.fontlab.net/flpydoc/>.

Macworld's Buying Advice

Professionals who take the time to tackle FontLab's toolbars will be rewarded with its power and ease of use—especially after the sticky-mouse bug is fixed. People accustomed to Fontographer's interface will find FontLab somewhat familiar but far more advanced, and FontLab will also accommodate users who relish the Python scripting capabilities of RoboFog. □

DATAVIDEO DV BANK

Drive That Acts like a Tape Deck Provides Improved Workflow for Video Editors

BY BEN LONG

DV cameras provide an easier production workflow than any previous video technology. But despite the power of digital editing, tape can still be a hassle. That's where Datavideo's DV Bank comes in. The DV Bank is an external FireWire hard drive that allows you to capture video from a DV camera or deck without using a computer. Although it's not a replacement for a tape deck, the DV Bank and its accessories provide a number of unique capabilities, including time-lapse photography and automated playback, and it can reduce wear and tear on your DV camera or deck. What's more, it gives you instant random access to all of your media, a great time-saver when you're on location.

For the Record

Available with a capacity of 60GB (\$1,100) or 120GB (\$1,180), the DV Bank looks like a normal FireWire drive that has an LCD screen and standard transport controls on its face. The 60GB unit can record 4.5 hours of footage; the 120GB, 9 hours. The DV Bank provides 99 tracks, and the amount of video you can record into each is limited only by the size of your drive.

You record video to the DV Bank just as you'd record to any other DV deck. Simply plug in your camera via the FireWire port (either six- or four-pin), press the record and play buttons on the DV Bank, and let it rip. There's no need for a computer or any special software. The DV Bank captures and stores the video just as your computer would if you were using the capture facility of a video-editing program.

Instant Gratification

Once you've captured your video, you can quickly move to any track and play it back. To see your footage, you'll need to connect the DV Bank via FireWire to your DV camera or deck. Because the device is recording to a hard drive rather than to tape, you have instant random access to all of your captured footage.

To get the captured footage into your Mac for editing, you treat the DV Bank just like any other camera or deck and use your editing program's capturing facility to grab the clips you want. Unfortunately, there's no way to simply copy the captured media to your Mac; the process takes place in real time. This is the DV Bank's biggest weak-



ness, but Datavideo claims that the next generation will be able to copy directly.

The DV Bank obviously adds an extra step, but it has a number of uses. On the set, its immediate feedback allows you to quickly review a take without having to rewind your tape and risk breaking your time code. In postproduction, you can simply dump an entire tape to the DV Bank and then log and capture from there, limiting the amount of abuse your deck takes. And the DV Bank's ability to loop a track lets you set up a kiosk in which you can have unattended playback that doesn't require lengthy rewinding.

Loaded with Options

Datavideo's optional \$499 Intervalometer allows you to use the DV Bank to shoot time-lapse videos. With the Intervalometer, you can grab individual frames from your camera and move them to the DV Bank, using any interval you want. For shooting time-lapse, creating stop-motion animation, or shooting single frames, the DV Bank and Intervalometer combo is an ideal solution.

Other DV Bank accessories include a DC converter for running off a car cigarette lighter, and converter boxes for capturing from S-Video or YUV analog sources.

Macworld's Buying Advice

The DV Bank isn't for everyone. It's much more expensive than an external drive with an equivalent capacity, and it requires a somewhat different workflow. But for videographers who need an additional capturing facility or time-lapse capability, this sturdy, well-designed machine is a great tool. □

RATING: ★★★

PROS: Intuitive interface; instant random access to all of your captured footage.

CONS: Brings transferred footage into your Mac in real time instead of doing a straight file copy.

PRICE: 60GB, \$1,100; 120GB, \$1,180

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Datavideo, 562/696-2324,

www.datavideo-tek.com

HOT PRODUCTS



Macworld's TOP 5



1

★★★★ 1GHz PowerBook G4, 17-inch (\$3,299), from Apple Computer (www.apple.com): It pushes the limits of portability, but the 17-inch PowerBook is the best combination of features and performance in any PowerBook. It's an excellent workstation for video pros and designers (June 2003).

2

★★★★ 867MHz PowerBook G4, 12-inch (\$1,799), from Apple Computer (www.apple.com): Speedier than the iBook but smaller than the Titanium PowerBook, this model is ideal for mobile pros who need a small, light laptop (April 2003).

3

★★★★ Page Sender 3.0 (\$30), from Smile Software (www.smilesoftware.com): This easy-to-use, OS X-compatible fax application knocked our socks off by doing everything a fax machine does—except getting jammed (June 2003).

4

★★★★ SketchUp 2.2 (\$495), from @Last Software (www.sketchup.com): SketchUp is CAD software for the rest of us: we recommend it to anyone who has a desire to visualize in 3-D (June 2003).

5

★★★★ Final Cut Express 1.0 (\$300), from Apple Computer (www.apple.com): At a third of Final Cut Pro's price, this DV-only video-editing package brings professional features to users looking to move up from iMovie (May 2003).

MINIFINDERS More Hot Products Recently Reviewed

★★★★ Cleaner 6.0 (\$599), from Discreet (www.discreet.com): Improvements in performance and codec, as well as OS X compatibility, make this video-encoding utility essential for anyone who needs flexibility and power (June 2003).

★★★★ Color LaserJet 2500L (\$1,000), from Hewlett-Packard (www.hp.com): This color laser printer's crisp, clean laser output and truly reasonable price mean that small workgroups with big printing needs can benefit from color laser technology without putting too large a dent in their budgets (March 2003).

★★★★ CopyPaste-X 1.5 (\$20), from Script Software (www.scriptsoftware.com): CopyPaste-X goes well beyond just providing multiple Clipboard items that are available regardless of the app you're using. One nice extra is the basic word processor with support for fonts, colors, and text styles (June 2003).

★★★★ d2 FireWire DVD-Rewritable Drive (\$379), from LaCie (www.lacie.com): This fast, solidly built DVD-R drive has a slim, stackable case design and includes Mac-compatible DVD-authoring software (May 2003).

★★★★ Devedeon (\$399), from Formac (www.formac.com): The Devedeon FireWire DVD-R drive includes Mac DVD-authoring software but no blank media (May 2003).

★★★★ Director MX (\$1,199), from Macromedia (www.macromedia.com): While this isn't a revolutionary release in terms of new features, Director MX is an excellent upgrade for existing Director users. It now works with OS X, for both authoring and playback (June 2003).

★★★★ Dual-1.25GHz Power Mac G4, FW 800 (\$1,999), from Apple Computer (www.apple.com): The dual-1.25GHz Power Mac G4 supports new Apple technologies, namely FireWire 800 and AirPort Extreme. It's an excellent value and performs very well. Also, it's reasonably quiet (May 2003).

★★★★ Dual-1.42GHz Power Mac G4 (\$2,699), from Apple Computer (www.apple.com): This Power Mac G4 is not astonishingly faster than the dual-1.25GHz—but for \$700 more, you get nice extras that make it an outstanding value (June 2003).

★★★★ ExecutiveSync 1.2 (\$20), from Jason Weber (www.executivesync.com): ExecutiveSync uses Time and State synchronization to detect any changes in a file and provide you with accurate backups. But be warned: the program is slow, and it doesn't have a scheduling feature (May 2003).

★★★★ HL 5070N (\$499), from Brother (www.brother.com/usa/index.html): This monochrome networked laser printer's low price, excellent text printing, and Rendezvous capabilities make it a great choice if you want an inexpensive printer (June 2003).

★★★★ iDVD 3 (\$49), from Apple Computer (www.apple.com): iDVD 3 is a marvel—it lets you create stylish, professional-looking DVDs easily and quickly, and it's well worth its price (April 2003).

★★★★ Inspiration 7 (\$69), from Inspiration Software (www.inspiration.com): If you've ever lost a great idea in a brainstorming session's tsunami, Inspiration 7 will blow you away. This easy-to-use chart-drawing program handles the grunt work for you, so you can concentrate on being inspired (March 2003).

★★★★ Keyboard Maestro 1.2 (\$20), from Michael F. Kamprath (www.keyboardmaestro.com): Keyboard Maestro not only provides a great keyboard-based application switcher, but also gives you the ability to automate, via keystrokes, almost anything you can do on your computer (May 2003).

★★★★ LaserJet 4300n (\$1,879), from Hewlett-Packard (www.hp.com): The LaserJet 4300n workgroup printer is more expensive than the Xerox Phaser 4400N, but it ships with more RAM and has a higher duty cycle. Also, it's Rendezvous-enabled (June 2003).

★★★★ Marble Blast (\$15), from Garage Games (www.garagegames.com): Marble Blast is a refreshing bit of arcade fun; you roll through a maze from the point of view of the marble. It's got a lot of challenging levels, but it may be too difficult for younger players (June 2003).

★★★★ MP3 Rage 5.4 (\$25), from Chaotic Software (www.chaoticsoftware.com): MP3 Rage is the Swiss Army Knife of MP3 utilities. 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, and even convert MP3 files to other audio formats (April 2003).

★★★★ PGP Personal 8.0 (\$50), from PGP Corporation (www.pgp.com): PGP Personal 8.0 is an excellent and inexpensive solution for those who need to send and receive secure documents or simply protect the contents of files. The rewards for mastering the system are peace of mind and industrial-grade protection (April 2003).

★★★★ Phaser 4400N (\$1,400), from Xerox (www.xerox.com): This networked monochrome laser printer produces excellent text and very good graphics (June 2003).

★★★★ PowerShot S45 (\$649), from Canon (www.canon.com): The PowerShot S45 has the same CCD and image-processing chip as Canon's flagship PowerShot G3, but it's smaller and has only a 3x zoom lens. Its movie mode is very good, and it sports an AF illuminator. Red-eye is sometimes a problem, though (April 2003).

★★★★ Pro Tools LE 6 (\$75), from Digidesign (www.digidesign.com): Pro Tools LE 6 doesn't hold any surprises, but it does provide a comfortable transition to OS X. Its new file-

management tools and MIDI capabilities are excellent additions (June 2003).

★★★★ Reunion 8 (\$99), from Leister Productions (www.leisterpro.com): Even if you're a novice, you'll be able to learn this genealogy program in a matter of minutes. For current users, OS X compatibility and first-class charting features make it a compelling upgrade. There is no easier way to track your family's history (March 2003).

★★★★ Sony Ericsson Clicker 1.5 (\$10), from Salling Software (www.salling.com): This preference pane lets you use your Sony Ericsson phone to control your Mac remotely, making it one of those wondrous little utilities that demonstrate the power of interconnected technologies (June 2003).

★★★★ SPSS 11 (\$1,145), from SPSS (www.spss.com): SPSS is uniquely designed for people who have mountains of social-sciences or business data to analyze. For large-scale statistical problems, it's the best choice available on the Mac (June 2003).

★★★★ SuperCard 4.0 (\$179), from Solutions Etcetera (www.supercard.us): SuperCard 4 arrives in an arena already populated by RealBasic and Revolution, but so far SuperCard is the easiest to use, and it delivers extremely professional-looking Mac applications (April 2003).

★★★★ Traktor DJ Studio 2.0 (\$199), from Native Instruments (www.nativeinstruments.com): Traktor DJ Studio lets you mix, speed up or slow down, and apply cool filter effects to your songs. It's easy and fun to use, and a great alternative to lugging around your DJ hardware (June 2003).

★★★★ Tungsten T (\$399), from Palm Computing (www.palm.com): The Tungsten T is designed for people who want entertainment, expandability, and flexibility in a PDA. If you want a PDA that can easily speak with the other peripherals in your digital hub, you'll find that the Tungsten T can reach out in many ways (May 2003).

★★★★ Virtual PC 6 (\$219), from Microsoft (www.microsoft.com): This release doesn't make Windows emulation on the Mac much faster, just a little better. Integration with OS X's Dock and desktop mounting of disk images are nice additions (April 2003).

★★★★ World Book 2003 Jaguar Edition (\$68), from World Book (www.worldbook.com): Software MacKiev has updated World Book's stellar multimedia reference software to take advantage of OS X 10.2. It capitalizes on the Mac's graphics prowess and sports new and improved features that make this package even more compelling than before (May 2003).

★★★★ X-Plane 6.5 (\$60), from Laminar Research (www.x-plane.com): X-Plane is the king of the hill in Mac flight simulators. It's not a game, so expect to spend a few hours learning the basics and the interface. It's worth the effort (June 2003).

For reviews of these and hundreds of other products, visit www.macworld.com/reviews/minifinders.

- > Location X
- > Typelt4Me
- > FontBook
- > Typeset
- > Addressix
- > Imprint

Add Smarts to OS X

WHILE OS X HAS BROUGHT US A LOT OF IMPROVEMENTS—primarily stability, although I will admit that I've grown to like the Aqua interface—there are a bunch of things the Next crew should have borrowed

from the traditional Mac OS when they were crafting our “modern” OS. At the top of my list has been Location Manager: by the time OS 9 rolled around, it was a piece of cake to change your network, printer, time, and related settings based on where you were working. Two years after OS X's release, we're still limited to changing only the network settings. (I know you can switch printers in the Print dialog box, but why should I have to do that?) For all the hype about the Year of the Notebook, that's sad—I want more portability features.

On a more charitable day (not one when I actually worked in three separate locations), I would say that Apple had created an opportunity, not failed to follow through. The good news is that two developers, Alex Keresztes and Greg Novick, saw the opportunity and wrote a little application called **Location X** (★★★★), which does most of what the old Location Manager did, and a bit more.

The problem is simple: you work in more than one place, you have different network settings and printers, and you even have to use alternative mail-server settings in order to send mail. Location X takes your network settings as a starting point and lets you change all that stuff and more, via a very clean interface. In addition to the application, which lets you create and edit your locations, the duo has included a menu that allows you to move easily between locations.

If you move back and forth between work and home and need to use different SMTP settings in order to e-mail, Location X can do that (for Apple's Mail or Microsoft Entourage). It can also execute an AppleScript or a shell script when you select a location. And Location X's architecture is open, so enterprising third parties can create plug-ins that take advantage of location switching. All in all, Location X is not a huge deal, which is probably why Apple didn't include its features, but it certainly makes my life a lot easier as I travel, even between home and one of my offices.

Complete This Sentence

Typing stinks. I don't know how many characters I type in the space of a month, but it's way too many. For as long as I can remember, there have

been utilities that expand abbreviations into words, phrases, and even whole documents. Microsoft Office v. X has a nice autocompletion tool, but it works only for the Office applications, and only for words and short phrases.

Riccardo Ettore's **Typelt4Me** (★★★★) is a more powerful and systemwide autocomplete utility that has been around for a while on the classic Mac OS, and more recently on OS X—and my fingers haven't been quite so happy in a long time.

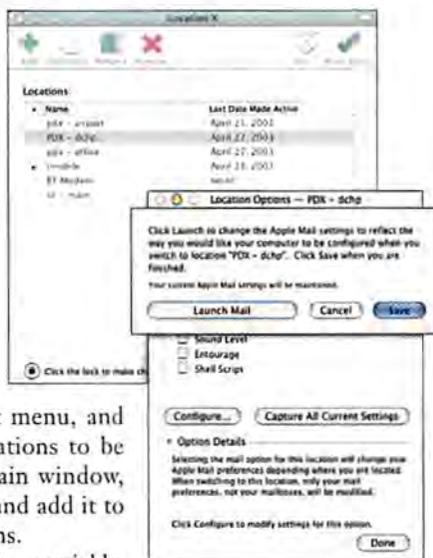
Typelt4Me is easy to use. It gets implemented as a keyboard type via the International preference pane's Input menu, and you can either create abbreviations to be expanded directly from the main window, or copy text to the Clipboard and add it to Typelt4Me's list of abbreviations.

It's not perfect; if you type pretty quickly, you'll occasionally find yourself getting ahead of Typelt4Me and will need to go back and fix part of an item. Also, it would be nice if it launched whenever you restarted your system—you need to start it from the Input menu each time, although Ettore says this is a limitation of OS X. But much of the typing I do is repetitive (count the number of times I mention the PowerBook G4 in a review of one to get an idea), and Typelt4Me is extremely useful for keeping me on task.

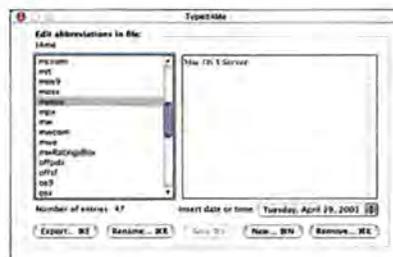
Just Your Type

One of my first jobs was setting type, which led to a lifelong love of fonts. Over the past 15 years, I've built a fairly extensive collection of digital fonts that's hard to corral when I want to find that special font for the project I'm working on. They're not all installed, of course, but they're all handy—and I'm nowhere near organized enough to have ordered specimen books of all my type.

continues



Find Yourself Location X makes changing networking, printing, and even mail-server settings a snap.



Save Your Wrist

Typelt4Me can help you avoid lots of repetition during your typing day.



Organize Your Fonts FontBook (left) and Typeset (right) help you keep track of your fonts.

For years I swore by Semplice Software's Font Gander Pro. It was the ultimate type-reference utility: fast, customizable, and stable (loading 500 fonts into a type-reference tool takes up a bunch of memory, and Font Gander Pro did it phenomenally well). It made looking for the right font a breeze, either on screen or on paper. Unfortunately, Font Gander Pro isn't available for OS X, and I've pretty much given up on using it in Classic mode. Luckily, there are options for font lovers who use OS X.

The best one I've found so far is Lemke Software's \$10 **FontBook** (★★★★), which also comes free with Extensis's Suitcase font-management utility. Primarily designed as a tool to print specimen pages of your fonts, it has many of the features I liked in Font Gander Pro—including the ability to open fonts that aren't currently installed—and offers a wide range of good specimen pages for printing. It doesn't perform well when you're looking at hundreds of fonts, but most people don't need to be as crazy as I am. The only downside for me is that I would also like the ability to design my own specimen pages, something Font Gander Pro excelled at.

Vizspring Software's **Typeset** (★★★★) is another good type utility, although at \$25, it's pricier than FontBook. Typeset is worthwhile if you want to look at type comparisons on screen, although it can print

limited text samples as well. It has a nice slide-show mode for displaying customized text, and as with FontBook, you can load uninstalled fonts. Borrowing from the iTunes interface, Typeset lets you build favorite sets of fonts and search for fonts by name.

Addressing the Issue

If you use Now Software's Now Up-to-Date & Contact, a full-featured mail application such as Entourage or Qualcomm's Eudora, or Palm Desktop, Apple's Address Book might not be your favorite—but it has been growing on me, and I've found that it's easy to move contacts between applications and Address Book.

Where Address Book shines is in its cross-application connectivity. For instance, with a Bluetooth-connected phone, SMS messaging or call management is as easy to use as Apple's iChat. And Apple has allowed developers to access names and addresses in Address Book for other things. Enter A Sharp and Ampersandbox, which have developed applications for printing envelopes and labels from the contents of your Address Book.

A Sharp's **Addressix** (★★★★) prints envelopes in any of 12 U.S. and international envelope sizes; you can also create custom ones. Addressix reads your contacts and groups from Address Book, although you can enter addresses directly or import a text file with addresses in it. The program is smart—it remembers the addresses you've printed, lets you add multiple return addresses, and will even use a picture file as your return address, which is helpful if you want to use your logo (it should be sized properly for printing, however). It also prints PostNET bar codes and will print groups of envelopes—the best way to do this is to create a custom group in Address Book, which shows up in Addressix's pop-up address list. Overall, Addressix is a clean, well-lit program, one that does its simple task very well.

If you want to print labels in addition to envelopes, take a look at Ampersandbox's **Imprint** (★★★★). While I don't think the interface is as smooth as Addressix's, it is as—if not a little more—powerful. Like Addressix, Imprint can read all the names and groups from your Address Book file, include PostNET bar codes, change fonts easily, and print on standard and custom envelope sizes. It also includes templates for more than 100 label types, including most common Avery labels, and can print on labels for Dymo's LabelWriter series of printers (800/426-7827, www.dymo.com).

As is the case with all the gems mentioned this month, you can download demo versions of both Addressix and Imprint and choose the one you like best—I think each program is a great example of how smart developers add value to the Mac OS. □

The Treasure Chest

COMPANY	PRODUCT	RATING	PRICE	OS COMPATIBILITY	CONTACT
Alex Keresztes and Greg Novick	Location X 1.2	★★★★	\$10	X	locationmanager@mac.com, http://homepage.mac.com/locationmanager
Ampersandbox	Imprint 1.1	★★★★	\$20	X	info@ampersandbox.com, www.ampersandbox.com
A Sharp	Addressix 1.3	★★★★	\$13	X*	addressix@a-sharp.com, www.a-sharp.com
Lemke Software	FontBook 3.8	★★★★	\$10	9X	lemkesoft@aol.com, www.lemkesoft.com
Riccardo Ettore	Typeit4Me 1.0	★★★★	\$27	9X**	support@typeit4me.com, www.typeit4me.com
Vizspring Software	Typeset 1.6	★★★★	\$25	9X	support@vizspring.com, www.vizspring.com

* Version 1.2.3 is available for OS 9 and for OS X versions earlier than 10.2. ** Mac OS 9 version number is 3.8.2.

RICK LEPAGE is Macworld's editorial director. Is there a utility or gadget you couldn't get along without? Send your thoughts on this column, or on things you'd like to see in future columns, to macgems@macworld.com.



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- > Freedom Force
- > Tony Hawk's Pro Skater 3
- > Deluxe Board Games
- > Worms Blast
- > WingMan Cordless RumblePad

Save the Drama

AT A TIME WHEN MANY GAMES SEEM TO BE LOOKING FOR A darker edge, with angst-ridden heroes confronting heavy moral dilemmas, it's refreshing to sit down in front of a game that doesn't come with a lot of

emotional baggage. From comic-book heroes to skate rats to tried-and-true board games, we've packed this month's *Game Room* with games that offer a more upbeat outlook. Of course, lighthearted doesn't have to mean lightweight—all of these titles require deft reflexes, technical skills, and finely honed strategy if you want to stay in play.



Super Duper The superheroes in Freedom Force use special powers and skills as they take on the forces of Lord Dominion.

I Need a Hero

If you're looking for something different from the endless parade of first-person shooters, Freedom Force should satisfy your craving. This gorgeous real-time strategy game (available from MacPlay) offers role-playing elements and an homage to some classic heroes. Freedom Force's graphics, story lines, and even its dialogue hark back to the Silver Age of Comics—a period that stretched from the mid-1950s to the late 1960s—when costume-clad superheroes like the Fantastic Four and Captain America defended humanity.

In Freedom Force, you control a collection of superheroes with monikers such as Minuteman, Alche-Miss, the Ant, and Man O' War as they protect the streets of Patriot City from a seemingly endless onslaught of treacherous foes. The nefarious mastermind is the evil Lord Dominion, who wields a mysterious substance known as Energy X. To complete each of the game's levels, you must accomplish a series of primary and secondary objectives. It's up to you to command your squad of superheroes to use their special powers as best suits the situation at

hand, whether it's breaking into an enemy stronghold or saving innocent bystanders from bands of bat-wielding thugs. You can add to the capabilities of your characters, or even create your own custom superheroes, by transforming their experience points into tangible new skills and attributes.

Freedom Force looks great—its scaling 3-D graphics and isometric perspective are similar to what you'll find in Blizzard's Warcraft III. And the game's control system is fairly easy to get the hang of, especially since the first few levels walk you through navigating, moving, and attacking. Keyboard commands exist for most major functions, but Freedom Force's origin as a PC game means that its control is really designed for a multibutton mouse equipped with a scroll wheel. I'd recommend getting one for optimal results.

Sound effects, music, and dialogue are all top-notch. The voice acting especially deserves a nod—intentionally campy dialogue like "Might makes right" could so easily fall flat in the wrong hands, but it's handled with heroic aplomb. The music likewise does much to set the mood and tone of each scene.

Freedom Force has a multiplayer mode, but this aspect of the game feels thrown together. Players engage in what amounts to little more than a team deathmatch-style activity with no options for variation. Multiplayer Freedom Force could have been so much more with some variations, but the opportunity is inexplicably squandered.

The Bottom Line Oozing both charm and cheese, Freedom Force is an incredibly fun and well-executed game that's sure to appeal to strategy gamers, role-playing fans, and lovers of classic comic books.

Freedom Force harks back to the Silver Age of Comics.

continues

FREEDOM FORCE

RATING: **★★★★**

PROS: Beautiful graphics; great audio.

CONS: Multiplayer mode is weak.

PRICE: \$40

OS COMPATIBILITY: Mac OS X

COMPANY: MacPlay, 214/855-5955, www.macplay.com

MAC FLIPALBUM 3.0

Effort to Bring Real-World Feel to Virtual Photo Albums Is Easy to Use but Yields Mixed Results

BY JASON CRANFORD TEAGUE

The concept of “natural media”—the attempt to bring a real-world feel into the digital realm—has been around almost as long as computers themselves. Mac FlipAlbum 3.0, from E-Book Systems, tries to approximate the real-world experience of turning pages in a photo album, by simulating the album on your monitor.

RATING: ⚡⚡⚡

PROS: Intuitive interface for some users.

CONS: Limited layout features; page turning is sluggish, especially with larger albums.

PRICE: \$40

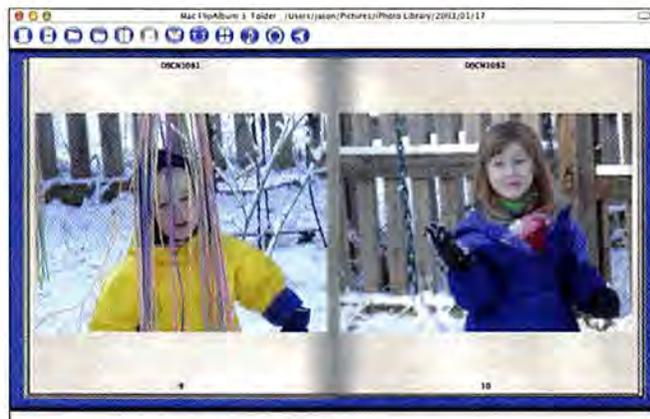
OS COMPATIBILITY: Mac OS X

COMPANY: E-Book Systems, 408/625-8000, www.ebooksys.com

For some users, this will come as a welcome relief from obviously digital interfaces, but for most, it will be only eye candy.

Mac FlipAlbum provides a simple way to create and view photo albums: you can browse your vacation photos by clicking anywhere on a page to advance forward or backward. When you move between pages, one or more animated pages “flip” past, giving the appearance of real pages turning. However, this animation can be sluggish, especially in larger albums.

Creating a new album in FlipAlbum is as intuitive as using the interface: when you start the program, just point to a folder of photos—FlipAlbum will place each image and its file name on its own page in the new book. You



Let Your Fingers Do the Flipping In Mac FlipAlbum, you move from page to page with a click of the mouse and then watch the pages flip by.

can also import or drag an image directly from the Finder into an open book to place it on the current page. However, FlipAlbum has significant layout and editing limitations. There’s no way to automatically lay out multiple images on a single page, as you can in Apple’s iPhoto. Although FlipAlbum includes basic image-editing tools, you’ll have to perform image correction in another program. Finally, despite a name that implies photo-album production, FlipAlbum can be used

to create only virtual photo albums, not hard copies.

Macworld’s Buying Advice

Mac FlipAlbum is definitely not a tool for professional photographers, but home users who are looking for a conceptual alternative to iPhoto may find FlipAlbum’s interface refreshing. However, those users should think twice before deleting iPhoto from their hard drives—there are still many things FlipAlbum can’t do. ☐

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

THE UTILITY COMPANY
ALSOFT

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Portfolio 6.1

continued from page 35

flow, letting you rename whole folders at a time. Professional photographers in particular will find this feature a welcome addition, as it helps in the creation of orderly contact-sheet collections, among other things.

Taking advantage of OS X's Quartz layer, Portfolio 6.1 not only catalogs PDFs but also lets you browse through multipage PDFs in thumbnail view and search for specific phrases in embedded text throughout a PDF's content. You no longer have to launch Adobe Acrobat to see what you have in your PDFs.

Portfolio 6 added the application-independent Portfolio Express palette, which floats above your running applications and gives you access to all of your catalogs. Version 6.1 improves on this feature by leveraging OS X's Dock to give you catalog access right from the Dock icon.

Finally, Portfolio 6.1 now outputs slide shows, Web pages, and read-only catalogs, using a Collect feature that lets you choose how you'll distribute your files and whether to include the Portfolio Browser in the package. The program also has e-mail distribution, so you can send your files as attachments.

Metadata and Searching

Like Photoshop's File Browser, Portfolio 6.1 reads EXIF (Exchangeable Image File) image data—hidden details beyond date, size, and color-space information, such as the make and model of the camera that shot the image, or whether the flash fired. But Portfolio does Photoshop one better by allowing you to set some of that data yourself—copyright information, captions, distribution rights, and so forth. Then you can sort and search your images by any particular EXIF data field, including those you've customized



Sync Swimmingly Portfolio users can easily add to and update asset catalogs.

yourself. The more specifically and extensively you fill in data fields, the better and more efficient your cataloging will be. Portfolio 6.1 acknowledges this, and it performs admirably well on this score.

Macworld's Buying Advice

This upgrade speeds digital-asset management and integrates it into your existing workflow by taking advantage of OS X's unique interface and structure. By adding the ability to catalog and search PDFs,

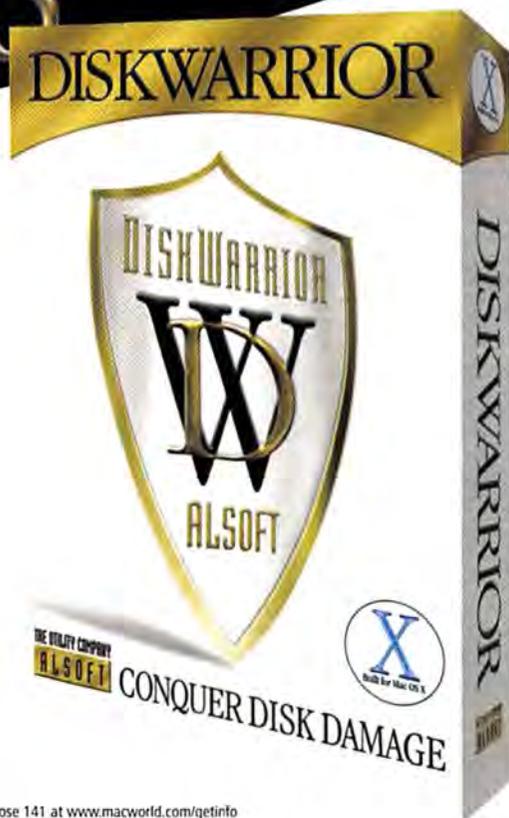
Dock access, and batch renaming to the existing FolderSync, Portfolio Express, and contextual-menu features, Portfolio 6.1 gives users the power to decide quickly whether a file is a digital asset or digital detritus.

Solo users may consider this upgrade pricey (although that's less of an issue for workgroup-oriented users), but if you're working in OS X as a single user or a small-office creative pro, you'll want this upgrade. Portfolio 6.1's robust efficiency earns the program's keep. □

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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Goofy Footin' Do combo tricks and land right for big points in the long-awaited Tony Hawk's Pro Skater 3, from Aspyr Media.

Skate or Die

With Tony Hawk's Pro Skater 3, Mac gamers can once again take to skate parks around the world and assume the guise of their favorite pro skateboarder. Brought to the Mac by Aspyr Media, Tony Hawk's Pro Skater 3 arrives almost a year after its PC counterpart, as console versions of the game languish in retail bargain bins. (In fact, the next version—for both Mac and PC—may be available in stores by the time you read this.)

In Tony Hawk's Pro Skater 3, you can choose to play any of a dozen well-known pro skaters, including Chad Muska, Bucky Lasek, and Steve Caballero—not to mention Tony Hawk himself. Or you can use the included editing tools to create your own skater or park. Each skater has unique strengths and weaknesses that you can capitalize on—some are better at performing certain kinds of tricks, for example.

If you're new to skateboarding on the Mac, an included series of tutorials will help you learn your way around the keyboard or game pad as you figure out how to make your on-screen avatar ollie and grind without eating too much asphalt in the process. (Face planting on the concrete leaves a nice bloody smear that will

make you think twice about trying that impossible trick again before you're ready.) Once you're in Free Skate or Career mode, you're welcome to explore the game's expanded levels (eight in all). You unlock new levels in Career mode by accomplishing a certain number of goals.

In addition to larger levels, Tony Hawk's Pro Skater 3 sports improved graphics with better animations and smoother shapes. There are a bunch of new tricks to learn, and the game's difficulty has been turned up a notch: progressing through Career mode, for example, requires that you pull off stunts that take some true mastery. And as with its predecessor, you'll have to string together combinations of stunts if you want to rack up the really big points.

Of course, no Tony Hawk game would be complete without a soundtrack of street music. This collection ranges from metal to ska to punk to hip-hop—a little something for every Mac-bound skate rat out there.

Tony Hawk's Pro Skater 3 doesn't support the wide-screen resolutions available on certain Macs, but instead limits itself to a maximum resolution of 1,024 by 768. This means that owners of wide-screen PowerBook G4s, iMacs, or Cinema Displays are stuck with black bands on either side of the screen.

The boxed version of the game doesn't include all of the features. You'll have to download a patch from Aspyr Media's Web site if you want to take advantage of the game's multiplayer mode or use force-feedback game pads. Even worse, this patch didn't appear until several months after the game began shipping. Although those problems have been resolved, it's dangerous to get into the habit of selling a product that doesn't do what it promises.

The Bottom Line Tony Hawk's Pro Skater 3 offers new challenges and improvements. Too bad it's incomplete out of the box and old news for Mac gamers, who can opt for Tony Hawk's Pro Skater 4 instead.

No Bored Games Here

For people who crave an online challenge far from the maddening pace of a typical

TONY HAWK'S PRO SKATER 3

RATING:

PROS: Large levels; extensive customization.

CONS: Doesn't ship with multiplayer or force-feedback support; old hat for console gamers; no support for wide-screen resolutions.

PRICE: \$40

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Aspyr Media, 888/212-7797, www.aspyr.com

Go Wireless

Anything that reduces clutter is a good thing. An ADC monitor and an AirPort card can eradicate several cables from your gaming setups. For even more freedom, turn to the WingMan Cordless RumblePad, a wireless game controller by Logitech.

In truth, this game pad isn't entirely wireless—it uses a 2.4GHz wireless transmitter connected to your Mac via USB. But it's better than having a snakelike cable messing up your desk. The WingMan Cordless RumblePad is hefty. That's partly because it includes force-feedback motors to give you rumble and shake in supported games, and partly because it needs a power source—four AA alkaline batteries (Logitech includes the first set with the pad).

Despite its heft, the RumblePad is ergonomic and comfortable: it has a directional pad on its left side, two analog joysticks within easy reach of your thumbs, a throttle slider, and an array of programmable buttons on its top and leading edge.

The WingMan Cordless RumblePad requires Jaguar. While Mac game support for force feedback is still in its early stages, the controller should work with many other Jaguar-supported games—sans shake and rattle, of course. That said, not all games



may support the game pad's analog joysticks, reminiscent of the ones you'll find on PlayStation controllers.

The pad comes with only Windows software. However, the included documentation says that the product is Mac compatible. Unfortunately, the unit I tested didn't have any mention of Mac compatibility on the box, which may frighten away casual buyers.

The Bottom Line If the convenience of a wireless game pad and future support for force-feedback technology appeal to you, the WingMan Cordless RumblePad is a home run.

WINGMAN CORDLESS RUMBLEPAD

RATING: ★★★

PROS: No cables to clutter up your desk; lots of programmable buttons.

CONS: No Mac software included; force-feedback support still weak in games.

PRICE: \$50

OS COMPATIBILITY: Mac OS X

COMPANY: Logitech, 800/231-7717, www.logitech.com

shoot-'em-up, Freeverse Software has bundled eight classic board games with enough embellishments and enhancements to create a solid little package. Deluxe Board Games includes expanded editions of Freeverse's previously free offerings: 4 In A Row (a Connect Four-style game), 7th Fleet (a fun version of Battleship), Mancala (an African strategy game involving cups and stones), Reversi (the flipping game that's sometimes called Othello), and Go (a game in which you take control of the board by surrounding your opponent's pieces), as well as standards like Checkers, Chess, and Tic Tac Toe.



You Sunk My . . . In Freeverse's Deluxe Board Games, 7th Fleet is one of eight board games you can play solo or online.

Each game has an online component, supported through Freeverse Software's GameSmith online service. GameSmith offers some nice features; its ladder rankings, for example, let you compare your ability with potential challengers' so you can size up the competition. And GameSmith's chat area can be much friendlier than those of other online gaming services. If that's not your thing, the deluxe versions—all except Go, that is—now also let you face off against the computer. So when you're on the road or don't feel like socializing with other gamers, you can fire up a computer-controlled AI instead. Choose one of multiple intelligence levels, ranging from Poopy Baby to Basque Poet, for your imaginary opponent.

Deluxe Board Games retains Freeverse Software's trademark offbeat sense of humor. Take *emotidolls*, for example. These graphical representations of you show your online opponent how you feel. However, unlike the more familiar emoticons, emotidolls demonstrate an entire body language—for example, slumped shoulders or an elated disco dance.

continues

Harry Potter
AND THE CHAMBER OF SECRETS™

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DELUXE BOARD GAMES

RATING: ★★★★★

PROS: All games are simple to learn and use; great value.

CONS: No solo play for Go; plain audio could use some dressing up.

PRICE: \$20; free for .Mac users

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Freeverse Software, 800/373-3837, www.freeverse.com

As with any Freeverse offering, the production quality is top-notch, with attractive graphics and perfunctory but serviceable sound effects and music. And at \$20, this collection is an excellent value (the bundle is free for users with .Mac accounts).

The Bottom Line With Deluxe Board Games, Freeverse Software has answered the call for simple, well-crafted, online-capable board games. Hopefully, this will draw new players to online gaming.

Nematode Navy

Team 17's popular Worms franchise hasn't had much support on the Mac over the years. So it's a little odd that the atypical Worms Blast, an arcade puzzler that takes a page from classics such as Bust a Move and Snood, is the first to appear. Nevertheless, this fun little romp from Feral Interactive has engaging graphics, a great soundtrack, and game play varied enough to keep you interested and challenged.

In Worms Blast, you'll man a small boat as one of a selection of different cartoon characters: Boggy B the worm, his sister Suzette, Chuck the pigeon, Ethel the pensioner, Calvin the sheep, or Stavros the skunk. Each character has special talents and a boat that handles a bit differently. The goal is to shoot down collections of colored blocks in the sky by matching the color of your weapon to that of the blocks. Special blocks will aid or impede you: bouncy blocks, for example, cause your weapon payloads to bounce away, while you can match rainbow-colored blocks to any weapon color. You'll also collect power-ups such as stars and crates along the way.

If that were all it offered, Worms Blast wouldn't merit much interest. To make things more challenging, the game provides different playing modes, each with its own rules and goals. In addition to an extensive Puzzle mode, the game features

a Tournament mode, which provides five unique challenges, such as Target Alley, where you shoot moving targets, and Super Frogging, where you destroy on-screen targets while avoiding moving obstacles. A Versus mode lets you compete against other players (only on the same machine, alas) or against the computer. If you're a fan of pop-pop, Ambrosia Software's 2002 hit (★★★★; November 2002), give this a try. There are eight different games in Versus mode, including Deathmatch, Survival, Fight, and Star Race. In fact, some of these games are challenging to the point of frustration, and there are few options you can tweak to adjust that.



Blast Off In Feral Interactive's Worms Blast, you use your bazooka to shoot and destroy colored blocks.

Superficially, Worms Blast's flat cell-shaded graphics may look a bit simplistic and boring, but the game's production value is terrific, and those simple graphics look great in motion. What's more, the variety of play modes will keep you busy for hours. Download the demo if you're still not convinced.

The Bottom Line Worms Blast is beguilingly simple yet extraordinarily challenging. The cute graphics mask a demonically challenging game. □

WORMS BLAST

RATING: ★★★★★

PROS: Varied play modes maintain high challenge.

CONS: Occasionally frustrating; no Internet-based multiplayer option.

PRICE: \$40

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Feral Interactive, www.feral.co.uk

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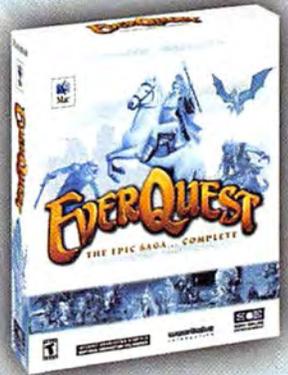
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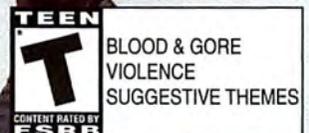


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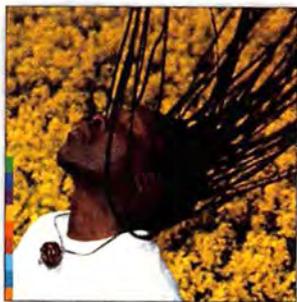
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Game Experience May
Change During Online Play



Geoffrey Oryema
Exile



Siouxsie & The Banshees
Superstition



The B-52's
Cosmic Thing



Pink Floyd
Dark Side of the Moon

BY JONATHAN SEFF



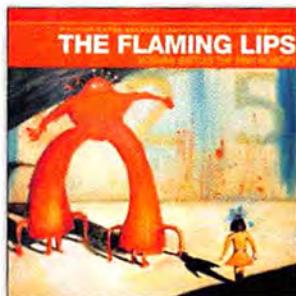
BEHIND THE MUSIC



Blur
Blur



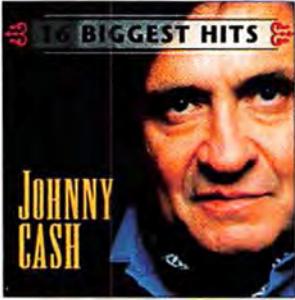
Weezer
Weezer



The Flaming Lips
Yoshimi Battles the Pink Robots



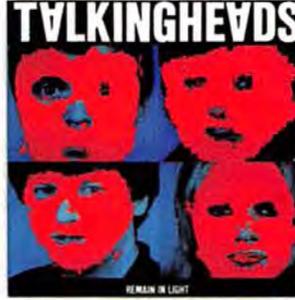
David Bowie
The Rise and Fall of Ziggy Stardust



Johnny Cash
16 Biggest Hits



Aerosmith
Permanent Vacation



Talking Heads
Remain in Light



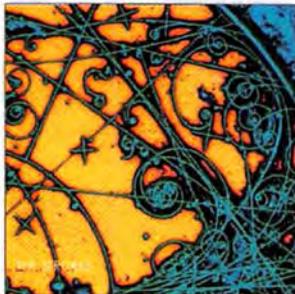
Norah Jones
Come Away with Me



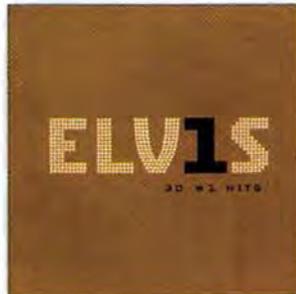
Take an In-Depth Look at Apple's Music Store, iTunes 4, and a New Generation of iPods

Although record companies are loath to admit it, your days of walking into a record store and buying an \$18 CD—often because you like one song you heard on the radio—may be coming to an end. The recording industry blames the downturn in music sales on the file-sharing phenomenon started by Napster and continued by its descendants, but the bottom line is that music lovers want more choices when they purchase and listen to music.

In the past few years, several online services have sprung up and attempted to provide legal and reliable alternatives to illicit music downloading. Mac users, however, have had limited options—and nothing designed with the Mac in mind. To top it off, all these services are subscription based—in most cases, you pay a monthly fee to rent music, a concept foreign to most music buyers. After all, when you buy a CD, you can listen to it for as long as you want. >>



The Strokes
Is This It



Elvis Presley
Elvis 30 #1 Hits



Andrea Bocelli
Sentimento



The Donnas
Spend the Night





When Apple announced the iTunes Music Store in April, few people were surprised—not because widespread leaks had allowed every newspaper and Web site to predict Apple's move, but because with the underlying technology of QuickTime and products such as Final Cut Pro and the iLife suite, Apple has demonstrated its commitment to, and focus on, the digital lifestyle.

In this special report, we look at how the iTunes Music Store works, its pricing structure and selection oddities, what you can do with the music you buy, and the competition—and we review the new iPods and iTunes 4—to find out whether Apple's foray into online music will be a successful extension of the digital hub.



"I sincerely hope it's going to revolutionize the silly old record business. It seems record companies can't agree on anything."

Bryan Adams, musician

Getting Started

The iTunes Music Store is a virtual shop where you can buy and download both complete albums and individual tracks from many major artists of different genres.

Logging On Launch iTunes 4 (which runs only in OS X 10.1.5 or later), and you'll see a new item in the Source pane, just above your playlists, called Music Store. When you click on this icon, the space normally occupied by your music files is transformed into a modified Web browser, complete with back, forward, and home buttons. It's through this interface (and this interface alone) that you connect to the iTunes Music Store.

Although you can begin to explore immediately, you'll need an Apple account to make purchases. In the upper right corner of the browser window, where it says Account, click on the Sign In button. This brings up a window that lets you use your existing account information to sign in (if you already have an account with the Apple Store). You'll then have a chance to verify your account information before logging in. If you don't have an Apple account, click on the Create Account button to register—all from within iTunes.

After this onetime login, the Music Store remembers your identity and displays your login

name in the Account window. Clicking on your login name lets you edit your account, view past Music Store purchases, and see how many computers you've authorized to play your purchased tunes (more on that later).

Browsing The iTunes Music Store gives you several ways to find music. Much like a brick-and-mortar record store, the home page has a changing assortment of albums, complete with album covers, prominently featured; they're listed under New Releases, Exclusive Tracks, Staff Favorites, and Up & Coming. Clicking on any cover takes you directly to the page for that album. From the same home page, you can also pick a genre—Rock or Jazz, for example—and be transported to its main page.

If you feel more comfortable searching the store as you would tunes on your hard drive, you can enter text into the Search Music Store box. You can also click on the magnifying glass inside the box, and choose Artists, Albums, Composers, or Songs—or choose Power Search (at the end of the drop-down list) for more-refined searching. An Artists search for Frank Sinatra, for example, takes you to a page that lists his top albums (in the upper half of the window), and songs (in the bottom half). The song list displays only the first 100 matches, so it's best to use Power Search when you're looking for specific songs or albums.

The Browse button lets you begin with a genre, pick an artist, narrow your search down to an album, and then view the individual tracks in a separate window (you can also use the Search feature to get to this window). From there, you can click either on the small arrow next to the artist's name, to be whisked off to a page that shows everything available from that artist, or on the arrow next to the album, to see detailed information about that album.



Do It Your Way The iTunes Music Store gives you several ways to search for music. One method is to choose Artists from the Music Store Search box and then enter a name. Here, we've requested lists of the Chairman of the Board's top albums and songs.

We gave our musical curmudgeon a \$500 iTunes Music Store expense account. Here's what happened.

BY PHILIP MICHAELS

It's safe to say that I'm not really up on today's music scene. Most of the bands I listen to are retired or, well, dead. So who better to test the iTunes Music Store than someone who only recently discovered that the Police had broken up? After all, if I'm able to feed my jones for the horribly unhip songs of yesteryear, then surely the Music Store will be a big hit with people who listen to music released within the last decade.

That was the reasoning of my bosses here at *Macworld*, anyway. And when they gave me one week and \$500 to spend in the iTunes Music Store, who was I to tell them that I didn't know 3 Doors Down from Three Dog Night?

TUESDAY

Old Man, Take a Look at My Life

It's clear from the moment you load the Music Store's home page that Apple is catering to a hipper crowd than the likes of me. I'm greeted by links for Dirty Child, Coldplay, and Godsmack, or, as they're known at my house, *Who?*, *Come Again?*, and *Gesundheit!* There's a prominent link for the new album by Kelly Clarkson, an amateur singer turned pop chanteuse through the miracle of reality TV. I figure that the fact I'm unfamiliar with this chart-topping sensation is America's problem and not mine, and I head off in search of music for and by old people.

WEDNESDAY

How Do You Spell "Furtado"?

A crushing disappointment this morning—the iTunes Music Store includes a Listeners Who Bought This Also Bought feature. Sadly, Apple refuses to acknowledge my contribution—that a user who purchased the Dean Martin *Swingin' with Dino* compilation album also bought tracks and albums by Pink Floyd, Miles Davis, the Boomtown Rats, and Ennio Morricone. Who is Apple to decide that the same audience that thrills to "That's Amore" won't also enjoy a few choice cuts off of *Atom Heart Mother*?

More troubling, however, are my struggles with the Store's nitpicky search engine. For the musically inept, it leads to a number of mind-boggling questions. How exactly does Weezer spell its name? (*Weazer?* *Wheezer?*) If I want to download "You Shook Me All Night Long," do I type the band's name as AC-DC, AC/DC, or ACDC? (Trick question—that song isn't in

Apple's library at all.) And why isn't my search for Mötley Crüe turning up any tracks? (Because you forgot to include the umlauts, silly man.)

THURSDAY

This One's for You, Falco

If you ask me, one of the great benefits of the iTunes Music Store is that it lets you download individual songs from albums you wouldn't otherwise consider buying. Why buy the hen when you can get the eggs for free? Or to put it more accurately: why buy anything but "Tubthumping" when the rest of that Chumbawamba album makes you bleed from the ears?



To put this theory to the test, I downloaded 39 of VH1's 100 Greatest One-Hit Wonders, from Blind Melon's "No Rain" to Soft Cell's "Tainted Love." However, not even a *Macworld* expense account is incentive enough for me to own a copy of Billy Ray Cyrus's "Achy Breaky Heart." And while the iTunes Music Store contains at least ten versions of "Puttin' on the Ritz," not one of them is the rendition by tap-dancing Dutch superstar Taco. Someone needs to launch an investigation.

FRIDAY

Apple Saves Me from Myself

My favorite Music Store feature by far is the alert that pops up every time you try to buy a song or album. More than once, that warning has saved me from buying something when all I really wanted to do was listen to a 30-second sample.

Even with the alert, I still wound up unintentionally purchasing several cuts off of *Kilroy Was Here* when I absentmindedly clicked past the dialog box. If anything, Apple should have more warn-

ings—something along the lines of "Dude, you know you're about to buy a Styx album, right?"

I also like the advisory that lets you know whether you're buying the "Explicit" or "Clean" version of a song. I bought the Explicit version of "Loser," by Beck. After listening to it several times, I was unable to determine the word or words in "Loser" that made Apple slap an Explicit warning on Beck's breakout hit. Then again, I'm unable to determine many of the words in the song. Maybe Mr. Beck should learn to enunciate more clearly.

THE WEEKEND

Saturday's All Right for Fighting

The missus has found out that my employers are subsidizing hundreds of dollars' worth of music purchases, and she wants in on the scam. Whatever ethical dilemmas might be involved in buying your wife Duran Duran, Depeche Mode, and Cutting Crew tracks on the company's dime, there are very few technological barriers—Apple's "store your music on as many as three Macs" policy covers my Power Mac at the office, my PowerBook on the road, and my wife's iBook.

True, that limit prevents me from allowing my *Macworld* coworkers to listen to music bought and paid for with company funds. But this is something Apple will have to hash out with piracy-spooked record companies.

"Would you like any of the songs that I've bought?" I ask my wife. She makes a face like I've just offered her an hors d'oeuvre tray of fresh roadkill. "Your music?" she replies, "Oh, Lord, no." This from a woman who just requested that I purchase Night Ranger's "Sister Christian."

MONDAY

The Damage Done

Turns out I've downloaded \$169.40 worth of songs, well short of my theoretical \$500 budget. I could have easily kept spending, were it not for recurring nightmares in which my bosses stroll up to my desk and say, "Well, we've had to let Christopher Breen go, and we've traded Andy Ihnatko to *PC World* for cash. But hey—enjoy that live version of 'Love Gun' you're billing us for."

\$169.40 buys you a lot of music—187 songs, enough to add a half-day's worth of music to my iTunes Library. And when that library features both the Divinyls' peppy "I Touch Myself" and the haunting melodies of Dexy's Midnight Runners, that's a half-day worth living.



This method works pretty well, although some artists are oddly classified, and many are listed in more than one genre—flutist James Galway shows up in Alternative, Bill Cosby is listed in Jazz, and Boyz II Men finds its way into Latin. Spelling and capitalization inconsistencies also throw off searches. For example, the band Tower of Power is listed twice in the Rock genre, once with the word *of* capitalized and once with it lower-cased—and each listing brings up a completely different set of albums. There are also many album duplicates, especially in the Classical genre.



"It's as sure as fleas on a yard dog that a few years from now we'll look back and say this is the point that Apple became a digital-media company."

Phil Leigh, media analyst, Raymond James & Associates

Another quirk may confuse you as you browse: while the Music Store lists release dates for most albums, they are the CD-release dates. For example, the Store lists Genesis's 1970 album *Trespass* with a 1993 release date. Amazon.com, on the other hand, often shows both the CD- and original-release information.

Try Before You Buy For each track in the Music Store, Apple provides a 30-second streaming preview, including fade-outs—so instead of picking up a CD at your local record store and *hoping* it contains that catchy tune you heard last night in a car commercial, you can be sure.

Keep in mind that the song preview doesn't necessarily represent the audio file's quality. Many streams sound tinny and as if they'd been run through a flanger, which adds a whooshing-airplane effect to music. But the quality of songs and albums we've purchased is much better than their previews led us to expect.

What's In Store

Two aspects of the Music Store aren't immediately apparent from casual browsing: the variety of artists and albums, and the format used for the music files.

Content The iTunes Music Store launched with 200,000 songs, mostly from the five major record labels: BMG Entertainment, EMI Recorded Music, Sony Music Entertainment, Universal Music Group, and Warner Music Group. Apple has divided this collection into genres such as Rock, Jazz, Classical, World, R&B, Country, Soundtrack, and Blues. The store also carries exclusive tracks from such artists as Eminem, U2, Bob Dylan, Fleetwood Mac, Alicia Keys, and Jewel.

At press time, Apple had added thousands of songs and promised that more would come on a weekly basis, but you still won't find the breadth of music that even a

what's missing?

12 Things We Want in the iTunes Music Store

- 1 A wider selection, including music from more major artists and from independent labels.
- 2 Bookmarks that let you save items to purchase later.
- 3 A "Just Added" section that lists the tracks and albums that have appeared in the last day and week.
- 4 Editorial and user reviews.
- 5 Searching by subgenre; for example, a Broadway subdivision of the Soundtrack category.
- 6 Full liner notes for purchased albums.
- 7 Release dates of original music, not of CD versions.
- 8 Parental controls for preview and purchase of explicit tracks.
- 9 Ways to give music as a gift to another user.
- 10 The ability to order a CD instead of electronic files.
- 11 The ability to upgrade to a full album after you've already bought a track or two.
- 12 An easy way to link to the Music Store from external Web sites (perhaps as an affiliate program).

local record store might carry. There's no music from the Beatles, Led Zeppelin, Queen, or Madonna, just to name a few. And music from independent labels isn't included yet.

For many artists, you'll find only partial catalogs or incomplete albums. For example, many of the albums (all on the Columbia label) by Billy Joel, Bruce Springsteen, and Bob Dylan aren't available in their entirety (and those that can be purchased are for sale only by the track, not by the album). Apple says that this is due to licensing issues involving certain tracks, and to the fact that it takes time to add music to the Store.

Apple has not only added music but also taken it away. For example, we noticed that Radiohead's *OK Computer* album and several Van Morrison songs,

continues on page 63



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which had been available from the Store at first, were no longer listed when we searched for them days later.

Format Instead of the popular MP3 format (created more than a decade ago) that most iTunes users are familiar with, the music you buy from the iTunes Music Store is in the Advanced Audio Coding (AAC) format.

Developed in part by Dolby Labs, AAC creates higher-quality audio files than MP3, and at lower bit rates (so files are smaller)—the result is that Apple's 128-Kbps AAC files sound better than MP3 files encoded at the same, or even somewhat higher, bit rates.

AAC supports multichannel audio and sampling rates as high as 96kHz—leaving the door open for surround



THE RIGHTS STUFF

iTunes Music Store files aren't like any MP3 file you've seen before. Here's an important difference.

Improved audio quality isn't the *only* reason Apple decided to use AAC files, rather than the more familiar MP3 format, in the iTunes Music Store. These new files are also encoded to be linked to specific Music Store accounts, through a process Apple calls FairPlay—a digital rights-management system that blocks certain file uses in an attempt to squelch music piracy.

Since the launch of the first iPod, in 2001, Apple has championed the right of consumers to use their music in whatever ways suit them—as long as it's legal. So why does the iTunes Music Store deviate from that policy by adding restrictions to the music you've bought? The answer is simple: Apple needed to sign up all the major record companies for its service, and those companies are currently waging a war against online music sharing, which began with Napster and continues today with systems such as Kazaa. So to make the deal, Apple had to offer a digital format that couldn't easily be shared via those networks.

File Lockdown As a result, the files you buy from the Music Store (their names end with *.m4p* rather than the *.m4a* of regular AAC files) have restrictions that normal MP3 files don't have. The most significant is that only three Macs can play music purchased with your Music Store account. Here's how it works:

The first time you play a file downloaded from the Music Store, you'll be asked to enter your Music Store password. iTunes then connects to an Apple server via the Internet and registers your Mac as one of the three allowed to play tracks from that account. (If you forget to authorize your Mac before disconnecting from the Internet, you won't be able to play the files until you reconnect and do so.)

Once you've authorized your Mac, you can download and play any song without re-entering your password. However, if you want to play

tracks on a fourth Mac, you'll first need to go to one of the other three authorized systems and choose Deauthorize Computer from iTunes' Advanced menu. (You'll also need to do this if you plan on reinstalling Mac OS X or selling your Mac; otherwise, Apple's servers will continue to count that Mac as one of your three authorized systems.)



You can listen to Music Store tracks on an unlimited number of iPods, which you don't have to authorize. The one catch is that iTunes will transfer only those Music Store files that the Mac is authorized to play. But don't plan on loading your Music Store files on other music players: no other music-playing products (hardware or software) currently support them. (And since only Apple can provide access to Music Store files, the makers of those products are now at Apple's mercy.)

Music to Go Because of FairPlay's three-Mac rule, you may find your listening habits restricted in ways that seem to run counter to Apple's own policies. For example, Apple clearly believes that streaming music from one Mac to another is a legal form of music sharing—after all, they built this feature into the iTunes 4 software. But the FairPlay system doesn't treat Music Store files the same way. You can't play Music Store tracks via iTunes'

music sharing on an unauthorized Mac—even if the Mac that's doing the sharing is authorized.

You can burn Music Store tracks to CD, but you can burn a particular playlist only ten times. This is to discourage you from using iTunes to mass-produce CDs. However, re-creating the playlist or changing it in any way will restart the count.

You can get around some of these limitations, to stream your music or listen to it on other devices, by converting your files to the MP3 format. The easiest way to do this is to burn the tracks to a CD from iTunes and to then immediately convert them from the CD into MP3 format. (In fact, you'll have to do this if you want to burn an MP3 CD-ROM of your Music Store files; iTunes won't convert protected files to MP3s without burning to a CD first.)

Rights and Wrongs Critics of rights-management systems argue that these systems overly restrict consumers without effectively deterring an already widespread music-piracy network. "While they say that digital rights management is about keeping honest users honest, it really ends up keeping honest users in chains," says Fred von Lohmann of the Electronic Frontier Foundation, a technology-rights advocacy group. While Apple's FairPlay system is much less restrictive than other online music services, von Lohmann says that a much better approach is the one taken by EMusic: the service's files are all standard MP3 files and therefore free of copy protection. (The files contain a digital watermark identifying the customer who originally bought the file.)

Our Take If you've got a couple of Macs and an iPod, you're in the sweet spot for the iTunes Music Store: beyond a few entries of your password, you'll never notice Apple's FairPlay system. But if you have more than three Macs, a non-Apple music player, or a bunch of friends who share their files via iTunes, the deal Apple had to strike with the record companies in order to open the Music Store may have you seeing red.—JASON SNELL

iTUNES 4 ▶

SHOPPING, SHARING COME TO APPLE'S MUSIC PLAYER-ENCODER

On the surface, iTunes 4 isn't a huge upgrade, but Apple wasn't content to let the application remain just a music player and encoder. As the iTunes Music Store's interface, iTunes has become a Web browser and an e-commerce engine. With new sharing capabilities, it's also a streaming server. Couple those features with added support for the Advanced Audio Coding (AAC) format, and it's clear that iTunes 4 is a must-have update for everyone who uses the program. Just keep in mind that this app runs only on OS X 10.1.5 or higher.

Let's Go Shopping

iTunes is still an excellent music encoder, organizer, and player, but it now wears an additional hat: iTunes 4 is also a music-store browser, accessible via the new Music Store item in iTunes' Source pane. And iTunes 4 even displays the cover art Apple includes with purchased tracks and albums. Click on the last icon in the lower left corner of iTunes to open the artwork window. To add your own artwork (something you downloaded from Amazon.com or a picture you scanned, for example), select an album or song and then drag the image onto the artwork window. In a small but nice touch, iTunes embeds the image

in your music file, so the image stays attached when you move your music to another Mac.

AAC: Not Just for Playback Anymore

iTunes 3 could play several file types, including MP3 and the standard, unprotected AAC format. iTunes 4 can also encode music in the AAC format—you just have to install the free QuickTime 6.2 update first.

Before iTunes 4, you could use the \$30 QuickTime Pro 6 to encode one AAC file at a time. For batch encoding, you had to use another application. With iTunes 4, you can rip your CDs to AAC with the same simple tools you use for MP3 encoding—and all iPods, with a free software update, can now play these files (for more on the new iPods, see "Third-Generation iPods"). iTunes 4 can even replace your old MP3 files with new AAC files you encode, and it keeps your song ratings, play counts, and other song data intact.

This new encoding option is a welcome addition. And when we encoded a track to both AAC and MP3, at the same bit rate, on a dual-867MHz G4, the file sizes were the same and took the same amount of time to encode, but the quality of the AAC file was higher.

sound and better-quality files in the future—and it requires less processor power to decode, so your Mac doesn't need to use as many resources just to play music.

Purchasing Music

Once you've learned your way around the iTunes Music Store and previewed some tunes, Apple hopes your next step is to buy something.



"Getting music on store shelves takes so much schmoozing and politics. With this service, you can listen to a tune and download it. It goes straight to the user."

Billy Gould, record producer and musician

RATING: ★★★★★

PROS: Solid iTunes Music Store interface; good AAC encoding; easy music sharing; improved search feature.

CONS: Can't add sharing passwords to Keychain; no bookmarking of shared iTunes addresses; no visible differentiation of file types in library.

PRICE: free

OS COMPATIBILITY: Mac OS X

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

All the World's Your Jukebox

One new feature we've enjoyed playing with here at the *Macworld* office is iTunes' library sharing. Once you enable the Share My Music option in the new Sharing pane of iTunes' preferences, Apple's Rendezvous technology lets other iTunes 4 users on your local network see your music. You can share individual playlists or your entire library, and you can password-protect your shared music to limit access—you can't, however, store a password in your Keychain, so you have to enter it every time you connect to someone's shared music.

Using an IP address or domain name, you can also reach outside your network to connect to libraries on any Internet-connected Mac running iTunes 4 (Macs behind firewalls may have to open up port 3689 for this to work, and each server can have only five users at a time). Alas, iTunes doesn't let you bookmark other people's libraries; this can be frus-

Song Pricing One of the Music Store's biggest selling points is 99-cent songs, but in reality, pricing is a bit more complicated.

Many of the tracks cost less than a buck, and they are a great alternative to buying an entire album when you like only one or two songs on it. But often, songs in the Music Store aren't available on their own—you must purchase the entire album, just as you would from any record shop. Typically, you can't purchase songs longer than seven minutes as individual tracks. This affects jazz and classical albums disproportionately, as they tend to be made up of longer songs.

Occasionally, you can buy a longer track by itself—especially when the whole album isn't for sale. Because of Apple's flat pricing of tracks, however, you'll find oddities such as *The Who Live at Leeds*, Deluxe Edition. The songs "My Generation" and "Miracle Cure" are each \$0.99, even though the first

trating when they're not on a local network and must be accessed manually. To circumvent this limitation, you can create an Internet Location file outside of iTunes and use it to connect to the iTunes-sharing computer. To create the file, type `daap://serveraddress` into just about any place you can enter text, select the text, and drag it to the desktop.

Once connected, you can listen to a streaming version of music in someone else's library, but you can't copy the actual files. Although people viewing your library can see MP3 files, standard AAC files, and the protected AAC files purchased from the iTunes Music Store, they can't play the Music Store tracks unless you authorize their Mac with your Apple login and password. We understand why Apple made this choice, but it does make for an aggravating experience: since you can't tell a file's type by looking at it in an iTunes library, you can't know which songs you can listen to until you try.

If you like applications such as Synergy or Kung-Tunes, which work with iTunes to display currently playing tracks in separate windows, you're out of luck. These tools don't work when you're listening to songs from other people's libraries.

Small Improvements

Previous versions of iTunes had a Search box, but you couldn't specify which tags—information stored with a file—you wanted to search. iTunes 4 lets you



EyeTunes With iTunes 4, you can not only see music that's shared on your local network, but also add and display cover art for all your music files.

search by artist, album, composer, and song; click on the magnifying-glass icon in the Search box.

iTunes' Burning preference pane has a new option called Data CD (Data CD Or DVD if you have a DVD-RW drive) that lets you burn a Mac-formatted data disc containing the files in a playlist. When combined with iTunes' Smart Playlist feature, this makes backing up or moving files to another Mac an easier task.

Finally, Apple has added a Beats Per Minute (BPM) field, so DJs who enter this information can use it for mixing songs together.

Potential Problems

You may come across a few annoyances after upgrading. For example, because

iTunes now pays attention to your systemwide font settings, track information may look a bit fuzzy. You can fix this by adjusting your font-smoothing settings in the General pane in OS X's System Preferences.

It should also be noted that some people have experienced muffled sound and volume adjustments after upgrading from iTunes 3. We haven't experienced any such problems.

Macworld's Buying Advice

Anyone who's interested in improved sound quality with AAC files, who wants to browse and buy from the iTunes Music Store, or who'd like to share and access other people's iTunes music should download iTunes 4.—JONATHAN SEFF

is more than 15 minutes long and the second is only 12 seconds long.

Album Pricing If you like most of the songs on a disc—or if you enjoy buying complete albums and letting unfamiliar songs grow on you—you'll be glad the store offers album downloads as an alternative to track downloads.

Most complete albums in the iTunes Music Store cost \$9.90 or \$9.99. But some albums with fewer than ten tracks cost only as much as the individual tracks—John Coltrane's *Blue Train* is \$4.95 (five tracks) and McCoy Tyner's *Inception* is \$5.94 (six tracks)—while others cost more—Pink Floyd's *Dark Side of the Moon* is \$14.99 (nine tracks) and Mahler's *Symphony no. 10* is \$11.99 (five tracks).

One thing to remember: if you buy a track or two from one album and decide later that you want the entire recording, tough luck—there's no upgrade path.

Checking Out When you're ready, buying a track or album is simple. First choose either the 1-Click or the Shopping Cart method of purchase in iTunes' Store pane, under Preferences. If you haven't logged in yet, do so now.

With the 1-Click method, you'll find a Buy Song button next to available tracks and a Buy Album button next to albums (or Add Song and Add Album if you're using Shopping Cart). Clicking on either button brings up a warning box so you can verify your choice—although you can turn this feature off in the future, leaving it on can prevent accidental purchases. (If you're using a shopping cart, items are added to the Shopping Cart window in iTunes, and you get a similar warning when you finally decide to buy.) After you confirm your choice, the files begin to download in the background.

The first time you buy something, iTunes creates a playlist titled Purchased Music, and everything you buy



THIRD-GENERATION IPODS ▶

NEW BUTTONS, SLIMMER DESIGN HIGHLIGHT UPDATED MUSIC PLAYERS

When Apple introduced the original iPod, in 2001, the music player was a revelation: a combination of massive storage and a simple interface in a remarkably small package. Now, two years later, Apple has released its third-generation iPods. And while the new players don't offer quantum-leap improvements, they do include numerous small enhancements that will make them even more appealing to music fans.

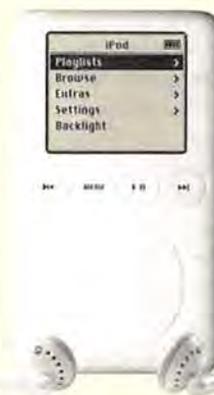
Smaller . . . and Bigger

With the new iPods, Apple once again raises the bar for storage capacity: the new line includes 10GB, 15GB, and 30GB models (instead of the 5GB, 10GB, and 20GB varieties previously available). Even more impressive is the fact that Apple has managed to squeeze all this storage into a noticeably thinner, lighter case that fits more comfortably in the palm of your hand. (At this rate, Apple will be able to fit the entire musical output of the human race on your wrist by 2008.) The new faceplate's rounded edges are also easier to grip than the

right-angled slab on earlier models. But there is one downside to the new design: to make everything fit, Apple had to switch to a smaller battery; the company rates these iPods as providing only eight hours of continuous use—as opposed to the previous models' ten hours.

The new iPod also sports a redesigned interface. Apple has eliminated the four buttons encircling the iPod's scroll wheel and replaced them with a horizontal row of four round buttons—previous, Menu, play/pause, and next—below the display. (The select button is still located at the center of the scroll wheel.) Additionally, all of the iPod's interface elements, including the scroll wheel, are now touch-sensitive—instead of actually moving up and down, they simply react to contact with your finger. As a nice addition, pressing and holding the Menu button now turns on a backlighting feature that illuminates the buttons in a red glow.

If you're an iPod veteran, the new button configuration may disorient you at first—but you shouldn't have too much trouble adapting. We found that this



interface was easier to navigate than the old system. More importantly, people who are new to the iPod should find that the controls are immediately understandable.

But as for the new, touch-sensitive buttons, they

were a bit too sensitive for us. We often activated them accidentally, making us heavily dependent on the iPod's Hold switch. (Alas, the Hold switch also has a new design—it's taller and narrower—and our short-nailed fingers had a hard time moving it.)

The new iPods also eliminate the frustration many users experienced with Apple's wired remote control, which often became disconnected from the headphone jack. To give it a firmer connection, Apple has added a second plug

ends up there (as well as in your Library). If any download cuts off, click on Check For Purchased Music (in the Advanced menu), and iTunes grabs the missing tracks.

You need a credit card with a U.S. billing address to buy music. Because Apple bills your credit card in cycles,

songs on as many as three Macs, listen to them on an unlimited number of iPods (a free firmware update is required for older iPods), and burn them to audio CDs. (For more on digital rights management with the iTunes Music Store, see "The Rights Stuff.")

According to Apple, you can burn Music Store tracks onto audio CDs only from within iTunes. However, the latest versions of Charismac's Discribe and Roxio's Toast can also create audio CDs from Apple's protected AAC files—as long as you burn the CDs on a Mac authorized to play the files. When you use iTunes to burn live albums or albums with songs that blend seamlessly into one another—such as Pink Floyd's *Dark Side of the Moon*, which we used for testing—there's a slight gap between tracks that ruins the flow. Discribe and Toast, however, let you create audio CDs without the gaps you get from iTunes.

The Competition

Mac users have other ways to buy music online, but there are some important differences with the Music Store. The one music vendor that supports the Mac,



"The success of the iTunes Music Store shows that the record industry has been blowing it for years."

Jonathan Potter, executive director,
Digital Media Associates

your statement will show an aggregate charge for everything you've bought in a specific period (say, 12 hours)—you won't have to worry about 20 charges for \$0.99 each.

Know Your Rights Unlike the MP3 format, AAC allows true digital rights management. The AAC-encoded music you buy from the iTunes Music Store is tied to your Apple ID and password. You can play your

for the remote (which is included with the 15GB and 30GB models), next to the headphone jack.

Docks and Ports

The iPod features some big connectivity changes. Apple has eliminated the six-pin FireWire port from the iPod's top edge and replaced it with a broad horizontal port on the other end. You'll now need a proprietary cable (included with every iPod) to connect the iPod to a Mac's FireWire 400 port. So if you're out and about and need to use your iPod as a FireWire drive, you'll be out of luck unless you brought the right cable with you. (The flip-open port cover of the previous iPods is also gone, replaced by an unattached plastic cover that you're almost guaranteed to lose.)

The new iPod port serves two functions: first, to offer USB 2.0 support to Windows users (who will have to spend \$20 on an iPod-to-USB 2.0 cable); and more importantly, to work with the new iPod dock—a rectangular, white stand into which you set the device. The dock (which is included with the 15GB and 30GB models) can connect to your Mac via the iPod-to-FireWire cable. However, it's much more interesting when used as an add-on to a home stereo sys-

tem: the back of the dock includes a mini-jack for a line-out audio source that's perfect for running into powered speakers or an amplifier.

The Software

Powering these iPods is the new iPod 2.0 software, which adds several features not available on previous iPod models. Yes, there are games—three to be exact. If you've ever wanted to play Solitaire on your iPod, you've got your wish. There's also support for as many as 1,000 text notes, each of which can be as large as 4K (that's roughly 700 words) and include hyperlinks to other notes or to the contents of your music library. It'll be a great feature for self-guided audio tours in museums, but it's also got plenty of potential for general use. You can even use your iPod as an alarm clock, setting it to wake up and play a playlist at a particular time.

But the most impressive feature in the new software is the On-The-Go playlist, which allows you to create new playlists while you're out and about with your iPod. Simply select the song you want to add and hold the iPod's center button for two seconds. (It's stunning that Apple didn't add such an obvious feature earlier.) However, the tool isn't perfect. For

RATING: ★★★★★

PROS: Redesigned buttons are easier to use; better remote-control connection; create playlists while away from your Mac.

CONS: Buttons too easy to press accidentally; uses proprietary FireWire cable.

PRICE: 10GB model, \$299 (does not include dock, remote, or carrying case); 15GB model, \$399; 30GB model, \$499

OS COMPATIBILITY: Mac OS X

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

example, you can't sync your On-The-Go playlist back to iTunes if you create one you like; it's automatically erased when you attach your iPod to a Mac. And while you're playing an On-The-Go playlist, any tracks you add to it don't show up until you restart the playlist.

Macworld's Buying Advice

On the whole, the new iPods are a solid improvement. The smaller size and new button layout make them more refined; the updated software makes them even easier to use. But while the dock is a nice addition to the iPod suite (as is USB 2.0 support for Windows users), Apple's decision to use a nonstandard connector is unfortunate.—JASON SNELL

EMusic, doesn't sell songs or albums. Instead, it charges you a subscription fee of about \$10 a month. EMusic lets you download as many MP3 files as you want and share them with as many machines and people as you want—and because of that, many labels are reluctant to allow their songs on the service, making the selection less than ideal.

The other form of competition comes from applications such as LimeWire and Acquisition, which connect to a network of individuals sharing files. Music is posted and swapped without permission, in violation of copyright laws. Even if the legal aspect doesn't scare you (the Recording Industry Association of America recently sued four college students for copyright infringement after they'd shared MP3 files on the Web), it isn't easy to find this music. Naming isn't standardized, you can't preview songs or know the music's encoding quality, individuals sharing music leave the network without warning, and you often have to wait in long queues just to download a single track. Apple is banking on the fact that the time you'll save and headaches you'll avoid by using the Music Store will be worth \$0.99 per song.

The Last Word

With its iTunes Music Store, Apple has shown a willingness to take chances by going in new directions or—as is often the case—going a giant step beyond what others have tried. What makes the Music Store so interesting is not that Apple is selling music (although that *is* a fascinating move for a computer company), but that it has entered a lukewarm area of digital technology that has in the past failed to convince record executives and capture the hearts and wallets of consumers.

If the 2 million songs sold by the Music Store in its first few weeks are any indication, Apple's selling model and the AAC file format sound sweeter to consumers' ears than EMusic or illicit file sharing. And when it's available to Windows users, later this year (along with a version of iTunes for Windows), the iTunes Music Store may soon be playing to a sold-out house. □

Macworld Senior Associate Editor JONATHAN SEFF covers multimedia topics and has purchased dozens of songs from the iTunes Music Store.



All
Roads

Lead to



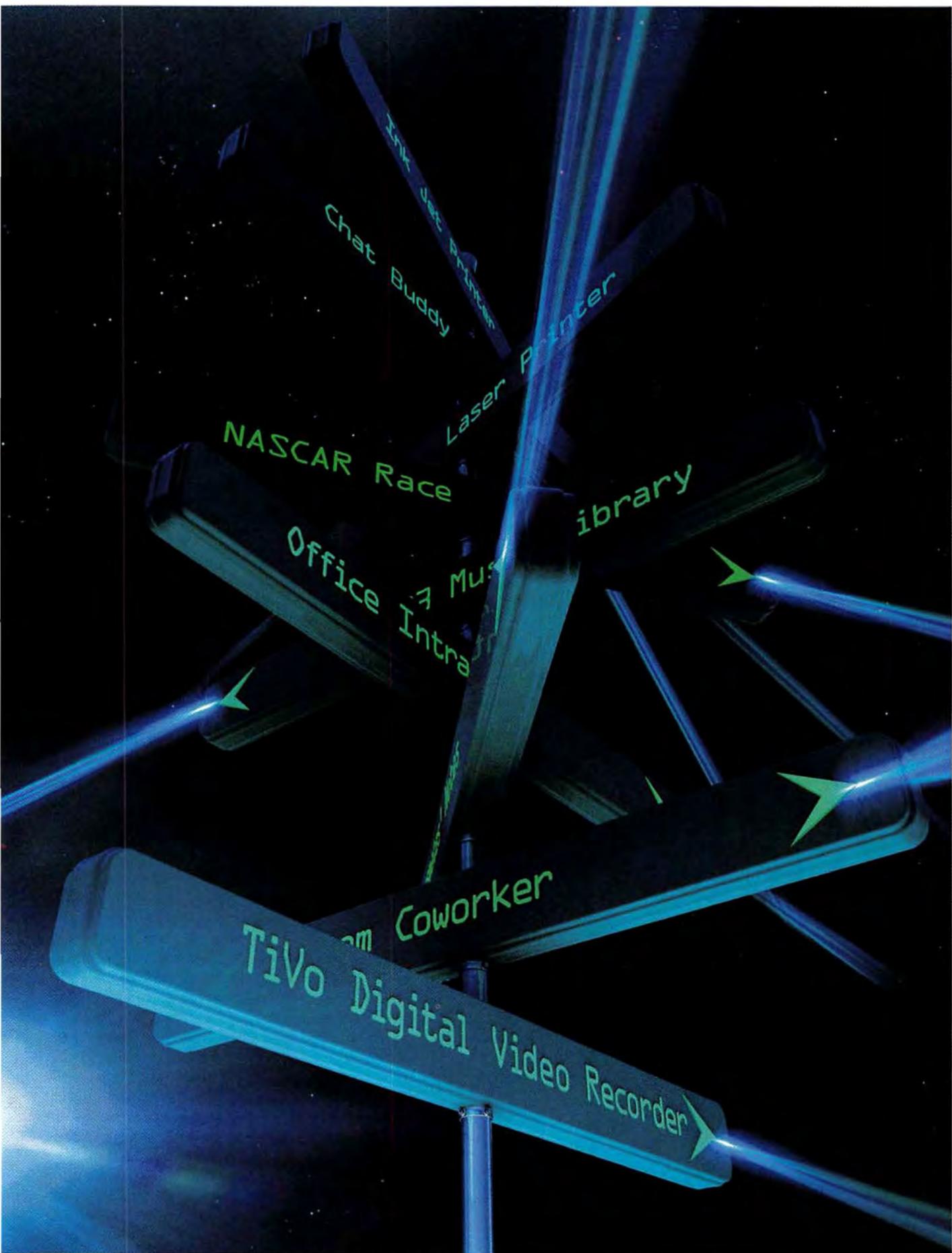
RENDEZVOUS

OS X's Networking Technology and New Mac Products Make Connections Effortless

Your flight from the East Coast was delayed—you dash into your company's West Coast office with only a few minutes before the big meeting. Undaunted, you pop open your PowerBook and hook up to the local AirPort network. You calmly choose Print and notice that the printer on the table next to you is selected in the Print dialog box. With a minute to spare, you open iChat, find the names of the people you're supposed to meet, and let them know that you're waiting in the conference room.

The report you wrote is a hit: a colleague wants to use one of your graphs in her own presentation. Still sitting at the table, you

BY SHELLY BRISBIN





With Rendezvous, there are no network configurations to fool with.

connect to her computer via document-collaboration software and paste your graph directly into her document.

All these feats are made possible by Rendezvous—the networking technology introduced with Mac OS X 10.2—which makes finding resources on a network incredibly easy. With Rendezvous, there are no network configurations to fool with (or computer-support wizards to beg for help). Instead, your Mac and Rendezvous-savvy hardware and software do the communicating for you, and you reap the benefits.

In this article, we'll reveal how Rendezvous works, and we'll check out new products that take advantage of Rendezvous's abilities.

Simplicity versus Compatibility

Many Mac users have become accustomed to ignoring the nuts and bolts of networking: they plug in the Ethernet cables, and the Macs work. But it's taken a lot of effort behind the scenes to make that possible.

Apple-Only Ease In the past, we depended on AppleTalk. AppleTalk setup requires no special configuration—you plug in devices, and they find one another over the network. It provided Mac users and administrators with instant and continuous access to networked services, such as file sharing. From an AppleTalk browser (the old Chooser, for example), you could view a server or network printer by name and connect to it in one step.

Cross-Platform Needs But AppleTalk is a Mac-only technology in a cross-platform world. These days, most network hardware, PCs, and printers—as well as other devices—don't support AppleTalk. They use TCP/IP, the language of the Internet. Universal TCP/IP support provides both seamless communication with the Internet and a single networking medium that all computer makers, software vendors, and users can agree on.

As a result of this, Apple—while continuing to support AppleTalk in OS X—has started to focus on

TCP/IP. This has made Macs more compatible with other computers, but it's also been a step away from Apple's goal of providing easy-to-use technologies. Indeed, trouble with printer configuration has vexed many an OS X user, and even Mac-only networks require some level of administrative configuration to allow Macs to obtain IP addresses.

Best of Both Worlds Enter Rendezvous, which makes it possible to create an instantly usable TCP/IP network—or to find and use resources on an existing Mac network—all without knowing or typing an IP address or URL. Rendezvous is based on an industry standard called *zeroconf*, developed by the Zeroconf Working Group of the IETF (Internet Engineering Task Force).

A slew of printers—including those from Brother, Canon, and Hewlett-Packard—quickly joined the ranks of Rendezvous-enabled products, many of which are shipping now. Some others are Apple's new iTunes 4, Aspyr's NASCAR Racing 2002 Season, and the World Book Encyclopedia 2003, from World Book (bundled with all consumer Macs). Shareware authors have also been experimenting with Rendezvous-based tools that facilitate document collaboration, remote music playback and file sharing, and more (see "The Fast Lane: Rendezvous Products Arrive").

The Trouble with IP Addresses

To communicate via a TCP/IP network, either locally or over the Internet, every device must have an IP address. Your Mac gets its address from a server or uses an address that is preassigned by an ISP or network administrator. Either way, a router or server on your network must guarantee that all devices have addresses that are accessible to all the others.

That makes it challenging to create a temporary network (so you can copy photos from your PowerBook to your brother's, or hook up a few friends' computers for an afternoon session of Warcraft III, for example), or to build one when there is no router or network administrator who can set up IP addresses or servers.

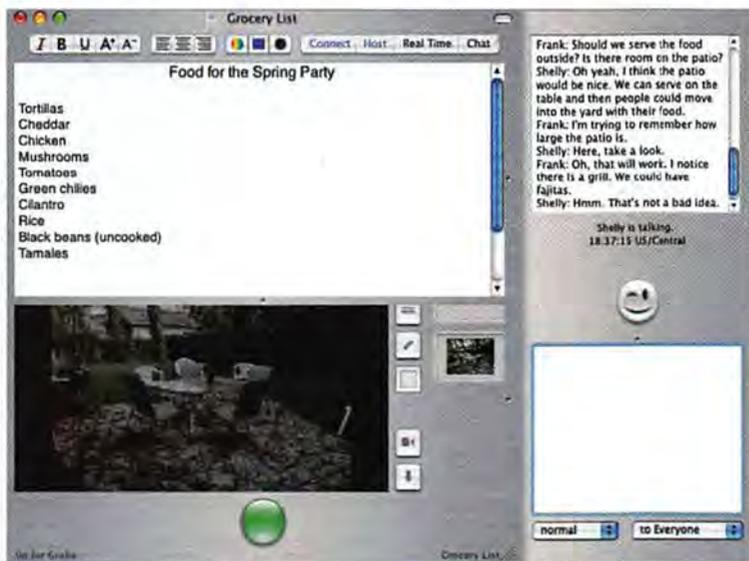
It also creates difficulties for members trying to find resources, unless they know where and how to find others' IP addresses. Say your colleague in marketing published a Web-based newsletter on his computer—you can't access it unless you know his Mac's IP address.

Problems also arise when you want to chat with a friend whose instant-messenger nickname you don't know, or when you need to use a local file server or printer. For one thing, your networked Macs often get a different IP address from a DHCP (Dynamic Host Configuration Protocol) server each time you restart them. So the bookmark you saved for the local MP3 server may not work the next time you try to use it.

The Rendezvous Way Instead of requiring that you know IP addresses, Rendezvous-enabled applications provide a real-time, name-based view of current net-

Work Together

With Math Game House Software's iStorm, the whole group can collaborate on a document. When you make a change to a document, everyone sees it instantly over the network. Thanks to Rendezvous, others in the group can use integrated chat to put in their two cents without any hassles.



work resources. You can use Apple's Rendezvous-enabled browser, Safari, to look at files on Joe's Mac over the network, and you can use iChat to talk with Joe, whether or not you know his address. Since Rendezvous-enabled applications find you, not vice versa, you may discover hidden treasures on your network—such as the guy down the hall in your dorm who's hosting a network game.

Rendezvous also makes new kinds of sharing possible because it simplifies direct communication between networked computers, especially in environments where ad hoc networks are created, used, and then dismantled. If, for example, you meet your law-school study group at a coffee shop, you can create an AirPort network and, with Rendezvous, quickly set up file sharing or a document-collaboration session with a program such as Math Game House Software's \$20 iStorm 2 (see "Work Together"). And you don't need to set up TCP/IP or exchange IP addresses. Shared resources on the new network appear in each person's Rendezvous-enabled applications and can be accessed with a click.

Later, when you go to the law library to study, you can connect to the library's AirPort network and print your group's document on a Rendezvous-enabled

printer without ever opening OS X's Print Center. Finally, when it's time to relax at home, you can use iTunes to find your roommate's MP3 server and listen to some music over the network. (To understand how this works, see "The Method behind the Magic.")

Rendezvous in the Real World

If you have OS X 10.2 or later installed on two or more Macs, you can start using Rendezvous right now. Just fire up iChat on two machines that are already connected by a network (Ethernet or AirPort).

Chatting and Browsing Once Rendezvous is enabled on each Mac (iChat: Log Into Rendezvous), you'll see members of your network in iChat's Rendezvous window. You don't need to establish an instant-messenger account to chat locally, and you don't need to enter account names for your coworkers. From here, you can exchange messages and files with anyone who logs in to the network.

Apple's Safari Web browser provides another way to use Rendezvous instantly. Using Rendezvous (Preferences: Bookmarks: Include Rendezvous), you can view locally hosted Web sites from the Bookmark bar or Bookmark menu. Any Mac with Personal Web Sharing



THE Method BEHIND THE Magic

Rendezvous consists of three components: *addressing*, *naming*, and *service discovery*. These components work together so you can create or join a network (addressing); easily identify network resources (naming); and quickly locate printers, file servers, Web sites, and more (service discovery).

Addressing Your computer usually acquires a TCP/IP address in one of two ways: it gets a new address from a server whenever you connect to the Internet or a local network, or it is preassigned a permanent address by a system administrator or ISP. Either way, an outside authority hands out addresses so all devices on the network have a unique, valid address.

However, if you don't have such an authority—if you're creating a temporary AirPort network in your company conference room, for example—Macs, and most modern

computers, use what's called *self-assigned link-local addressing*, agreeing with others on addresses that fall within the same *subnet*, or range, of local addresses.

If a Mac finds another computer when it joins a local network, but finds no router to manage the network by providing IP addresses, the new member of the network chooses an IP address that can communicate directly with the first machine—one that's in its own subnet. In this way, all machines on a routerless network can talk among themselves, even if they don't have a link to the Internet.

Rendezvous builds on self-assigned link-local addressing to allow anyone to join the network without having to configure TCP/IP settings. Macs have supported self-assigned link-local addressing since OS 8.5; the current (IPv4) and future (IPv6) versions of the TCP/IP standard also support it.

Naming While Rendezvous-style addressing is not new, naming is closer to the heart of what makes Rendezvous cool. The Internet structure that allows you to type in www.example.com, rather than an IP address like 192.168.0.4, is called DNS (domain name system). DNS servers around the Internet store and pass along matched sets of names and IP addresses. Your ISP or network administrator maintains a DNS server that provides this information to your Mac. But if your local DNS server doesn't have a list of names corresponding to every computer in your office (many don't, because setting one up is time-consuming and considered unnecessary), you won't be able to call up those computers by name in a Web browser. Likewise, a temporary network you create in your kitchen has no access to DNS.

Rendezvous naming uses a method called *multicast DNS* to query active computers on the network and retrieve their IP addresses and their local host names. You enter the name into the Rendezvous Name field in the Sharing pane of System Preferences. Within the LAN, each Mac is known by its Ren-

dezvous name and the *.local* suffix. The URL <http://patsy.local> corresponds to the local Mac named Patsy.

Service Discovery In networking parlance, a *service* is a resource such as chat, an FTP or Web server, or access to a printer. A Rendezvous-enabled application uses service discovery to query the network for services that it understands. It then lists all that are available. Safari finds all available Web sites and places them on the Bookmark bar; iChat seeks out everyone who is logged in to a Rendezvous-based chat, and so on.

Service discovery allows Rendezvous-capable computers to locate services on a network. For example, in iTunes 4 you can see all MP3 servers on the network. In Safari, enabling Rendezvous adds the names of local Web servers to the Bookmark bar. The menu is dynamic, which means that servers enter and leave it in real time.

iChat provides another illustration: When you're logged in to Rendezvous in iChat, your name appears in the Rendezvous window of all other iChat users on the network, and you can see who else is online.

turned on will appear by name (Patsy's Web site, for example) on the bar or menu in Safari. Even if a site is publicly available, Rendezvous gives you a local connection to it. As users enter and leave the network, Rendezvous updates Safari's bookmarks. If you were using a browser that didn't support Rendezvous, such as Internet Explorer, you'd need to know and enter the local site's URL, including that machine's IP address.

Chat and local Web browsing may seem like relatively limited ways to communicate, but Rendezvous may just allow these business tools to be used more frequently. Chat, for example, lets people hold conversations or quickly exchange files while getting other work done, and it provides a record of the conversation should they need it. Because Rendezvous updates the iChat window dynamically, you'll always know who is available and who has gone offline. Lastly, organizations that restrict access to instant-messenger networks can still allow Rendezvous-enabled local chat, because it doesn't require that users have access to the Internet.

Local Rendezvous Web sites can be used as business tools, too. Build a company intranet, or use locally hosted pages as a prototype for your company's public site. Rendezvous's way of discovering other devices on the network, multicast DNS (domain name system), makes it possible to deploy local Web sites even if a DNS server isn't present, or if a system administrator doesn't want to add local Macs to the DNS server. Though a PC, and a Mac running a version of Mac OS earlier than OS X 10.2, can host local Web sites, Rendezvous-capable browsers will show you only sites that are hosted on Rendezvous-using Macs.

Printing Made Easy Printing often bedevils network managers, especially in cross-platform environments. AppleTalk made it easy for Mac users to locate and use

a networked printer, but TCP/IP and the prevalence of Windows-based network printing have made printing a challenge for many OS X users. Rendezvous attempts to bring AppleTalk simplicity back to the Mac, regardless of whether a PC print server hosts the printer.

A Rendezvous-enabled printer can be connected to a TCP/IP network or directly to a Mac; it broadcasts its name and configuration information via Rendezvous naming and service discovery. Printer makers, including Xerox, Epson, Canon, and Lexmark, have announced their intention to use Rendezvous in their printers. Brother's \$500 HL-5070N laser printer and Hewlett-Packard printers that include or support the company's JetDirect Ethernet and wireless print servers now all support Rendezvous. You can also connect a USB printer to Apple's AirPort Extreme Base Station, to provide

Rendezvous printing to wireless Macs. The Base Station acts as a print server for the network.

These printers don't require network configuration. Even if a network administrator sets up PC-based printer access and queues, Rendezvous-capable Macs on the network simply discover and use the printer. With a Rendezvous printer on the network, you just select Print. You don't need to use Print Center to add or configure a Rendezvous printer, though you can use it to select one if multiple printers are available.

Rendezvous also provides easy access to printers with Web-based configuration, such as Brother's HL-5070N. The printer appears as a Rendezvous Web site in Safari's Rendezvous Bookmark bar. From the Web interface, you can manage the print queue and the printer.

Sharing Files Next to printing, file sharing is probably the most common activity on a local network. After



Rendezvous brings AppleTalk simplicity back to the Mac.

PUT RENDEZVOUS TO **Work**

You don't need to buy something new to enjoy the benefits of Rendezvous. It's built into OS X 10.2 and supported by applications you already have. (That includes the new iTunes 4. See "Behind the Music," page 56, for details.) Here are some ways you can use Rendezvous at home or at work, and some tips for getting the most from your Rendezvous apps.

Easy File Exchange Rendezvous-based chat provides a quick way for you to do more than chat. It's also a great way to exchange files with col-

leagues. This feature is particularly useful when you've created a temporary wireless network. To enable Rendezvous chat, go to the Accounts pane (iChat: Preferences: Accounts) and select Enable Local Network Messaging. Once a network has been set up via AirPort, log in to iChat, open a chat session with someone on the network, and choose Send A File (Buddies: Send A File).

Start an Intranet Even small organizations can benefit from an intranet—a local Web site where

employees can read company news, download forms, apply for vacation time, or read the company newsletter.

Setting up your intranet is as easy as enabling Personal Web Sharing on a designated Mac and building Web pages. Using a Rendezvous-enabled browser, anyone on your network—even the new guy who hasn't read the employee handbook, or the PowerBook-toting field rep—can find the intranet server. To reach the intranet, open Safari and enable Rendezvous (Preferences: Book-

marks) by selecting Include Rendezvous in the Bookmarks bar or Bookmarks menu. Then open your intranet site from the Rendezvous bookmarks menu.

Note that when you select the menu for the first time, you may not see local Web sites. Click once more to activate the menu.

Shared Printing Even if your printer doesn't directly support Rendezvous, you can use OS X Printer Sharing to simplify printer access for others on the network. From a Mac

all, most people need to exchange files with colleagues or retrieve them from a central server.

Right now, users of FTP servers will gain the greatest benefit from Rendezvous file sharing. That's because FTP clients don't display local file servers without Rendezvous. A number of shareware programs, including Xnet's \$25 Captain FTP 2.2.1 and Panic's \$25 Transmit 2, provide Rendezvous access to FTP servers on a local network—useful if you use FTP servers for local file storage. Xnet also sells a Rendezvous-like file server (based on zeroconf) for Windows, called Crocodile.

Play Date Multiuser gaming has been around for a while, but most of these applications connect over the Internet and require that you know the IP addresses of opponents. Rendezvous-enabled gaming works on a local network and lets competitors see each other by name.

Aspyr's \$39 NASCAR Racing 2002 Season is the first Rendezvous-enabled game. The company says that as many as 43 players can compete locally on NASCAR tracks. On a Rendezvous network, you can join a local race, and see and chat with other racers.

New Frontiers

If the crop of commercial and shareware collaboration and network-sharing tools is any indication, Rendezvous has fueled the imaginations of Mac developers. Database heavyweight Sybase has lent Rendezvous a cross-platform boost by adding support for OS X to its enterprise-level products. Sybase's Adaptive Server Enterprise 12.5 for Mac OS X runs on Apple's Xserve and uses Rendezvous to discover databases automatically. Chaparral employs Rendezvous to manage its RIO RAID Storage Controller, another product found in corporate back offices, where Apple has often been shut out.

Mixed Media On the home front, TiVo, maker of the popular digital video recorders, plans to use Rendezvous to allow TiVos to discover networked Macs. You'll be able to play your Mac's sound files and display its photos on a TV.



with a USB printer connected, enable Printer Sharing by opening the Sharing pane in System Preferences, and choose Printer Sharing.

Users of any Rendezvous-enabled Mac on the network can now access the printer by selecting it in the Rendezvous menu of the Print dialog box. As a bonus, all network printers appear in the Rendezvous menu, too. To make more printers available on the network, open Print Center, select Add Printer, and locate the printers you would like to share.

Easy URL Access If you need to connect to a network service but don't have a Rendezvous-capable application, you must enter local URLs to reach your server. You can simplify URL entry by leaving off the `.local` suffix. In the System Preferences Network pane, select the active network port and add `.local` in the Search Domain field. In a Web browser, you would then type `http://example` to see the Web site hosted on a Mac whose Rendezvous name was Example.



Apple's coolest and most visible implementation of Rendezvous can be found in iTunes 4, which allows you to discover and connect to a music server from a remote Mac and play MP3 files from the remote machine (see "Play Together"). You can share individual playlists or your entire music library with as many as five networked Macs, and iTunes lets you password-protect each iTunes server.

A few shareware authors have tried to create similar applications that use Rendezvous to locate iTunes libraries and deliver music over a network. Slim Devices' \$229 SliMP3 MP3 player provides a Web-based interface to both the player and a local iTunes server. You can also use the free SliMP3 software alone to connect to the Web-based interface from Safari's Rendezvous menu.

Other Rendezvous information-sharing applications promise support for document sharing and collaboration. Math Game House's iStorm lets many Rendezvous users work on a text document simultaneously. And the iChalk 2.02 module, included with iStorm and available separately (\$10), is a Rendezvous-enabled color chalkboard. The \$68 World Book Encyclopedia 2003 brings Rendezvous to the educational realm. With the encyclopedia running on multiple computers—in a computer lab, for example—students can add notes to entries in their copies of the encyclopedia and share those notes with others. When a group project is complete, one person can gather all of the notes and create a final report, using World Book's tools.

Just Browsing The majority of Rendezvous-enabled tools focus on a particular network application, but the increasing number of Rendezvous browsers will let you see a complete view of services available on your network. Most give you a list of local services, organized by protocol.

Most of these freeware and shareware tools are still in development. You can use them to locate a Rendezvous service, but

Play Together
Your music library just got a lot bigger. Using Rendezvous, iTunes 4 automatically shows you all MP3 servers on the network. As many as five Macs can connect to another Mac and play songs stored on it.



The Fast Lane: Rendezvous Products Arrive

COMPANY	PRODUCT	PRICE	STATUS	CONTACT	COMMENTS
BUSINESS SOFTWARE					
Apple	Shake 3	\$4,950	shipping in June	800/692-7753, www.apple.com	This professional video software uses Rendezvous to locate rendering stations.
Sybase	Adaptive Server Enterprise 12.5 for Mac OS X	varies	shipping	925/236-5000, www.sybase.com/ase	Relational database-management software.
DOCUMENT COLLABORATION					
Math Game House Software	iChalk 2.02	\$10 ^A	shipping	www.mathgamehouse.com	Lets you collaborate with others on a shared chalkboard.
Math Game House Software	iStorm 2	\$20 ^B	shipping	www.mathgamehouse.com	Document and chalkboard sharing.
TheCodingMonkeys	Hydra 1.0	free	shipping	http://hydra.globalse.org/faq.html	Lets you collaborate on documents in real time; has coding tools.
World Book	World Book Encyclopedia 2003 Mac OS X Jaguar Edition	\$68 ^C	shipping	866/866-5200, www.worldbook.com	Lets you attach notes to encyclopedia entries and share them with other World Book users.
FUN AND GAMES					
Apple	iTunes 4	free	shipping	800/692-7753, www.apple.com	Allows users to play music stored on another Mac.
Aspyr	NASCAR Racing 2002 Season ^D	\$39	shipping	888/212-7797, www.aspyr.com	This auto-racing game allows multiple local users to compete.
Blackhole Media	Earphoria 0.1	free	beta	www.blackholemedia.com/beta/	Lets you share iTunes music libraries.
Malia Software	MP3 Sushi	free	beta	www.maliasoft.com/mp3sushi/	Serves iTunes libraries as individual tracks or as a radio stream.
Slim Devices	SlimMP3 Network Music Player	\$229	shipping	www.slimdevices.com	Streams music from a Mac over a network; Web interface.
Steven Kappes	Project Gridlock 1.1	free	beta	http://homepage.mac.com/seppak/ProjectGridlock/	Network chess game.
TiVo	TiVo Desktop Software 1.0	free	shipping	877/289-8486, www.apple.com/downloads	Lets you access music and photographs stored on your Mac from your TV, using a TiVo Series 2 Digital Video Recorder.
NETWORK SOFTWARE					
Apple	Safari 1.0	free	beta	800/692-7753, www.apple.com	This Web browser shows Rendezvous sites as bookmarks.
Christian Hedin	CHRendezvous 0.1	free	beta	http://istari.dyndns.org/~ciryon/	Allows you to find Rendezvous services by type.
Mozilla	Camino 0.7	free	beta	www.mozilla.org/projects/camino/	This Web browser can browse both HTTP and FTP servers.
Panic	Transmit 2	\$25	shipping	www.panic.com/transmit/	This FTP client discovers local servers.
Steve Dekorte	iShare	free ^E	beta	www.dekorte.com/Software/OSX/iShare/	Provides read-only access to selected Macs' file-sharing resources.
TangentOrg	RenBrowser 0.1	free	beta	http://software.tangent.org	Allows you to browse Rendezvous networks.
Toxic Software	iRoster 1.0	free	beta	512/517-3736, http://toxicsoftware.com	Lists Rendezvous services in a Dock menu.
Xnet	Captain FTP 2.2.1	\$25 ^A	shipping	http://captainftp.xdsnet.de	This FTP client discovers local servers.
PRINTERS					
Brother	Brother HL-5070N	\$500	shipping	908/704-1700, www.brother.com	Monochrome laser printer for small workgroup.
Canon	ImagePrograf W2200	\$5,133	shipping	800/652-2666, www.usa.canon.com	Large-format color printer.
Canon	ImagePrograf W7200	\$2,852	shipping	800/652-2666, www.usa.canon.com	Large-format color printer.
Canon	ImagePrograf W7250	\$1,954	shipping	800/652-2666, www.usa.canon.com	Large-format color printer.
Hewlett-Packard	JetDirect 380x 802.11b Wireless Print Server ^F	\$325	shipping	800/752-0900, www.hp.com	External print server for HP printers.
Hewlett-Packard	JetDirect Internal 615n Print Server ^F	\$350	shipping	800/752-0900, www.hp.com	Internal print server card for HP printers.
Hewlett-Packard	JetDirect External 310x Print Server	\$250	shipping	800/752-0900, www.hp.com	External print server for HP printers.
UTILITIES					
Erik Lagercrantz	ClipboardSharing 1.1.1	free	shipping	www.lagercrantz.ath.cx/software	Lets you share a clipboard between several Macs.
Freshly Squeezed Software	Bookie 1.1	\$8 ^A	shipping	http://freshlysqueezedsoftware.com/products/bookie/	Lets you share Web bookmarks with other Rendezvous users.

^A Shareware. ^B Serial number can be used by two people; additional license needed for more than two people. ^C Upgrade from any version bundled with iBooks, iMacs, and eMacs since January 2002, \$40. ^D The \$50 NASCAR Racing 2003 Season should be available by the time you read this. ^E \$10 shareware fee to download files over 3MB. ^F All JetDirect products for PostScript printers will support Rendezvous.

you generally can't yet access the service by selecting the item. The most useful browser so far is Toxic Software's iRoster (still in beta), which shows available Rendezvous services in a Dock menu.

The Last Word

Rendezvous is easy to use and cross-platform, and it has already begun to spawn interesting products. As

AirPort wireless technology makes temporary networks more common, and as OS X 10.2 finds its way onto more Macs, Rendezvous will help prove Apple's claim that the Mac is the best computer for the network—and the easiest one to use. □

SHELLY BRISBIN is the author of *Build Your Own Wi-Fi Network* (McGraw-Hill/Osborne Media, 2002).

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Dear Family, our diary includes recent trips to the country for our annual reunions. It was enjoyable to see everybody there and hear of their news.

Source today in Washington, D.C. indicates point to a bright future for increased sales in the Southwest.

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MAKE A WEBSITE



Put Weblogs to Work

BY SCOT HACKER

LOW-COST TOOLS LET YOU PUBLISH PROFESSIONAL AND PERSONAL SITES INSTANTLY

With no paper, printing, or distribution costs, the Internet has eliminated many of the financial barriers to publishing. Whether you're a CEO, a scientist, or simply someone with an opinion, the Web offers you unprecedented access to an audience, as well as the ability to provide up-to-the-minute news. That's assuming, of course, that you have the time and technical skills to constantly update and maintain a growing Web site and online community.

But now even these barriers are disappearing, thanks to the rising popularity of Weblog systems, publishing tools that let you post daily—or even hourly—Web content without writing a lick of HTML.

Weblogs (often referred to as *blogs*) are easy to set up and maintain, and best of all, they're affordable. You can start using some Weblog services without spending a dime. And a growing list of professional features—such as support for multiple authors, editing workflows, and custom plug-ins—is even making some Weblog tools viable alternatives to much more complicated and expensive content-management systems.

Today there are dozens of Weblog-publishing systems, and each offers a different combination of features and tools. To help you find the system that best matches your needs, we examined some important factors involved in buying decisions, and then we applied them to seven of the top Weblog systems: Pyra Labs' Blogger Pro, the open-source GeekLog 1.3.7, Lifli Software's iBlog 1.2.5, the open-source LiveJournal, Six Apart's Movable Type 2.63, pMachine's pMachine Pro 2.2.1, and UserLand Software's Radio 8.0 (see "Seven Weblog Packages Compared"). With the exception of GeekLog (which is completely free) and Radio (which costs \$40 per year), all of these tools are available in free and paid versions. Since the extra expense gets you extra features, we used the paid versions in our tests. Of course, this list doesn't

represent the full range of blogging systems available; however, our testing criteria will apply to any Weblog system you evaluate.

How Weblogs Work

There are generally two components to a Weblog: the software that runs on a Web server (or in some cases, on your local machine) and generates a Weblog's pages, and the posting tool that sends content to the software. Most services let you post content through a Web form, so you can update your site from any computer with Internet access. But since Web forms are less than ideal for editing text, some developers have made the process more Mac-friendly by creating desktop software (for our review of six of them, see "Posting Tools").

The key to a Weblog's success is automation. Once the publishing system is configured, you just type content into its posting tool and click on a button. The system then inserts the new content into the appropriate template and generates all relevant pages, including home pages, individual story pages, and archives. Some systems will even notify readers and other sites that your content has been updated. All of this happens behind the scenes, leaving you free to focus on producing content, rather than honing technical skills.

But automation has a price. By using a Weblog tool to publish your site, you give up some of the freedom that comes with building Web sites by hand. For example, you may lose the ability to handpick the lead item on your site—most Weblogs automatically display the most recent post first—or to have one page look or behave differently from the rest.

Choosing a Weblog Package

Before settling on a Weblog system, think about the features your site will need. Since it's not always easy to convert data from one system to another, you'll want to start out with a system that

A Blog for Every Occasion
AlwaysOn (left), a Weblog for business insiders, uses pMachine to follow industry news.

The University of California at Berkeley's Graduate School of Journalism uses Movable Type as a content-management system to drive a student news publication (middle). Photos and daily accounts give personal Weblogs such as Birdhouse (right) a more intimate tone.



matches your requirements. Here are some of the most important factors to weigh:

Hosting a Weblog

The first decision you'll have to make is where you want to set up your Weblog. There are generally three options: have a Weblog service host your site, publish files to your personal Web space, or set up Weblog software on a server run by you or your ISP. Your technical skills and available time will help determine which of these options you choose.

Host with a Weblog Service If you're in a hurry to get up and running and don't want the hassle of configuring software, you may want to let someone else host your Weblog. In this scenario, the Weblog service runs all the necessary software on its own server and hosts the files that make up your site.

Of the services we looked at, Blogger, LiveJournal, pMachine, and Radio all offer hosting services. Fees vary for different packages—only Blogger and LiveJournal offer a free hosting option. (At press time, Six Apart announced its own hosting service, TypePad, which should be in beta by the time you read this.)

When run as hosted services, Blogger, LiveJournal, and pMachine require virtually no installation—just sign up for an account and go. Getting started with Radio is almost as easy; you'll just need to install a small application that runs on your desktop. Radio and pMachine also include dozens of preferences and options that you can experiment with after installation.

One potential drawback to using hosting services such as the ones at Blogger, LiveJournal, and Radio is that you can't attach a preexisting domain name to your Weblog. Instead, you'll be assigned a *subdomain* URL, such as *yourname.blogspot.com*. pMachine is the exception here—the service will host a Weblog on the domain of your choice. (Of course, you'll pay a little more for this luxury.) Otherwise, if you want your Weblog to live at a specific domain, you'll need to upload it to your own Web space using one of the following two options.

Publish to Your Web Space If you already have Web space through your ISP or a service such as Apple's .Mac, you may prefer to post directly to it instead of having

your Weblog hosted on a separate server. In this case, you should choose a system that can automatically transfer your Weblog files via FTP or another method.

Blogger, iBlog, and Radio all offer this feature. But whereas Blogger and Radio send your content to the server, which then processes it and uploads it to the site of your choosing, iBlog takes a unique and more Mac-centric approach: it combines the posting and page-generation functions of a conventional Weblog service into one OS X desktop application. This means that it doesn't require any server software—iBlog outputs finished pages to any Web-accessible file server via .Mac, FTP, WebDAV, or AFP.

Because it's an OS X application, iBlog offers a level of control over your site—such as easy template editing—that Web forms simply can't match. On the downside, iBlog lacks some important Weblog features that rely on a server-side component, such as an integrated search function, comments, traffic analysis, and reader registration. (However, you may be able to find third-party solutions to some of these limitations.)

Set Up Your Own Server If you need total control over every aspect of your site—for example, so you can install plug-ins or add a customized search engine or commenting system—you'll need to install and run Weblog software on your or your ISP's Web server.

If you use an ISP's server, you'll need command-line access to install and configure your scripts. If you want to run your own server, OS X is more than sufficient—as long as your cable or DSL provider allows you to run a server, you have a static IP address, and you don't shut off the computer.

GeekLog and pMachine run smoothly on any Unix-based server running PHP and MySQL. (For instructions on setting this up on your OS X machine, see "Serve It Up," November 2002.) Of the two, pMachine is by far the easiest to set up on a server: you enter your database's root user and password in the configuration file, open the setup script in a browser, and step through the wizard. GeekLog lacks pMachine's friendly setup wizard and suffers from less-than-stellar documentation. If you decide you don't want to set this up on your own, you may be able to find entrepreneurs willing to host GeekLog sites from their servers.



To get started with Movable Type, you or your system administrator will need to install its set of Perl scripts on a server with CGI access. You may also need to install additional Perl modules, depending on what's already present on the server. (Movable Type comes with a script that inspects your system and tells you which modules you're missing.) Movable Type is the most labor-intensive of these systems to install, but its documentation is more helpful than GeekLog's. An experienced system administrator can generally install Movable Type in 30 minutes or less, or for \$40, you can hire someone from Movable Type to do it for you.

(While you *can* download LiveJournal's source code and host it on your own server, we don't recommend it. Sharing a server with thousands of interconnected users is half the point of using LiveJournal.)

Allowing Multiple Authors

If you're not going to be the only person providing content to your Weblog, you'll need to consider how much access you want other authors to have. Will everyone

publish freely, for a truly collaborative Weblog? Or will you want a more traditional editing workflow in which one or two members of the group edit and approve contributions before they get published to the Weblog?

Although some people argue that an editorial process runs counter to the whole idea of spontaneous Weblogging, many organizations need some level of control over what gets published and when. To accomplish this, you'll need a system that supports multiple users, allows posts to be made in draft mode for approval later, and lets you assign varying permission levels to team members.

All of the Weblog tools we looked at support collaborative publishing to some degree—with the exception of Radio and iBlog. Instead, UserLand suggests that users upgrade to its \$899 Manila software. Blogger and LiveJournal offer a somewhat basic approach to collaborative publishing. Both let you give multiple users access to your Weblog but lack more fine-tuned controls.

GeekLog, Movable Type, and pMachine let you set fine-grained permission levels for each individual user. For example, you can decide whether a given user can change a draft into a live post, edit templates, upload files, or add new members.

All of the systems except GeekLog and Radio also allow you to publish multiple Weblogs from a single installation. This is useful for organizations with multiple departments clamoring for their own Weblogs.

Interacting with Readers

Interactive features such as discussion systems, reader polls, shared calendars, and mailing lists can help transform a Web-based publication into a thriving community of like-minded readers.

Lost in the Threads Letting readers discuss posts is one of the easiest ways to develop a loyal readership.

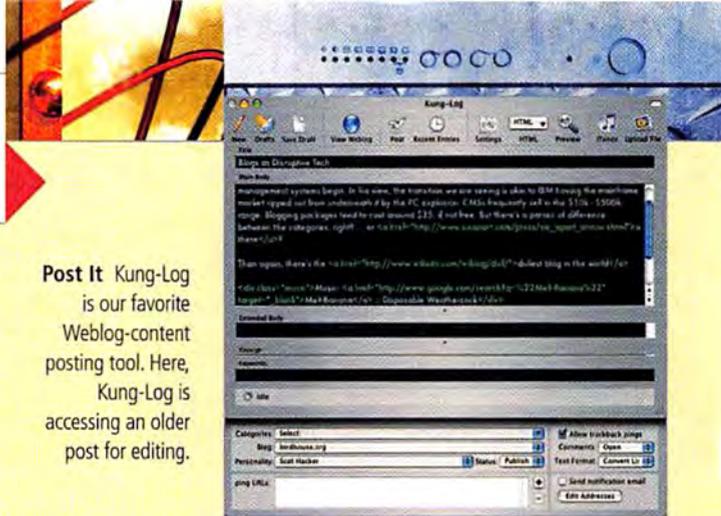
Seven Weblog Packages Compared

PRODUCT	Blogger Pro	GeekLog 1.3.7	iBlog 1.2.5	LiveJournal	Movable Type 2.63	pMachine Pro 2.2.1	Radio 8.0
COMPANY	Pyra Labs	open source	Lifli Software	open source	Six Apart	pMachine	UserLand Software
PRICE	\$50 per year ^A	free	\$19	\$25 per year ^A	personal use, free ^B ; commercial use, \$150	personal use, \$45; commercial use, \$125 ^A	\$40 per year
CONTACT	www.blogger.com	www.geeklog.net	www.lifli.com	www.livejournal.com	www.movabletype.org	www.pmachine.com	http://radio.userland.com
Commenting Systems	N/A ^C	threaded	N/A ^C	threaded	linear	linear	linear
Offers Hosting	●	○	○	●	●	●	●
Extensible via Plug-ins, Scripts	○	●	○	○	●	●	●
Supports Multiple Weblogs	●	○	●	●	●	●	○
Supports Multiple Authors	●	●	○	●	●	●	○
Per-User Permissions	○	●	○	○	●	●	○
Saves Files as Drafts	●	●	○	○	●	●	○
Bookmarks	○ ^D	○	○	○	●	●	○ ^D
Image-Posting Assistance	●	●	●	○	● ^E	●	●
Built-in Traffic Analysis	● ^F	●	○	○	○	●	○
Built-in Search Function	○	●	○	○	●	●	○
Calendar for Posting History	○	○	○	●	●	●	○
E-mail Announcements	●	○	●	○	●	●	○

● = yes; ○ = no. ^ALimited free version available. ^BDonation requested. ^CN/A = not applicable. ^DThird-party options available. ^ERequires Image::Magick module. ^FAvailable only with a hosted BlogSpot[®] Plus account.



POSTING TOOLS



Post It Kung-Log is our favorite Weblog-content posting tool. Here, Kung-Log is accessing an older post for editing.

Posting to your Weblog through a Web form is convenient—especially if you're on the road—but it's not ideal. Web forms make terrible text editors: you can't change the working font, you're limited to a tiny editing window, and you may not have all the usual keyboard shortcuts at your disposal. A much better option is to submit your content with a desktop posting tool, which lets you finesse and preview entries before posting them to a Weblog system.

We looked at six OS X-compatible Weblog-posting tools—Tim Conner's \$6 BlogApp 1.3, iAware's free EspressoBlog 2.2.1, William Coldwell's free iJournal 1.5, Adriaan Tijsseling's free Kung-Log 1.44, Ranchoero Software's \$40 NetNewsWire 1.0.1, and pMachine's \$20 pMpost 1.0. Of the six, we found that Kung-Log offered the most features and flexibility.

While none of the tools we tested will work with every Weblog service, most are compatible with multiple systems. The exceptions are iJournal and pMpost, which are each tied to a single Weblog service (LiveJournal and pMachine, respectively). That's not necessarily a bad thing—tools dedicated to a single system can better take advantage of that system's unique features.

Since you'll likely spend a lot of time with the posting tool, you'll want to make sure it's easy to use. iJournal, Kung-Log, NetNewsWire, and pMpost all excel here, with useful features and polished interfaces. While BlogApp has a fine interface, it lacks too many features to really stand up to the competition. EspressoBlog, on the other hand, suffers from an unintuitive, multipanel layout that makes posting cumbersome.

To speed up the posting process, EspressoBlog, iJournal, Kung-Log, and NetNewsWire all offer keyboard shortcuts for quickly adding HTML to your post—for example, pressing **⌘-B** surrounds the selected text with the `` and `` tags. For more-specialized markup, BlogApp, Kung-Log, NetNewsWire, and pMpost will let you create your own shortcuts for applying custom or less-common tags to your text. Unfortunately, if you want to test your HTML or customized markup before clicking on the submit button, BlogApp and EspressoBlog won't help: neither tool offers a preview function.

If you contribute to multiple Weblogs running on different systems, you'll want to use a tool that can track multiple accounts. While EspressoBlog, iJournal, and pMpost let you post to multiple blogs on the same system, only Kung-Log and NetNewsWire can also keep track of multiple logins on multiple systems, making them ideal if you post to both work and home Weblogs.

EspressoBlog and Kung-Log are the only tools that offer image-upload assistance, which saves you a trip to the Web interface. NetNewsWire also serves double duty as an excellent RSS newsreader—a feature that may justify its extra cost to news junkies. And for more-personal Weblogs, iJournal and Kung-Log can automatically list your currently playing iTunes track as part of each post, to give readers a glimpse of your musical tastes.

Macworld's Buying Advice

Although any Weblog system you choose will somewhat limit your posting-tool options, you still want to make sure that it supports the features you need every day. All of these tools can be test-driven for free. And you can easily switch to another posting tool later without interrupting your system, which isn't the case with Weblog systems.

Adriaan Tijsseling's Kung-Log is our favorite posting application for the Mac, without reservation—the tool is more customizable, supports more features, and is updated more regularly than the other tools. Kung-Log also does a nice job of enabling some of the more obscure features of different host systems, such as line-break options and e-mail notifications.

Six OS X Posting Tools Compared

COMPANY	PRODUCT	MOUSE RATING	PRICE	OS COMPATIBILITY	CONTACT	SUPPORTED WEBLOG SERVICES	PROS	CONS
Adriaan Tijsseling	Kung-Log 1.44	★★★★	free ^A	Mac OS X	www.kung-foo.tv	Blogger ^B , Movable Type	Rich feature set; can manage Weblogs on multiple servers; very responsive developer.	Large amounts of text slow performance.
iAware	EspressoBlog 2.2.1	★★	free ^A	Mac OS X	http://iaware.interalia.org	Blogger ^B , Movable Type	Full support for keyboard shortcuts; image-upload assistance.	Confusing user interface; no preview function; doesn't support custom HTML.
pMachine	pMpost 1.0	★★★	\$20	Mac OS X	www.pmachine.com	pMachine	Supports custom fields for more flexibility.	No support for keyboard shortcuts; no image-upload assistance.
Ranchoero Software	NetNewsWire 1.0.1	★★★★	\$40	Mac OS X	www.ranchoero.com	Blogger ^B , Movable Type, pMachine, Radio, and others	Integrated with RSS reader; can manage Weblogs on multiple servers.	No image-upload assistance.
Tim Conner	BlogApp 1.3	★★	\$6	Mac OS X	www.objectivelabs.com	Blogger ^B , pMachine, Radio	Easy to use.	No preview function; no support for categories, multiple Weblogs, or keyboard shortcuts.
William Coldwell	iJournal 1.5	★★★★	free ^A	Mac OS X	www.planetcryo.com	LiveJournal	Supports keyboard shortcuts; lists current iTunes song; mood selector.	No Draft mode ^C or image-upload assistance; no support for categories or custom HTML; only retrieves latest post.

^ADonations accepted. ^BSupports any Weblog service that uses the Blogger API. ^CNo draft mode on LiveJournal, but posts can be marked as public or private.

So it's disappointing that Blogger still lacks a built-in commenting system. Most of the other Weblog systems we tested have commenting support turned on by default. (Oddly, Radio forces you to go out of your way to activate its commenting features.)

Commenting systems come in two varieties—linear and threaded. Linear discussions append messages one after another, usually with the most recent comment appearing at the bottom. This organization method makes it impossible to see who's responding to whom. Threaded discussions fix this problem by branching off related comments so you can follow an entire thread before moving on to a new topic (see "Unraveling the Threads"). To our disappointment, only two of our Weblog systems—GeekLog and LiveJournal—offer threaded discussions. Of the two, LiveJournal goes the farthest; it'll automatically e-mail new replies to the comment recipient, fostering continued discussion.

Mark Your Calendar If building a community is your main goal (as might be the case if you run a Weblog for cancer survivors, for example), you'll want to make your site a place where readers come to connect. Look for a Weblog package that includes group-building tools, such as calendars, polls, and e-mail announcements.

Weblog calendars come in two forms. Those found in LiveJournal, Movable Type, and Radio work in conjunction with archiving features to help readers locate older posts. Other calendars, such as the one found in GeekLog, allow administrators and users to post upcoming activities such as conferences, Webcasts, and group motorcycle rides. pMachine is the only service in this roundup that offers both options—an archive calendar for the public interface and a planning calendar for registered users of the site.

GeekLog and LiveJournal also include built-in tools that help you set up polls—a great way to take the pulse of your readership and start conversations.

Stay Connected A difficult challenge in building an active readership is getting people to return to your Weblog regularly—especially if you don't have a consistent posting schedule. E-mail notifications can help here.

Movable Type's Notifications feature lets users sign up to receive e-mail messages from a Weblog's administrator when significant new posts appear on the site. pMachine offers a similar solution with its optional reader-registration feature. In that case, Weblog administrators can send e-mail messages about new posts or any other topics to all registered users.

iBlog's e-mail feature offers a more selective approach. It launches OS X's Address Book, so you can handpick recipients. This isn't as convenient as being able to maintain a list of actual subscribers. (iBlog can't use the Address Book's Groups feature to maintain a single mailing list.) And of course, the feature is of no use to Mac users who use Microsoft Entourage or other address books.

GeekLog, LiveJournal, and pMachine also let readers see optional profiles of other registered users, which can be useful if you want to let users learn more about one another.

Syndicating Content

In addition to creating standard HTML pages, increasing numbers of news and information sites are now also publishing their content in an XML-based format called RSS (which stands for either Really Simple Syndication or Rich Site Summary, depending on whom you ask). RSS content can be picked up and republished—along with a link to the original news item—by other Web sites or specialized applications. For example, RSS newsreaders, such as Ranchero Software's free NetNewsWire Lite (www.ranchero.com), offer a great way for news junkies to see at a glance what's going on at dozens or even hundreds of sites simultaneously, and to drill down for more detail with a single click.

Unless you're a programmer, creating an RSS feed by hand is fairly tricky. However, all of the Weblog systems we tested create RSS feeds for you. In fact, there's really no reason not to generate an RSS feed for your Weblog. You're almost guaranteed to get more traffic by placing a syndicate or XML link on your site.

In addition to offering your own RSS feed, you may also want to integrate another site's RSS headlines into your own page. For example, if you run a gaming Weblog, you might want to post the latest headlines from The Gaming Mac (www.thegamingmac.com) into a box on your home page. Only GeekLog and Radio have this feature built in. However, you can find third-party tools that will add the feature to other Weblog systems.

Other Factors

There are also lots of smaller features that can provide a better experience for the administrator and the reader.

Searchable Content If you update your Weblog regularly, you'll eventually end up with a massive archive of old posts. Your readers are rightly going to expect a search engine to help them dig up antique topics. But while a search tool seems like a fairly basic feature, only GeekLog, Movable Type, and pMachine offer a full-content-search option. To add this feature to Weblogs

Unraveling the Threads While linear discussions (left) leave you to guess which posts relate to which, threaded discussions (right) let you quickly see who's responding to whom—helpful in facilitating meaningful discussions.



Build a Better Weblog

There are no hard-and-fast guidelines for creating successful Weblogs, but here are some tips that may help you build and keep a loyal readership:

Post Regularly Try to post every day if you can. It takes time to build an audience for a Weblog, and once you've got loyal readers, you'll want to give them reasons to keep coming back. Writing every day is good discipline, too. If you hit a case of writer's block, try subscribing to the daily Blogfodder mailing list (www.blogfodder.com) for inspiration.

E-mail Users to Generate Repeat Traffic Because there are so many Weblogs to choose from, readers might not return to your blog daily, even if they like your content. To encourage return visitors and build community, use your Weblog service's Announcements feature (if it has one) to set up an e-mail list that readers can join. Subscribers can receive an e-mail whenever you post something new. Blogger Pro, Movable Type, and pMachine all include this kind of feature.

A Picture Is Worth 1,000 Words Even if you're not running a photo site, you'd be amazed at how far the occasional image can go toward making your Weblog more approachable and enjoyable. If you have a digital camera, try augmenting some posts with original images every now and then.

Watch What You Say Informal though it may be, a Weblog is still a publication. Despite your constitutional right to free speech, you don't have the right to slander or libel with impunity. Also, search engines and archiving systems make a permanent record of everything you post, so complaining publicly about bosses and coworkers may be hazardous to your future employment. This doesn't mean you shouldn't use your Weblog as a place to kvetch, but do be careful, and save that angry post as a draft before making it live.

based on other systems, you'll have to sign up with Google or another third-party search company—not nearly as elegant as having the option built in.

Bookmarklets If your Weblog often links to or quotes from other sites, you'll appreciate a package that supports *bookmarklets*—special JavaScript links that make it easy to copy text and URLs from other sites into your Web-based posting form. Select the text you want to quote, and click on the bookmarklet icon in your browser's Bookmarks bar. A new posting window will appear with the URL and selected text already inserted and linked. Both Movable Type and pMachine come with support for bookmarklets. You can add this feature to Blogger and Radio via a third-party application. At press time, Apple's Safari Web browser didn't support bookmarklets. However, Microsoft Internet Explorer does.

Image and File Uploads If you plan on posting images frequently, be sure to choose a tool that simplifies the process by generating the `` tag—complete with height and width attributes—for you. With the exception of LiveJournal, all of our Weblog packages offer image-upload assistance. Movable Type gets bonus points for automatically creating linked image thumbnails—assuming your server has the Image::Magick Perl module installed.

iBlog and Movable Type also offer assistance for uploading standard files, which can be useful if you want to make downloadable attachments such as PDFs

available to your readers. iBlog is also the first Weblog tool to offer iLife integration, letting you quickly browse your iTunes music and iPhoto images and upload them in a Weblog post.

Editing Templates Although we'd love to say that some of these packages make it easy to tweak page designs, nearly all of them force you to edit chunks of HTML and proprietary tags from within a Web form—not a pleasant task.

The one exception to this rule is iBlog, which ships with a handful of easy-to-alter Cascading Style Sheets and a built-in utility that lets you generate custom color combinations. You can even make basic changes to the page layout from iBlog's Navigation Editor.

Plug-ins and Add-ons Of course, no Weblog package can meet every conceivable need. If your organization wants to create a custom behavior that's not part of the core package—for example, the ability to grab the first 15 words of every entry posted in a month and display them on a summary page—all is not lost. GeekLog, Movable Type, pMachine, and Radio are all extensible via plug-ins, which let you enhance your system without disturbing the core installation. Plug-ins are preferable to altering a Weblog's source code directly (assuming this is even possible), as these edits can make upgrading in the future difficult.

Most plug-ins are distributed as freeware or shareware from other users of your Weblog software. Check the company's home page for links to additional resources and add-ons to see what's available.

The Last Word

People frequently get started with simpler solutions only to find themselves longing for more features and more control down the road. Since migrating from one system to another can be messy, if it's possible at all, you're often better off starting with a more advanced package that can grow with your needs.

Despite Blogger's fame, the current version has little to offer beyond a good set of templates and an extremely easy setup process. (Blogger lacks even a basic commenting system.) Users tend to migrate from Blogger, not to it.

If building a thriving online community is your main priority, GeekLog and LiveJournal offer the fullest set of collaborative features. Of the two, GeekLog is more powerful and offers more features, but it also requires more technical skill to operate.

For users who want a Weblog system that can expand with the needs of their publication or business, we recommend Movable Type or pMachine. Both offer excellent features, extensibility, and power, and they're both easy to use. In fact, with a bit of tweaking, Movable Type and pMachine can serve as basic content-management systems. Demanding users will likely be satisfied with either system. □

SCOT HACKER has been writing about technology since 1994. He's the Webmaster at the University of California at Berkeley's Graduate School of Journalism. His own Mac-hosted Weblog is at <http://birdhouse.org/blog>.



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To find out more about this Apple ColorSync[®]-compatible HP Designjet 120 or to order a print sample, visit designjet.hp.com.

Switch, Don't Fight

Former PC users—Switchers—have received so much recent attention that longtime Mac users may feel disregarded: “Hey, I’ve been using a Mac since 1984! Where’s *my danged banjo-pickin’* commercial?” Chin up. In a way, we’re all Switchers—from Outlook Express to Apple Mail, from QuarkXPress to Adobe InDesign, from the miserable round mouse to a multibutton rodent. With that in mind, this month’s *Mac 911* examines similar switches—moving from AOL to a better ISP, leaving Microsoft Office behind, seeking alternatives to iCal, and swapping out a PowerBook’s hard drive.

America Offline

My mom is on America Online and wants to get off. I've set her up with Microsoft Entourage and a new ISP, but she'd like copies of all her stored e-mail messages and bookmarks before she leaves AOL. Is there a way to retrieve them?

Steven Goodman, *Macworld.com forums*

There is, but AOL doesn't make it easy.

AOL uses proprietary formats for its e-mail, bookmarks (termed Favorite Places), and address book. Regrettably, the exclusive nature of these formats

renders the import commands in Entourage and Web browsers impotent. Therefore, it takes a bit of manual labor to move messages and bookmarks out of AOL and into a format compatible with other applications.

AOL's e-mail format is the worst offender. To shift her e-mail to Entourage, your mother will have to log on to AOL and forward all her saved messages to her new e-mail address. This is a tedious process, but

it provides the minor side benefit of reassuring her that leaving AOL was the right thing to do.

To transfer her bookmarks, she must once again fire up AOL, choose Favorite Places from the Favorites folder in AOL's toolbar, select the bookmarks she wants to transfer, and drag them to the desktop, where each bookmark will turn into a separate file.

Then she must go to www.elephant-place.de/LinkConverter, and download a copy of Michael Keuter's LinkConverter. This free OS 9 utility (which also works well in OS X's Classic environment) will allow her to convert AOL's bookmarks into files compatible with today's Web browsers. To convert the information, she can just drag those AOL bookmarks onto either the Link To MSIE or the Link To NAV icon.

Should your mother care to move her address book, refer her to Apple's Older Software Downloads site (www.info.apple.com/support/oldersoftwarelist.html), where she can get a copy of AOL Address Extractor. This OS 9 utility, originally intended to convert AOL addresses to a Claris EMailer-friendly format, will place the contents of AOL's address book into a text file. From that text file, your mother can copy and paste her addresses into Entourage's address book.

Out of the Office

I'm moving to OS X but would prefer not to use Microsoft Office. The problem is that I occasionally have to read and create documents compatible with Word and Excel. What are my alternatives?

Ken Moore, *Ukiah, California*

If you wish to read or create Word and Excel files that contain every exotic bit of formatting the two programs can generate, I fear you have no alternatives. I've found no other Excel-compatible application that can create or read Excel's translucent 3-D charts. Likewise, in any program other than Word, you may find it difficult to view the complete contents of Word .doc files with embedded graphics and movies or tracked changes.

However, if your needs are more modest—if you simply want to create or open no-frills Word or Excel documents—you have a few options.

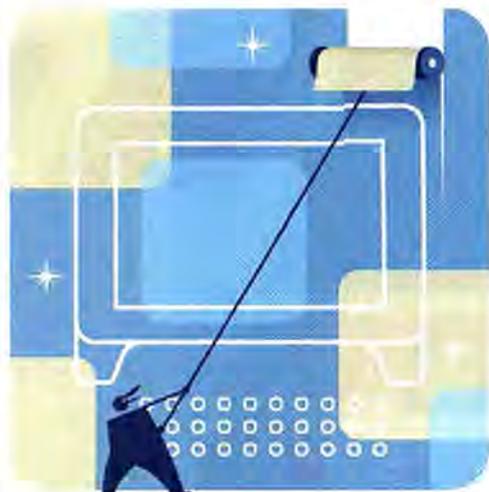


ILLUSTRATION BY LEO ESPINOSA

The first is an application you may already own—Apple's \$79 AppleWorks 6 (◆◆◆◆; "Office Remodeling," December 2001). Bundled with the iMac, iBook, and eMac, AppleWorks can read and write documents in native Word and Excel formats.

ThinkFree's \$50 Office (◆◆◆◆; October 2002) is an OS X Java application that reads and writes Word and Excel files in their native formats. ThinkFree Office has been far pokier than AppleWorks 6 on my 933MHz Power Mac G4, but it's perfectly capable of creating and rendering basic Word- and Excel-compatible documents.

If you're interested in exploring a free open-source alternative—and you have a broadband connection capable of handling a 164MB download—check out OpenOffice (www.openoffice.org). Based on Sun Microsystems' StarOffice, OpenOffice is an office suite that can generate and read documents in Word and Excel formats (see "The Other Office"). OpenOffice requires OS X 10.2 and installation of the included X Window System, a set of libraries and programs that provide a graphical user interface in Unix.

In final beta as I write this, OpenOffice includes everything you need to install the suite on your Mac. However, the installation process can be tiresome—six separate installer applications run in a series, and you must enter your administrator's password four times. Once OpenOffice is installed, you'll find that it boots slowly, and that fonts lack the smoothness they have in OS X's Aqua interface. Barring these inconveniences, OpenOffice does a remarkably good job of creating and reading even moderately complex Office documents—better than AppleWorks or ThinkFree Office.

Change the Date

I need a more robust calendar application than iCal, and I'm willing to pay for it. Any suggestions?

Catherine Drozdowski, *Macworld.com forums*

There are three main Macintosh calendar applications. Microsoft Entourage, the e-mail client in the \$499 Microsoft Office v. X suite, includes a comprehensive calendar component (◆◆◆◆; "Mac OS X E-mail Guide," October 2002). Palm offers the free Palm Desktop 4.0 (◆◆◆; July 2002). And Now Software has the \$120 Now Up-to-Date & Contact 4.2.6 (◆◆◆◆; August 2002). Like iCal, they all include such features as alarms, to-do lists, integration with contacts, and Palm synchronization.

I'd start with Palm Desktop for the simple reason that it's free. In addition to costing nary



TIP OF THE MONTH

Thanks to the keypad found on many Macs' keyboards, you may not need to display the on-screen keypad in Apple's Calculator. Here's how to make a calculator that displays only the results field.

In a text editor, open the Calculator preference file—found in your user folder at Library: Preferences: com.apple.calculator.plist. Change the values under the key NSWindow Frame Calculator to read `<string>555 380 182 75 0 0 1024 746 </string>`.

Save the preference file and enjoy your new, compact Calculator. If you want the old Calculator back, simply delete the preference file and all is normal again.

John Powers, *Elyria, Ohio*



a nickel, it's nicely laid out and supports the vCard and vCal standards—thus allowing you to export contact and calendar information easily. Palm Desktop does not, however, allow you to share your calendars or publish them on the Web.

If you own Microsoft Office, you've already got Entourage. The integration of e-mail and contact- and calendar-management within a single application allows you to perform iCal-like operations such as creating a calendar event, inviting a group of people in your Entourage address book to that event, and sending invitations all within a single window. An update slated for this summer will provide greater integration with Microsoft's Outlook Exchange Server—so you can share calendar information with other Entourage users and those who use Outlook on a Windows PC.

Now Up-to-Date & Contact (NUDC) isn't free, but it does allow you to share calendars across a network, thanks to the bundled Public Event Server. By the time you read this, Now may have released an update to NUDC that provides synchronization between NUDC and Apple's Address Book. An update to follow shortly thereafter may add the ability to subscribe to published iCal calendars. Keep an eye on Now's Web site for details as they become available.

The Cloning Kind

I'd like to transfer files from my PowerBook G3's (Pismo) hard drive to a higher-capacity drive. To do this, I bought a 60GB hard drive, along with a FireWire enclosure. I've downloaded Carbon Copy Cloner, and I'm ready to transfer files and make the switch. But I can't find a detailed description of how to do this.

Jim Furlong, *Macworld.com forums*

Install the new hard drive in the enclosure and string a FireWire cable between the enclosure and your Power-

continues

The Other Office
The free OpenOffice offers your best chance to create and read Microsoft Office-compatible documents if you don't have Office.

UNSOLICITED ADVICE

If, like me, you install every intriguing utility that appears on VersionTracker.com, the Other portion of your System Preference window undoubtedly brims with preference panes for programs you haven't touched in months. Care to clear the clutter? Here's how.

Navigate to the PreferencePanels folder inside the Library folder at the root level of your hard drive (Library: PreferencePanels). Inside this folder you'll see folders bearing the names of some of the preference panes in System Preferences. Drag those panes you no longer need to the Trash.

Wait, you're not done yet. Preference panes can also dwell within your user folder, so go to Library: PreferencePanels and toss any preference panes there that you no longer require.

You really should be done now, but if you insist on viewing every PreferencePanels folder on your Mac, you'll find one more at System: Library: PreferencePanels. This folder contains Apple's preference panes—items you can't trash without changing the permission settings of the folder. Unless you have a *very* good reason for doing so, you should not trash the items in this folder.

Book. Launch Disk Utility (found in the Utilities folder inside the Applications folder), select the Erase or Partition tab (depending on whether you want to format the drive as a single volume or partition it into more than one), and format the drive in Mac OS Hierarchical File System Extended (HFS+) format.

Launch Carbon Copy Cloner (free; www.bombich.com). From the Source Disk pop-up menu in the Cloning Console window, choose a volume on your internal drive that contains OS X. From the Target Disk pop-up menu, select the drive in the FireWire enclosure. Click on the Preferences button; in the Target Disk Option portion of the resulting sheet, select the Make Bootable option—this will allow you to boot from the drive currently inside the enclosure.

Click on Save to dismiss the sheet, and then click on the Lock icon. When asked to do so, enter your administrator's password and click on OK. To copy the files from your internal drive to the new hard drive, click on Clone—and go have a libation while Carbon Copy Cloner does its job.

Once the cloning process is complete, direct your browser to www.macworld.com/2003/01/features/upgrade/index.html for step-by-step instructions on how to replace your PowerBook's hard drive.

Staying Awake

Is there a way to disable the sleep-activation settings temporarily for specific applications?

From the Macworld.com forums

You mean, for example, for those times when you'd rather burn a DVD with your Mac than create a coaster? Regrettably, I've yet to find a way to tie Energy Saver activation to individual applications.

However, I can offer you a method easier than opening Mac OS X's System Preferences.

That method is Alexey Manannikov's free utility, SleepLess (www.alxsoft.com/mac/sleepless.html). When you launch SleepLess, it produces a tiny, floating palette with a button that reads Never Sleep. Click on this button, and your Mac will have a case of insomnia until you click on the button—which now reads Sleep OK—once again.

Smacking the Ceiling

I urged a friend to upgrade the RAM in his iMac by adding a 256MB chip, even though the manual suggests that rev. A and rev. B iMacs hold a maximum of 160MB of RAM. When we rebooted the computer, the amount of RAM had increased, but only by 128MB. Is there a way to use all 256MB on this iMac?

From the Macworld.com forums

Quite possibly. The first thing you should do is zip over to the Apple Featured Software site (www.info.apple.com/support/downloads.html) and, in the Search For Downloads field, type the words *iMac firmware*. Before an iMac can exceed Apple's RAM limits, it may need a firmware upgrade. Download the update appropriate for your iMac model and run it. If your iMac already has the latest firmware installed, the updater will tell you so.

If the firmware update does no good, it's time to contact the vendor that sold you the RAM. Although Apple claims some of its models will hold only so many megabytes of memory, they can actually hold more if given compatible RAM. For example, Apple claims that the original iMac can bear only 160MB of RAM when in reality it can embrace as much as 384MB. (My rev. B iMac ticks along quite nicely with 320MB.) The RAM vendor may claim that it supports only those limits provided by Apple. In such cases, ask to swap the RAM for a new chip. If the company refuses to swap, visit TechWorks (800/688-7466, www.techworks.com).

Why TechWorks? When I intend to exceed Apple's limits, I patronize a dealer that advertises its RAM as able to meet the Mac's real limits. TechWorks does just that. If my Mac doesn't recognize all the megabytes I've installed, I have the option to call TechWorks' tech support, politely clear my throat, and say, "Ya know, it says on your Web site that my iMac will hold 384MB of RAM, and yet. . . ." Under these circumstances (which I've never experienced, by the way), TechWorks should do the right thing. □

Contributing Editor CHRISTOPHER BREEN is a recent Switcher—after finally abandoning his blue-and-white Power Mac G3 and moving completely to Mac OS X on a Power Mac G4. He hasn't looked back.



Share tips and discuss Mac problems with other Mac users in the Mac 911 forum (www.macworld.com/subject/mac911). Also send tips by e-mail to mac911@macworld.com. We pay \$50 for tips selected for publication in *Macworld*. All published submissions become the sole property of *Macworld*. Shareware and freeware mentioned in *Mac 911* are available at www.versiontracker.com.

Handy Suggestions for One Newly Elected Apple Board Member

Memo to Al



AL, I REALLY WANTED TO WRITE AND TELL YOU HOW pleased I was to learn that you were joining Apple's board of directors. Granted, as long as the company has Steve Jobs as CEO and Mini-Me in its commercials, Apple has as much brand-name, lunch-box-worthy celebrity star power as any geekware manufacturer really needs, but you're different. *You* almost had commit-authority to launch nuclear missiles. It's to your credit that during your eight years as vice president you never did, not once, not even a little one.

Still, it's a good thing to see on a resume, particularly in this market. Will Microsoft ever consider muscling into Apple's territory by making a reliable and easy OS that people actually want to use? Who knows? But if it does, the mental image of you and Steve standing across from each other in front of a keyboard, typing in the IP address of Microsoft's primary server, exchanging a solemn nod, and then simultaneously turning a pair of keys on an Xserve should give that company pause.

Your other big plus is that very few politicians at your level leave me with the impression that they can have a conversation about technology without referring to it all as "the computer"—as my aunt does. When I think about Bob Dole or H. Ross Perot, I imagine them having a long and vague conversation with a junior staffer or a grandchild about how long it would take to put the Internet on their home machines.

So I definitely approve. And I want to help you get off to a good start in your new digs, so let me give you a few bits of advice.

When Steve looks like he's about to throw something, duck. Actually, wearing a helmet during board meetings isn't a bad idea.

Well, no, Steve isn't a violent man by nature, being a vegetarian and all. See, the problem with Mac users is that they like to be a couple of years ahead of the technology curve. The problem with being Steve Jobs is that you have to be a couple of years ahead of Mac users. This pressure can lead to a management style that's . . . somewhat animated. Incidentally, are the pants on your good suit cut loose enough that you could wear a protective cup under them?

Make sure Apple stays on the side of the consumer when it comes to rights-management issues. See, Steve really has something with this "The Mac is the hub of your digital lifestyle" stuff. But media companies (that is, the ones with the rights to all the good albums) want to stick baseball cards in the spokes, adding a con-

stant raspberry-like *pblpblbbpbt* to the background of our enjoyment of movies, images, and digital music.

What made the iPod such a winner? Lots of things, but high on the list is its sensible antipiracy approach. I can copy music between my Mac and my iPod naked for all Apple cares; it emits a discreet cough of reprimand only when I try to copy music to someone else's computer. Sony's MP3 players incorporate Sony Music's vision of a world where you have to check music in and out of a device's library, and a future in which you have to cough up another dollar every fifth time you want to listen to David Bowie's *Lodger*.

Which is why nobody *buys* Sony's MP3 players. Nonetheless, the music industry is making serious inroads toward forcing this reality upon an unbelieving populace.

Getting the mainstream press to equate MP3 with piracy was step one. Agreeing on a scheme for corrupting CDs was step two. Getting companies such as Microsoft and Apple to accept that these CDs are "copy-protected" and not corrupted is the third step. Next, Sony will take all the good beer off the market and arrange for Baz Luhrmann to make a sequel to *Moulin Rouge!*—this time with *two* exclamation points in the title. Microsoft is already starting to crumble; don't let Apple be next.

Try to get the Richard Feynman "Think Different" poster back in print. This has nothing to do with Apple's future, but I didn't get one when they came out.

And there's one thing above all I want you to do: *Try to remember that Apple's story is a simple one.* Apple is no ordinary company. Its Golden Ages occur because the company formulates a clear vision of the shape technology will take in the near future, and then demonstrates its confidence in this vision with a streamlined list of products, not with a shotgun approach of trying to stock one of everything a customer might want to buy.

That's something to keep in mind when a trip to the Apple Store reveals two different notebook lines and five system designs. And remember what I said about the helmet and the cup. □

Wearing a helmet to board meetings isn't a bad idea.

Contributing Editor ANDY IHNATKO (www.cwob.com) writes about technology for the *Chicago Sun-Times* and pops up in Roger Ebert's *Movie Answer Man* column quite frequently.

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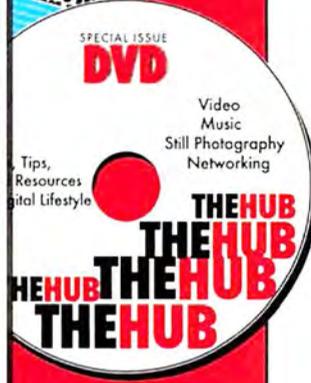
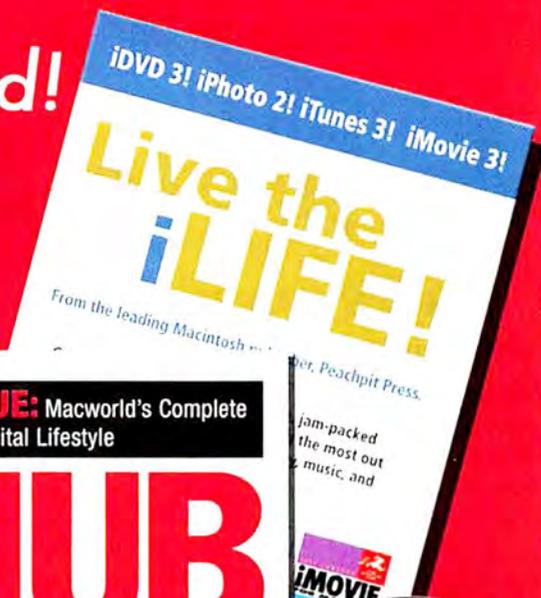
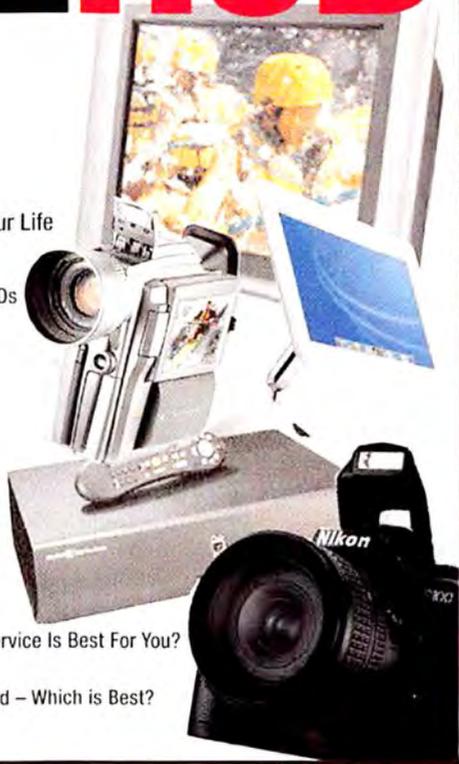
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New York's most important and largest event for Design, Publishing, Video & Audio Professionals and Prosumers.

It's time for a change. And it's time for an event that addresses the increasingly tech-savvy community of artists, designers, directors and musicians. Macworld CreativePro Conference & Expo™ offers an agenda full of the creative community's best practices, including new insights from cutting-edge artists — people driven by a desire to share the latest creative techniques and to exchange new ideas.

2T 2-Day Tutorials

- Advanced Mac OS X
- Intermediate Dreamweaver
- DVD Studio Pro
- look ahead for more

1T 1-Day Tutorials

- Mastering Digital Photography
- Secrets of Desktop Publishing
- Final Cut Express
- read on for more

L1 Level 1 Conference

- Prosumer Video
- Music
- Photography
- many more

L2 Level 2 Conference

- Professional Video
- Design & Publishing

LAB Half Day Labs

- PDF Production
- Final Cut Pro
- Flash ActionScript for Designers
- Mac OS X for Administrators

Spanning five comprehensive days, Macworld CreativePro conferences provide creative professionals and prosumers the opportunity to learn more about industry-leading tools and practices.

**Innovate.
Motivate.
Create!**

Dates & Times:

Feature Presentations*

Wednesday, July 16	9:30 am – 10:30 am
	3:00 pm – 4:00 pm
Thursday, July 17	10:45 am – 11:45 am
	3:00 pm – 4:00 pm

2-Day Tutorials

Monday, July 14	10:00 am – 5:00 pm
Tuesday, July 15	10:00 am – 5:00 pm

1-Day Tutorials

Tuesday, July 15	10:00 am – 5:00 pm
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Level 1 Conference

Wednesday, July 16	10:45 am – 5:30 pm
Thursday, July 17	9:00 am – 5:30 pm
Friday, July 18	9:00 am – 12:00 pm

Level 2 Conference

Wednesday, July 16	10:45 am – 5:30 pm
Thursday, July 17	9:00 am – 5:30 pm
Friday, July 18	9:00 am – 12:00 pm

Half-Day Labs

Friday, July 18	9:00 am – 1:00 pm
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Birds-of-a-Feather Meetings

Wednesday, July 16	6:00 pm – 7:30 pm
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Exhibit Hall

Wednesday, July 16	10:00 am – 6:00 pm
Thursday, July 17	10:00 am – 6:00 pm
Friday, July 18	10:00 am – 4:00 pm

Registration Hours

Monday, July 14	8:00 am – 6:00 pm
Tuesday, July 15	8:00 am – 6:00 pm
Wednesday, July 16	8:00 am – 6:00 pm
Thursday, July 17	8:00 am – 6:00 pm
Friday, July 18	8:00 am – 3:00 pm

*Feature Presentations are open to all registered attendees. Seating is limited and access is based on a first-come, first-serve basis except for Platinum Pass attendees who have access to preferred seating.



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Conference Overview

Wednesday, July 16 – Friday, July 18

The Level 1 & Level 2 Conferences have been developed for design and publishing, video and audio professionals. Both Conferences offer in-depth training for artists of all disciplines, providing two different levels of education and attendee services.

L1 Level 1 Conference

Are you a **creative** who seeks to expand your skills in design and publishing, photography and imaging, video and audio? Then the Level 1 Conference is for you!

- Get direct access to instructors who are using the latest technology solutions for creative innovation.
- Choose from more than 60 sessions on digital music creation and recording, design and publishing, digital photography, prosumer video, Mac maintenance and Web design.
- Be your own mixmaster! Develop your ideal track by mixing and matching sessions.

L1 Level 1 Track Descriptions

Pro Audio Hot topics designed especially for the professional sound engineer, audio editor and musician. Go inside the world of Mac audio products and learn how to get more from your favorite DAW, utilize the power of virtual instruments, restore and enhance your legacy audio archives and much more.

Music This track is a must-attend for musicians and music producers of all skill levels. Get the inside scoop on your favorite sequencers and home recording studio setups, learn about best practices in music education and discover how to utilize the Mac as a guitarist, keyboardist or DJ.

Photography The Mac is the premier platform for capturing, storing and manipulating digital photographs. Whether you are a novice or a professional, these sessions will show you how to get the most from your digital photography gear.

Web Design Learn about page design, animation, Web video and more during these dynamic sessions taught by respected experts in the latest Web design techniques.

Design & Publishing From concept to completion, you'll discover the tools and techniques used by top Mac designers in these informative sessions.

Prosumer Video Improve your filmmaking skills and learn about the latest techniques in shooting and editing. Let the experts show you how to put iMovie and Final Cut Express to work and how to take your digital projects to DVD.

Mac Skills These sessions will provide tips for maintaining your Macintosh and working in mixed-platform environments. Whether you are making the transition to Mac OS X or want to enhance your troubleshooting skills, this track will give you the knowledge you need.

Please see www.macworldexpo.com for full schedules and session descriptions.



L2 Level 2 Conference

Are you a pro? Can you hack technical talk? Then the Level 2 Conference offers a detailed technical agenda designed for you — the **professional creative artist**.

- Learn cutting-edge solutions offered by the industry's most popular tools and applications.
- Choose from more than 40 sessions on professional publishing design and implementation, color management, professional digital video and filmmaking, and digital design techniques.
- Get good eats, really useful conference materials and a place to relax while at the show.

L2 Level 2 Track Descriptions

Professional Video These sessions will feature in depth, technical presentations for the digital video professional. Immerse yourself in Final Cut Pro, Final Cut Express and other DV tools, and learn techniques for authoring and delivering projects.

Design & Publishing These sessions will show design and publishing professionals how to maximize their investments and optimize workflows. You'll explore the technologies that are platform differentiators for Apple — color, PDF deployment, content management and much more.

Our Instructors Wrote the Book — Literally

Macworld CreativePro Conference & Expo is your opportunity to learn from the best! We're pleased to bring you the authors of books on Photoshop, Desktop Publishing, Dreamweaver, QuickTime, iLife and Mac OS X Troubleshooting — just to name a few! **Learn from the most respected authors and columnists.** Don't miss top-level instructors as they share their expertise on graphics, publishing, video, music and the operating system that makes it all possible.



2T 2-Day Tutorials

Monday, July 14 – Tuesday, July 15 10:00 am – 5:00 pm

Attend our 2-Day Tutorials for intensive training on your favorite application or tool, while interacting one-on-one with your peers, and tapping the minds of industry experts.

TA Dreamweaver

Designed for the intermediate Dreamweaver user, this 2-Day Tutorial will explore advanced Web design concepts and show you how to exploit Dreamweaver's sophisticated (and long) list of features. **Build Web sites that not only look good, but work well.**

TB DVD Studio Pro

With DVD Studio Pro, DVD authoring takes on a simplicity and ease-of-use that is rapidly gaining favor and winning converts from other platforms. Come and learn this exciting application with a panel of respected DVD experts.

TC Final Cut Pro

This tutorial will empower you to navigate Final Cut Pro 4's amazing new features with clarity and ease. You will find a **vast treasure trove of valuable techniques, tips, tricks and time savers.**

TD How to Produce, Create & Deliver Interactive Solutions

Learn how to **get started in building interactive solutions.** Gain valuable knowledge to produce an interactive project, and learn how authoring applications are used. We'll address **developing digital solutions for delivery — via the Web, CD and DVD — as well as recent technological breakthroughs.**

TE Mac OS X: Advanced Concepts & Administration

Learn how to **support OS X from a variety of levels: the User, the Support Staff, and the System Administrator.** Skill level aside, everyone will walk away better acquainted with OS X.

TF Professional Photoshop

A faculty of experts will **unlock the secrets of this amazing tool — while inspiring you to take your projects in new directions.** Broaden your skills, deepen your digital imaging bag of tricks, and open new horizons.

TG QuarkXPress

Learn the How-To's of font management, tips for long documents, graphics, and efficiency. We will also cover XTensions that let you **leverage Quark in totally new ways.** Discover the pros and cons of using InDesign vs. QuarkXPress, and what's new in QuarkXPress 6.

TM Moving to Adobe InDesign

InDesign's support for new technologies, integration with the operating system and its ability to import and export a wide variety of file formats has made it popular among all publishers. In this 2-Day Tutorial, you will learn how to **address real-world issues including migrating from QuarkXPress, using the integrated PDF Export feature, preparing files for delivery to a printer and efficiently working with Photoshop and Illustrator graphics.**

1T 1-Day Tutorials

Tuesday, July 15

10:00 am – 5:00 pm

Our intensive, 1-Day Tutorials provide you with in-depth training in a lecture format on key Mac products and technologies. Join our expert instructors for a full day of exciting learning opportunities!

TH Mac 911

Learn techniques for troubleshooting and repairing the misbehaving Mac. See an overview of today's diagnostic and repair utilities, and ways to **upgrade and streamline your Mac for peak performance.**

TI Mac OS X Disaster Relief

This full day tutorial, based on the best-selling book *Mac OS X Disaster Relief*, shows you **how to try to prevent these problems — and how to fix them if they happen anyway.**

TJ Mastering Digital Photography

This 1-Day Tutorial will help you take great images, better than anything you've ever shot before — then it will show you the tricks to organizing, archiving, retrieving, and sharing your pictures with the world. **Great data in creates beautiful pictures out!**

TK Secrets of Desktop Publishing: From Mac OS 9 to OS X

Improve your skills using QuarkXPress, Adobe Photoshop and Illustrator. Discover simple steps in Microsoft Word that can save you hundreds of hours of formatting and composition time.

TL The Ins and Outs of Final Cut Express

This 1-Day Tutorial will focus on using Final Cut Express' **powerful editing and compositing tools in the context of creating three different video programs.** Final Cut Express is the perfect application for those who want to move up from iMovie, as well as those who want professional tools but are intimidated by Final Cut Pro's learning curve.

Macworld CreativePro Conference & Expo is the most comprehensive educational experience! 1 & 2-Day Tutorials will be held before the Level 1 & 2 Conferences and Half-Day Labs. Combine these programs and enjoy a full week of dynamic learning.

Please see www.macworldexpo.com for full descriptions and details on who should attend.



Event Highlights

Special Interest Pavilions

Macworld CreativePro Conference & Expo's Special Interest Pavilions will showcase the coolest Mac developers displaying products and services that span a wide array of needs and interests. Visit www.macworldexpo.com for more information.

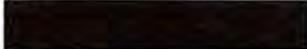
Internet Café

The Internet Café is one of many resource areas Macworld CreativePro Conference & Expo provides to help you make the most of your event experience. Located in the exhibit hall and available to all registered attendees, the Internet Café offers a comfortable setting to check your email, access the Internet, grab a snack or cup of coffee, chat with your friends and colleagues, or just relax.

Sponsored by: 

Apple Consultants Network — Free Technical Advice!

One of the most popular resource areas in the Internet Café is the Apple Consultants Network counter. Members of the Apple Consultants Network are independent consultants, trainers, and resellers specializing in Apple products and solutions who offer free technical support to Macworld CreativePro Conference & Expo's attendees! Take advantage of this opportunity to get help directly from an expert.

Sponsored by: 

Final Cut Pro User Group Network Theater


Final Cut Pro User Group Network

Jumpstart your creativity! Connect with members of Final Cut Pro User Groups from across the country and abroad as the FCP User Group Network hosts its third program of independent, broadcast and theatrical work created in Final Cut Pro. Learn how artists, graphic designers and motion graphics artists are using the uniquely creative workflow of FCP to meet their sophisticated needs, both professionally and aesthetically. Win special prizes courtesy of participating sponsors.

Join the FCPUG Network on Thursday, July 17 for a special evening event on Final Cut Pro 4.

For more information on what will be the largest gathering of FCP users and gurus, visit www.macworldexpo.com/fcp or <http://www.fcpugnetwork.org>.

Macworld CreativePro's Concert Series

Musicians from around the world are coming to NY to perform for you! Join us for this series of free concerts by musicians who rely on their Mac to deliver the goods. See the latest Mac audio tools put to work while enjoying some world class music.



2003 Digital Art Contest & Gallery

Showcasing for its sixth year, the Macworld Conference & Expo Digital Art Gallery will again promote digital art via the Mac. Using new technologies and increasingly innovative graphics software, artists are able to produce masterpieces that are getting the attention of the art world and Macworld CreativePro Conference & Expo's attendees.

The 2003 Digital Art contest is judged by some of the digital art community's most respected leaders who choose 30 digital masterpieces. Winning artwork will be displayed in a gallery setting in the Exhibit Hall at Macworld CreativePro Conference & Expo. The Gallery will then travel across the country to galleries and other venues, including Macworld Conference & Expo/San Francisco 2004.

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Macworld Best of Show Awards


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The Macworld Best of Show Awards represent an honor highly coveted within the Macintosh industry. Macworld's editors choose winners from products that are making a public debut at Macworld CreativePro Conference & Expo, or have recently been introduced. Check out these exciting and innovative products in the exhibit hall by looking for the Best of Show logo hanging in selected exhibitor booths.

Your Mac Life



Your Mac Life is the most popular Macintosh Internet radio show on the planet. At Macworld CreativePro, host Shawn King will talk with the 'movers and shakers' of the creative community like Adobe, Apple, Macromedia and Microsoft.

From software to hardware, graphics to video, with as little GeekSpeak as possible and as much humor as they can get away with, Your Mac Life provides a unique blend of interviews and listener participation via online chats, email and call-in segments, along with unmatched access to the most important people in the creative community. Your Mac Life covers your creative Mac life!

Register online today to SAVE with Priority Code: A-MWJ6



LAB Half-Day Labs

Friday, July 18 9:00 am – 1:00 pm

Half-Day Labs provide **hands-on computer training for specific applications**. To reserve a space, attendees are required to identify which topic they will focus on and must bring a laptop with the appropriate software pre-loaded. Class size is LIMITED to ensure that each student receives the instructor's full attention — so register early!

IA Acrobat in the Trenches: Combat Training for PDF Production

Level: Intermediate

This course offers a **two-stage approach to improving your PDF skills**. First, you will learn how to configure Adobe Acrobat to quickly create perfect PDF files for Web and print distribution; then, we'll explore print production-oriented plug-ins (such as EnFocus PitStop, Quite Imposing and Lantana Crackerjack) and other techniques for editing and **correcting PDF problems to achieve successful prepress output**.

LB Final Cut Pro Hands-on — The Director's Cut

Level: Intermediate and aspiring filmmakers

This fast-paced hands-on class will show you **what you need to know when cutting a project "the right way" for the difference between success and failure**. You'll edit three projects, learn about compositing, titling, continuity, pace, and handling the requests of clients in the editing process. We'll also discuss sweetening and layback to tape or DVD. Most importantly, you'll learn from an experienced award-winning video director and editor and a support team of video and film professionals.

LC Flash ActionScript for Designers

Level: Beginner

This lab presents an introduction to Flash's scripting language. ActionScript makes it possible to **manipulate Flash objects without the constraints imposed by a timeline**. Basic skills learned in this hands-on lab will even lay the groundwork for moving on to more advanced Flash programming techniques such as parsing external data, client-server communication, and more. Make your Flash sites more exciting, more useful, and more reusable with ActionScript.

LD Hands-on Mac OS X for Administrators

Level: Intermediate

This lab is designed to give IT support professionals and administrators the information necessary to **maintain and support Macintosh computers running Mac OS X**. Attention will be paid to running applications within the Classic environment, basic UNIX troubleshooting, networking, file and folder permissions, the domain structure of Mac OS X, and must-have third party solutions.

Attendees must bring a laptop with the appropriate software pre-loaded.

Lab details, prerequisites, and hardware/software specifications for each lab can be found at www.macworldexpo.com.

Feature Presentations

Hear it straight from the source! Get firsthand insight from the real trendsetters and cutting-edge product innovators in music, video and graphic arts. Don't miss your opportunity to experience this first-ever lineup and learn how these luminaries were inspired by amazing new applications and technologies.

Apple Feature Presentation

Wednesday, July 16
9:30 am – 10:30 am

Apple has a long-standing tradition of delivering high-powered presentations about the world's most advanced operating system. Apple and Mac OS X will continue to drive innovation and remain the platform of choice for creative professionals. Come hear the latest announcements and developments on the creative community's best tools and practices.

Macromedia Feature Presentation



Wednesday, July 16
3:00 pm – 4:00 pm

Norm Meyrowitz, President, Macromedia Products

Norm Meyrowitz recently returned to his role as president of products at Macromedia. In this capacity, Meyrowitz oversees development and marketing for all Macromedia product divisions. Before that, Meyrowitz headed up the New Business Opportunities effort and Mobile and Device business for Macromedia.

Meyrowitz is a recognized authority on the evolution of Web development software and media technology for the Internet. Through his experience at Macromedia, Meyrowitz oversaw the teams that created a vast array of multimedia and Web development products, including Director, Shockwave, Dreamweaver, and Macromedia Flash. He also led the effort at Macromedia toward defining the next generation of multimedia player technology development for personal computers, non-PC devices, and the Internet.

Find additional feature presentation* announcements at www.macworldexpo.com.

*Feature Presentations are open to all registered attendees. Seating is limited and access is based on a first come, first serve basis. Platinum Pass attendees have access to preferred seating.



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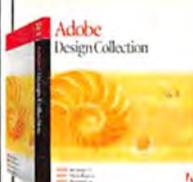


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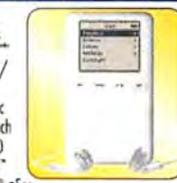
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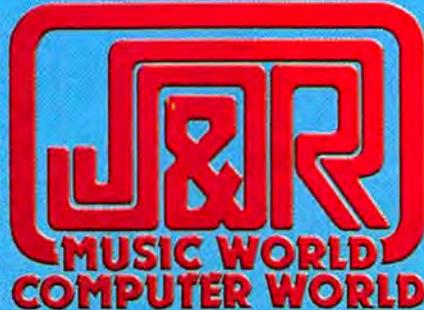
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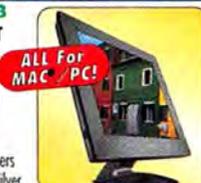
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with OptiCAL
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Minolta Dimage 7Hi
• 5 Megapixels • CF I & II
• 2560 x 1920 Resolution



Olympus C-5050 Zoom
• 5 Megapixels • CF I&II, xD & SmartMedia • 2560 x 1920 Res.



Kodak DCS-14N
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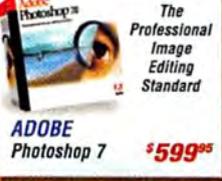


Canon PowerShot S50
• 5 Megapixels • CF I&II • Direct print capability • 2592 x 1944 Res.



Sony Cyber Shot DSC-F717
• 5 Megapixels
• Memory Stick
• 2560 x 1920 Resolution
• Carl Zeiss Zoom Lens

Canon PowerShot G3
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• 2272 x 1704 Resolution • 4x Optical, 3.6 Digital Zoom



ADOBE Photoshop 7
\$599.95



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• 35mm/APS Scanner
• 2900 dpi Optical
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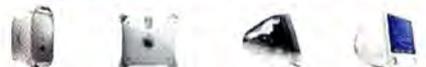
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Power Mac G4 Dual (1.42GHz) Xpress DV Editing System

Includes

- Apple Power Mac G4 with Dual 1.42GHz Processors
- 120GB System Drive • Avid Xpress DV v.3.5 Power Pack
- 240GB (2x120) of ATA/100 storage
- Sonnet Raid 133 Controller Card
- Total of 1GB of memory • Post-Op EZ Keyboard
- SuperDrive DVD/CD-RW
- Artel Motion Graphics Pack with Boris Red, FX, Graffiti Pro and Continuum
- 23" Wide HD Cinema Display
- Complete System integration & testing
- AppleCare-Three year warranty

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Power Mac G4 1GHz Xpress DV Editing System

- Apple Power Mac G4/1GHz Computer
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- 120GB of ATA/100 storage
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- AppleCare-Three year warranty
- Complete System integration & testing

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- Lacie FireWire 120GB Ext. Drive • Computer Case
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120GB	7200	239.95
160GB	7200	259.95
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400GB	7200	729.95
500GB	7200	869.95



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120gb 7200rpm **\$224.95**
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- 2/3" CCD

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- 2/3" CCD Screen
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E-10 \$739.99

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- 3.34 Million Pixels
- 10x Optical Zoom
- 5x Optical Zoom

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- 2x Digital Zoom
- 5x Optical Zoom
- 2/3" CCD

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NEW! DSC-F77 \$389.99

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- 6.30 MegaPixel CCD
- 10x Optical Zoom
- CMOS Sensor

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MINOLTA Dimage 7i

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- 7x Optical Zoom
- Direct Manual Focus

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- 4.0 MegaPixel CCD
- 4x Dig./4x Opt. Zoom
- 1.5" LCD

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NEW! Coolpix S0 CALL

NIKON D100

- 6.1 MegaPixels
- 1.8" LCD Screen
- USB

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- 10x Optical Zoom
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- USB

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- 3x Optical Zoom
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- 5.24 MegaPixels
- 2/3" CCD Screen
- USB

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NIKON D1X

- 5.47 MegaPixels
- SLR Type Dig. Camera
- Uses Nikon AF-D/i /S Lenses

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OLYMPUS C-50

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- 3x Optical Zoom
- 4x Digital Zoom

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SONY Mavica CD-400

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- 2.5" LCD Screen
- 1/1.8" CCD

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SONY DSC-P10

- 5.0 MegaPixels
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CANON PowerShot S45

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- 3x Optical Zoom
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 S230 \$379.99
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- 1/3" CCD
- 440,000 MegaPixels

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JVC GR-DV3000

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- 1/32" CCD
- USB
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SONY DCR-VX2000

- 3-CCD Progressive Scan
- 12x Opt./48x Dig. Zoom
- 2.5" LCD Screen

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SONY DCR-PC120BT \$809.99

SONY DCR-IP-220 BT

- 10x Optical Zoom
- BLUETOOTH
- 2.5" LCD
- 2.11 Mega Pixels

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- USB
- 3.5" LCD Screen
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- 6 Color Smart Archival Links

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- Smudge Free Inks
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- 314 dpi Res.
- LCD Panel for Previewing

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- 4000 DPI Optical Resolution
- USB

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NIKON LS40

- 2870 Pixel Mono-chrome Linear CCD
- 2900 DPI Optical Resolution

\$519⁹⁹

NIKON Super Coolscan LS-4000

- 4000 dpi Optical Res.
- Tri-linear CCD
- Multiple film format

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EPSON Stylus 2200P

- USB/Serial Port
- PC or Mac
- 6 Color Smart Archival Links

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EPSON Stylus 1280

- Smudge Free Inks
- PC or Mac

\$399⁹⁹

OLYMPUS P400

- Dye-Sublimation
- 314 dpi Res.
- LCD Panel for Previewing

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- Custom Oxford911 Bridge Solution
- Sustained Data Rates up to over 40 Megs/second
- Two 6 Pin FireWire 1394a FW400 Ports
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- (1) 6 to 6 FireWire and (1) USB 2.0/1.1 36" connecting cables

Standard features for the Mercury Elite Pro FW800 + USB:

- Custom Oxford922 Bridge Solution
- Sustained Data Rates up to over 55 Megs/second
- Fully backward compatible to FW400 1394a
- Two 9 Pin FireWire 1394b FW800 Ports
- One 6 Pin FireWire 1394a FW400 Port
- One standard USB 2.0/1.1 Port
- (1) 9 to 9 pin FW800, (1) 6 to 6 pin FW400 and (1) USB 2.0/1.1 36" connecting cables

James Coates of the Chicago Tribune:

"Mac users likely will just break into smiles when they plug this high speed hard drive into the FireWire ports on their machines."

MyMac.com review 5 out of 5

Charles Carr from Computer Edge about buying an OWC Mercury drive: "You'll probably be happy you did." 4 out of 5. "The Elite is ideal for professionals and consumers who need convenient, portable storage for large amounts of data."



	FW400 + USB2.0/1.1	Elite FW800 + USB2.0/1.1
40GB 7200RPM 2MB	\$149.99	N/A
80GB 7200RPM 2MB	\$179.99	\$249.99
120GB 7200RPM 2MB	\$209.99	\$279.99
120GB 7200RPM 8MB	\$229.99	\$299.99
160GB 7200RPM 8MB	\$269.99	\$339.99
180GB 7200RPM 8MB	\$299.99	\$359.99
200GB 7200RPM 8MB	\$329.99	\$399.99
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Up to 80 gigs that fits in a shirt pocket!

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Drive may be powered by FireWire Bus or with included power adapter.



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40GB 4200rpm 2MB	\$209.97	\$219.99
40GB 5400rpm 8MB	\$229.97	\$239.99
60GB 4200rpm 2MB	\$279.97	\$289.99
60GB 5400rpm 16MB	\$349.97	\$359.99
80GB 4200rpm 8MB	\$389.97	\$399.99



MacSofa: "It fits right in with the Mac look and is super silent and easy to set-up - you couldn't ask for a better drive! Mercury Elite receives a perfect score!"



OWC Mercury CD/CD-R/CD-RW - DVD/DVD-R/DVD-RW - FireWire + USB 2.0/1.1

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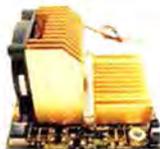
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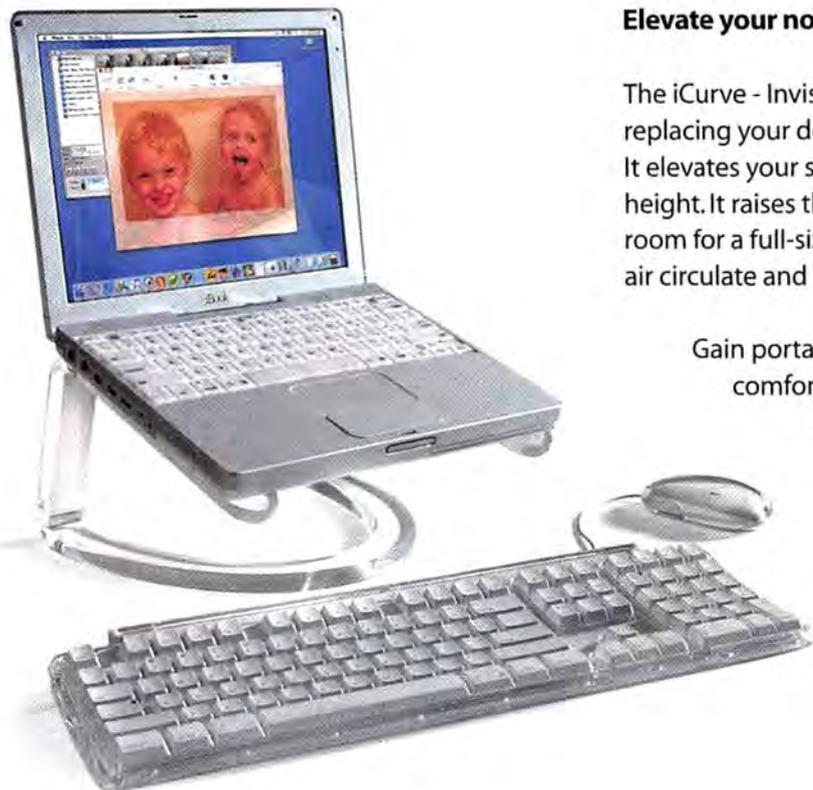
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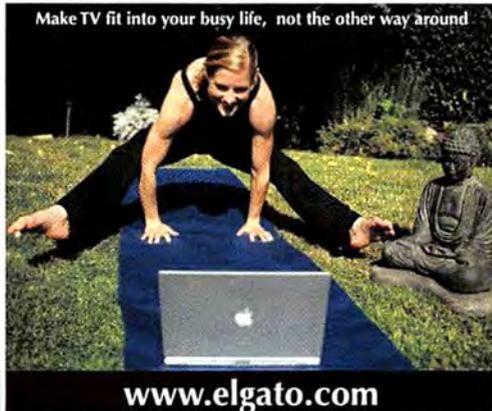
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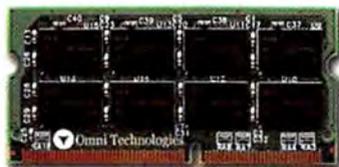
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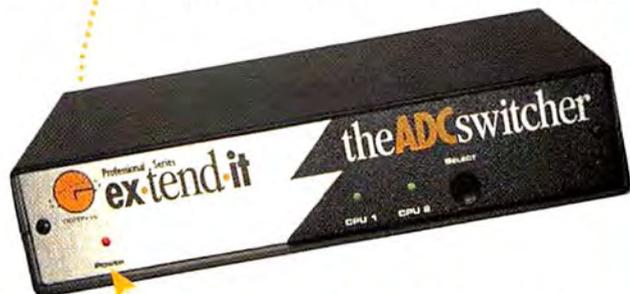
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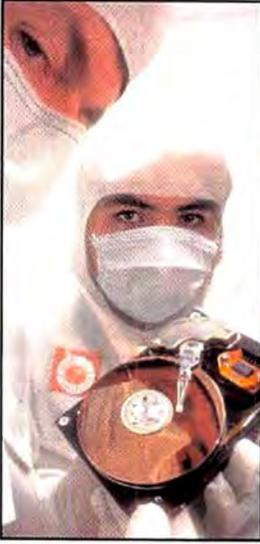
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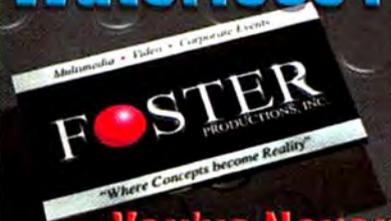
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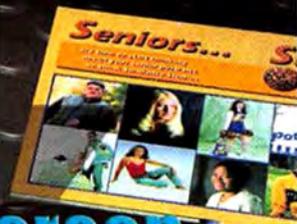


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THE BIG PICTURE

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Futility Software

Sadly, any "Mac OS X for Intel" release would be utterly useless out of the box. Every existing OS X program is compiled for the PowerPC processor, and an Intel-based PowerPC emulator would be impossibly slow. Intel chips aren't *that* much faster.

Instead, the developers of every OS X application would need to rebuild their programs for this new operating system. And then they'd have to test their programs on different PC hardware. You could expect to pony up for another upgrade, because the cost of rebuilding, testing, and distributing new software would add up fast.

Many developers wouldn't even bother, since all Mac-compatible computers would also be Windows-compatible. (If Mac OS ran on commodity PCs, then those boxes would run both Apple's and Microsoft's operating systems. Apple would have to follow suit to remain competitive.)

Moving to Intel chips is not an upgrade strategy. It's an exit strategy.

The new developer math: "If I write for Windows, I reach all PC-compatible users, even Apple's new customers. If I write for OS X, I reach fewer buyers. If I write for both, I don't reach any more people, and it costs me a lot more. So I'll write for Windows and tell Apple owners to boot into Windows to use my software." Developers that currently support both platforms could save a boatload of money by dropping Mac OS development altogether—and most executives like saving money.

Abandoning the PowerPC for Intel chips is not an upgrade strategy. It's an exit strategy.

Like a Bad Penny

You can forgive PC users for wanting Apple hardware or software on their desktops without having to give up the Windows security blanket. It's harder to fathom paid "experts" trying to foist such effluvia off as insightful analysis—until you notice that if Apple self-destructed like this, their jobs would be a lot easier.

Apple's unique hardware-and-software combination makes it unlike any other company in the computer industry. It's not Dell or Microsoft or Sun. Understanding this unique company requires plenty of attention and diligent thinking—trying to force Apple into an existing category is too easy. All this Pentium Envy isn't being generated for the betterment of Mac users—its purpose is to make Apple fit someone else's narrow worldview. Don't let them get away with it. □

MATT DEATHERAGE is the publisher of MDJ and MWJ, Macintosh newsletters available through www.macjournals.com. He has some advice for people who want Apple technology on commodity PCs: "Get used to disappointment."

Switching to Intel: Bad for Apple, Good for Pundits

Pentium Envy

AS SURE AS THE SUN RISES IN THE EAST, AND AS SURE AS there will always be an England, someone will waste your time this year trying to convince you that Apple's destiny lies with Intel-compatible processors.

If you look closely, you'll notice that the people making this case are rarely Mac users—instead, they already have Intel PCs or want to buy a stylish Apple PC to run Windows on.

In the media, it's usually a pundit or analyst trying to stir up trouble or gain publicity—and it always works: every time one of these crackpots makes this nonsensical claim, other media outlets duly report it, inserting thoughtful comments such as “That could work” or “This makes a lot of sense.” Apple support for Intel processors makes sense for Intel, for other PC makers, and for some PC users. But they never tell you that it makes no sense for Apple—and it never has.

Bursting the Bubble

First, forget the notion that Apple's next great success could be in making an Intel-compatible version of Mac OS X. This would succeed only in rapidly eliminating about 75 percent of Apple.

Apple Computer is a hardware company. Repeat that until it sinks in. Apple makes operating systems to sell its hardware, and it always has. In the last completed quarter, Apple booked 75 percent of its revenue, or nearly \$1.1 billion, from selling computers. Non-computer hardware, from displays to iPods, brought in another 15 percent. Every piece of software Apple sells, from iLife to Mac OS X Server to FileMaker Server, brought the company a combined \$160 million.

People who say that Apple could increase market share with an Intel-compatible operating system are talking about *operating-system* market share. But Apple is not an operating-system company, and such a change would instantly obliterate the value of Apple's hardware, because you could get the power and glory of OS X on a cheap beige-box PC.

“But Apple will sell so many copies of a PC-compatible OS that it won't matter,” say the folks who want Safari on their PCs. That's bilge. Apple's gross margins are among the highest in the industry. On average, the company earns about a \$350 profit per computer, more if AppleCare or an Apple display is sold with it. The amount Apple would make selling a boxed copy of OS X for Intel—say, \$100—simply wouldn't measure up.

And in this scenario, the more copies of an Intel-compatible OS X Apple sold, the fewer people would

need to buy Apple hardware, and the less money Apple would make. If Apple's hardware sales fell by half, the company would have to sell more than a million copies of an Intel-based Mac OS every quarter just to tread water. Any less, and the company would shrink—and Wall Street pretty much wants technology companies to grow.

Pretty soon, a huge percentage of Apple's revenue would just be gone. The retail stores, the stores within stores, and the shelf space would all vanish without hardware sales to justify their existence. Apple could stay in the game only by increasing its operating-system share many times over, by perhaps as much as 20 or 30 percent. That sounds really good, but there's just no evidence it would happen. Visions of “Mac OS X for Intel” making major inroads against Windows simply because it's a better operating system are fantasies. The Mac has *always* been better than Windows. But which platform has the dominant market share?

Such a major shift should be based on evidence, not on wishes for market validation. Hope is not a strategy.

No Hardware, Either

The folks who realize that Apple is not an OS company sometimes propose that Apple “switch” to Intel processors for speed and economies of scale, but rig its OS to run only on Apple-branded hardware.

That's a laugher: OS X's entire core already runs on standard PCs. It's called Darwin, and its source code is freely available. Anyone could take a PC-compatible Mac OS installation disc, copy the Mac OS parts on top of the Darwin core, and be done with it. Warding off such mojo would require re-engineering the entire Darwin layer and eliminating Apple's open-source philosophy—two great ideas that Apple's engineering management is far too vested in to give up.

Even if Apple did find a way to limit an Intel-compatible version of OS X to Apple-made hardware, the Internet release of clever patches that allowed you to run OS X on any PC would be slowed only by about two hours (three, tops).

Mac OS X on Intel chips would surely succeed . . . in rapidly eliminating about 75 percent of Apple.

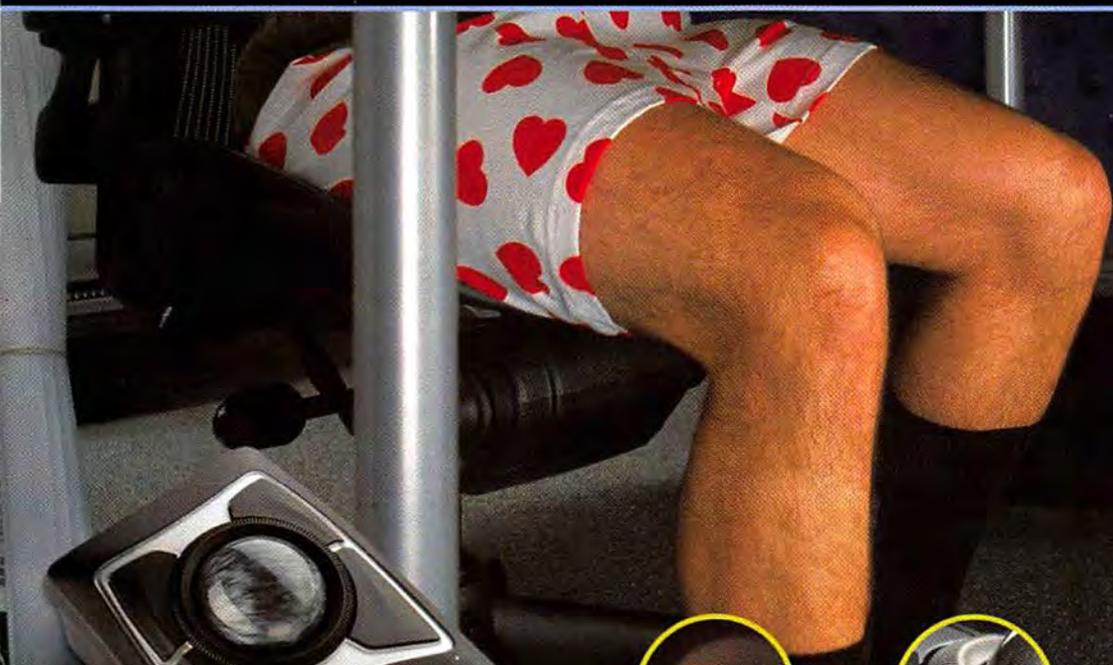


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