

STEVE JOBS: EXCLUSIVE INTERVIEW

"APPLE IS SETTING THE DIRECTION FOR THE WHOLE INDUSTRY—AND THAT'S WHERE WE LIKE TO BE." p. 62

macworld

The Mac Product Experts | www.macworld.com | February 2004



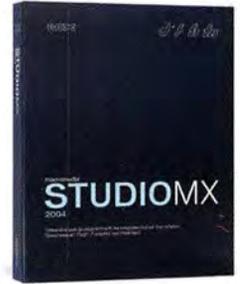
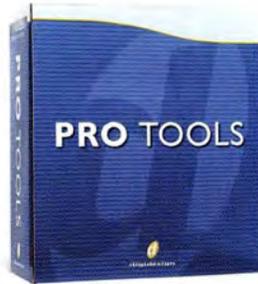
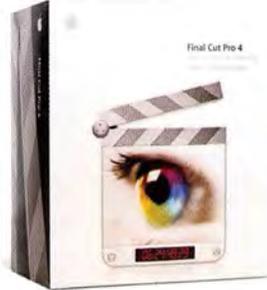
THE MAC TURNS

20



SIMPLY THE BEST OUR ANNUAL EDITORS' CHOICE AWARDS FOR TOP PRODUCTS

REVIEWED ADOBE CREATIVE SUITE | PHOTO PRINTERS



All the pieces are in place. Mac OS® X Panther™ is here. The applications are here. And so is the world's first



64-bit personal computer – the new Power Mac® G5. It's everything you've been waiting for. And then some.

DIGITAL TIME MACHINE

Nikon's **NEW COOLSCAN** film scanners breathe new life into old photos and break new ground in quality and efficiency.



Nikon's COOLSCAN film scanners bring back the memories, reviving old and worn photos with new luster.

It would be a wish fulfilled if, as the saying goes, we could put time in a bottle, capturing and then preserving the most precious moments of our lives. But while physicists haven't yet figured out how to do so, Nikon has introduced three new film scanners that capture the essence of this wish—a sort of "time machine."

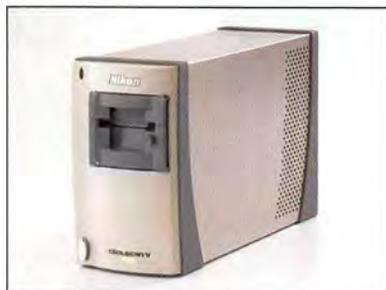
In fact, these film scanners from Nikon—the world leader in desktop film scanning—can actually restore

the luster and sharpness of photographic memories that have been long worn down by time and age. With unique, easy-to-use software, users can strip away the ravages of time from old and worn photos, producing razor-sharp images that look like they were shot yesterday.

The new Nikon film scanner lineup gives all buyers—from first-time users to professional photographers to film labs—the most versatile film scanning

solutions available. Now, users can capture the finest details in their scanned images while restoring those details they may have thought were long gone in older photos. One look at the before-and-after photos shown here is proof positive.

Included in this innovative line of film scanners is the economical, friendly, high-performance COOLSCAN V ED for amateur photographers as well as personal



Nikon
COOLSCAN V ED



Nikon
SUPER
COOLSCAN 5000 ED



Nikon
SUPER
COOLSCAN 9000 ED



Image enhancement technology in the Nikon COOLSCAN film scanners brings out the best in photo images.

and business Web page designers; the SUPER COOLSCAN 5000 ED, targeting business users such as professional photographers and photo finishers; and the multiformat SUPER COOLSCAN 9000 ED, for high-end use, with a capability of scanning film as large as 6 x 9 cm. All three film scanners feature exclusive Nikon technology and advanced software that combine to speedily produce high-resolution scans with surprising ease of use.

IT'S ALL ABOUT HIGH-QUALITY LENSES

In any film scanner, as with any camera, the most critical element for producing the highest-quality scans is the lens. All three of Nikon's new film scanners feature exclusive Scanner Nikkor ED (for Extra-low Dispersion) glass lenses. These lenses deliver superior edge-to-edge sharpness and clarity, high definition and contrast, and the truest color fidelity available.

With Nikon's exclusive LED technology embedded in these film scanners, there is no lamp replacement, no warm-up time, and no risk of heat-related damage to films. Nikon's Color Management System allows data to be manipulated in multiple RGB color spaces, which translates into highly precise color accuracy. And all three film scanners produce true optical resolution of 4000 DPI.

In addition, all three film scanners come equipped with Digital ICE[™] Advanced Image Enhancement technology, which is actually four image-correction technologies in one pack-

age. These technologies allow users to easily remove dust and scratches, restore deteriorated colors, reduce graininess, and expose long-hidden details in shadowy areas of an image. Together they become a powerful combination for restoring vintage photos and images to their original brilliance and sharpness.

SPECIAL FEATURES FOR SPECIAL NEEDS

Each of the three film scanners provides features and functions specific to the needs of users. The COOLSCAN V ED is designed so that even first-time users will have no problem producing high-quality scans in only 38 seconds, including image transfer and display time. Using the COOLSCAN V ED involves nothing more complicated than setting the film to be scanned, performing a one-touch image preview, and clicking the SCAN button. Further, a high-speed USB 2.0 interface makes image transfer quick and simple.

Designed from the ground up for imaging professionals, the SUPER COOLSCAN 5000 ED is welcome news for users who deal with numerous slide mounts and uncut film rolls. In just 20 seconds, users can scan an image from 35mm film, and do so with true-color reproduction offered by the scanner's 16-bit A/D converter and 16-bit output channel. Affordable accessories that automate the batch scanning process include a slide feeder, roll film adapter, and IX-240 film adapter, and offer scanning

Introducing the Powerful Nikon Scan 4 Software



Seeing is believing. The original image on top has been dramatically improved by the work of Nikon's COOLSCAN film scanner featuring Nikon Scan 4 software, which automatically adjusts brightness and contrast to enhance detail in the image. Other significant improvements to Nikon Scan include:

- Administrator accounts not required for operation
- Automatic device registration
- Color Management System complies with ICC version 4 standards
- Scan Image Enhancer

efficiencies that make the COOLSCAN 5000 ED the ideal archiving solution.

For high-end scanning chores, the SUPER COOLSCAN 9000 ED makes quick and super-high-quality work of image scanning from a broad array of film types, including 16 mm, 120/220, electron microscope images, and more. The SUPER COOLSCAN 9000 ED also features Digital ICE[™] Professional, compatible with Kodachrome film.

» For more information on this innovative and exciting lineup of film scanners from the world leader in desktop film scanning, visit www.nikoncoolscan.com.



Macworld

REVIEWS

OPINION

9 From the Editor's Desk

JASON SNELL

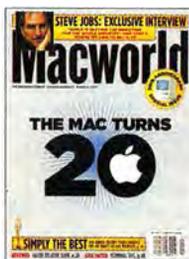
Has it really been 20 years?

14 Feedback

Readers respond.

MAC BEAT

16 USB 2.0, Adobe Co-Author, Mac predictions for 2004, the latest in mice and trackballs, AirPort's Wi-Fi Protected Access support, and a guide to OS X fixes.



On the Cover
 Steve Jobs photo by Michael O'Neill/Corbis (courtesy of Apple Computer); Macintosh 128K and Eddy Award photographs by Peter Belanger; digital retouching by Farnsworth Design

26 Design software

- ★★★★ GoLive CS
- ★★★★½ Illustrator CS
- ★★★★ InDesign CS
- ★★★★½ Photoshop CS

34 Font-management software

- ★★★★ Suitcase X1

36 Photo printers

- ★★★★ Canon i900D
- ★★★★½ Canon i960
- ★★★★ Epson Stylus Photo R300
- ★★★★½ Hewlett-Packard Photosmart 7960
- ★★ Lexmark Z705
- ★★ Olympus P-440

38 Illustration software

- ★★★★½ Canvas 9 Professional Edition

40 Software-development program

- ★★★★ Revolution 2.1

41 Digital SLR camera

- ★★★★½ Canon Digital Rebel

42 Image-editing application

- ★★ PhotoEdit 1.3

43 Scanner

- ★★★★½ Hewlett-Packard Scanjet 4670

53 The Game Room

PETER COHEN

Halo finally comes to the Mac. Was it worth the wait? We also review Warrior Kings, Dr Blob's Organism, and Hollow Ground, and we take a look at the upcoming ToySight.

59 Mac Gems

DAN FRAKES

Play all types of audio and video files, record from your iSight, scroll faster with your keyboard, use AvantGo in OS X, and more.



The Virtual CD

Macworld CD-ROM is now available online at <http://cd.macworld.com/2004/02/w873962/>.

COVER STORY

62 20 Years of the Mac

In 2004, Apple made history with the release of the Macintosh. We take a look back at the achievements of the last 20 years, and Mac visionaries reflect on the Mac's influence. Plus, our editor in chief, Jason Snell, discusses the Mac's past, present, and future with Apple CEO Steve Jobs.

FEATURE

74 The 19th Annual Editors' Choice Awards

Once again, it's time to honor the best Mac hardware and software of the past 12 months.



20 YEARS OF THE MAC

SECRETS

80 WORKING MAC Corral Your Contacts

[CHRISTOPHER BREEN](#)

Are your contacts stored in multiple programs and strewn among Macs, mobile phones, Palms, and iPods? Keep them organized with these tips.

82 DIGITAL HUB Animate Your World

[JIM HEID](#)

With inexpensive software and a camcorder or Web cam, you can create dramatic and entertaining movies—no actors necessary!

84 CREATE Playing Live

[CHRISTOPHER BREEN](#)

Live 3.0 lets you create fun and dynamic musical scores, from ambient backgrounds to an entire night's worth of music.

86 MOBILE MAC Two-Mac E-mail Shuffle

[SHELLY BRISBIN](#)

When you have multiple Macs, managing your e-mail can be a royal pain. Here's how to keep track of your mail at home and on the road.

88 GEEK FACTOR Terminal's New Twist

[KIRK McELHEARN](#)

The bash shell is the default for new user accounts in Panther. Discover how to use the differences between the old and new shells to your advantage.

90 HELP DESK Mac OS X Hints

[ROB GRIFFITHS](#)

Learn hidden keyboard shortcuts, recover a lost Sticky note, enable Safari's debug menu, rebuild Mail's index files, and get rid of the Dock.

92 Mac 911

[CHRISTOPHER BREEN](#)

The Panther version of Mail can make your life much easier. Remove attachments, control font size, create rules, empty the Junk folder, and more.

BACK PAGE

128 Hot Stuff

Check out our editors' favorite developments of the month.



The Ultimate Mac Vacation/Conference Experience

The cruise rates (per person) are quite reasonable:

Standard Inside: \$799

Standard Outside: \$949

Outside w/ Balcony: \$1099

Mini Suite: \$1199

(Subject to change)

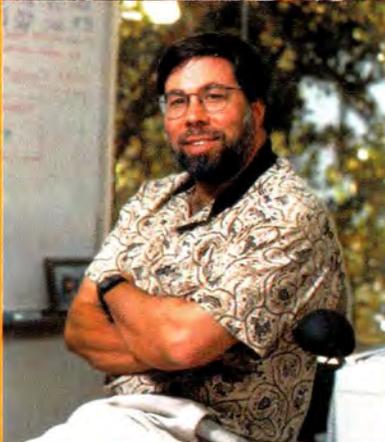
Taxes are \$176 per person

The conference fee is \$795

Courses on: iPhoto, iMovie, iTunes, iDVD, iChat, AppleScript, Sherlock, Photoshop, InDesign, Illustrator, Premiere, FileMaker, DreamWeaver, Final Cut Pro, Keynote, Mac OS X Secrets, Font Mysteries, and more!

Speakers: Jesse Feiler, Laura Gutman, Janet Hill, Leo Laporte, Deke McClelland, David Pogue, Mark L. Rubinstein, Joe Schorr, Jason Snell, Sal Soghoian, and Steve Wozniak

Geek Cruises: Education That Takes You Places



NOVEMBER 7-14, 2004

MacMania III

To learn more see us online at www.geekcruises.com/home/mm3_home.html



DAY	PORT	ARRIVE	DEPART
Sun., Nov. 7, 2004	Ft. Lauderdale, Florida		5:00 pm
Mon., Nov. 8, 2004	Nassau, Bahamas	7:00 am	Noon
Tues., Nov. 9, 2004	Cruising the Caribbean Sea		
Wed., Nov. 10, 2004	Philipsburg, St. Maarten	10:00 am	6:00 pm
Thurs., Nov. 11, 2004	Road Town, Tortola	7:00 am	4:00 pm
Fri., Nov. 12, 2004	Cruising the Caribbean Sea		
Sat., Nov. 13, 2004	Half Moon Cay, Bahamas	8:00 am	4:00 pm
Sun., Nov. 14, 2004	Ft. Lauderdale, Florida	8:00 am	

CO-PRODUCED BY:

Macworld
THE MAC PRODUCT EXPERTS

 **geekcruises.com**
EDUCATION THAT TAKES YOU PLACES

Nena craves the flavor of **Bordeaux**

The image displays a computer interface with several windows. The 'Suitcase' window shows a list of fonts: Catalog, Digital Fonts, Anisette-Black.bmap, Exocet Light.t1, Lunatix.t1, Magneto.t1, Matrix.t1, Schmutz ICG Corroded, New DM Campaign, Packaging, Project 23-19, Sans Serif, and Spring Brochure. The 'QuickType' window shows the word 'Bordeaux' in four different fonts: SarahScript, Zapfino, and Edwardian Script. The 'Quick Find' search bar is visible at the top right of the interface.

Suitcase X1 | www.extensis.com/X1

Extensis™

© 2003 Extensis, Inc., a Celartem Company. All rights reserved.

Choose 68 at www.macworld.com/getinfo



Twenty-Twenty Vision

A LITTLE MORE THAN 20 YEARS AGO, WHEN THE MAC WAS just a glimmer in the eye of the original Macintosh production team, the computer world was a much less inviting place. To run a computer meant to

enter a series of obscure commands on a keyboard and wait for text results to scroll across your screen. Then, on a fateful day in early 1984, Apple unveiled the Macintosh, and everything changed.

Many *Macworld* readers undoubtedly remember buying that first Mac model. But the moment you realized you had to use the Mac (no matter what operating system the rest of the world was pushing on you) could have come at any point during the past 20 years. As much as the Mac has evolved since its debut, its role as a unique alternative to the rest of the computer world has never changed. (Our celebration of the Mac's twentieth anniversary begins on page 62.)

The Mac didn't much impress me when I first encountered it: I saw one, running some sort of arcade-style game, at the 1985 West Coast Computer Faire. The graphics looked great, but they couldn't match the color of the games on my Apple IIe. It wasn't until the fall of 1989 that I gripped the mouse attached to a Mac SE in the offices of my college newspaper and loaded up Aldus PageMaker. Then I was lost forever to a world of menu bars, double-clicks, and control panels. So that's my Mac story. What's yours? Share it in our forums (www.macworld.com/forums).

Apple, Adobe, Canon, Epson, and other heavyweights are certainly well represented, but they're sharing space with smaller developers such as Coolatoola, Ranchero Software, and Salling Software. And while our Hardware Product of the Year statue will be presented to duly designated representatives of Apple Computer, the Software Product of the Year will be in the hands of a single person: Michael Tsai, the creator of SpamSieve, an incredibly valuable e-mail-filtering tool.

A CD for Everyone

For several years now, a CD-ROM has accompanied newsstand editions of *Macworld*. For various reasons, ranging from logistics to prohibitive costs, we're unable to send that CD out to subscribers. But we're happy to offer the next-best thing. If you've got a broadband Internet connection, you can get a Web-based copy of the CD. Subscribers can view this month's CD, including video tips from Christopher Breen and excerpts from our very first issue, at cd.macworld.com/2004/02/w873962. □

Best of the Best

Also celebrated in this issue are the best products of the past year—the winners of our 19th annual Editors' Choice Awards. Our editors and contributors have surveyed the entire Mac market and found 35 products deserving of the Mac's highest honors. In a departure from previous years, however, we've eliminated the practice of listing runners-up, which invariably led to two-thirds of our Eddy honorees grumbling about how it was just an honor to be nominated. This year, we've increased the overall number of award winners and simplified the process: if you see a product in the Eddy Awards story (page 74), that's because it *is* a winner, and there's a (surprisingly heavy) bronze statue out there with that product's name engraved on it.

Over the past few years, the Eddy winners have come to reflect the areas producing the most innovation, and the hands-down coolest products around. That's why we're not handing out awards to just the big shots.

ABOUT THIS MACWORLD

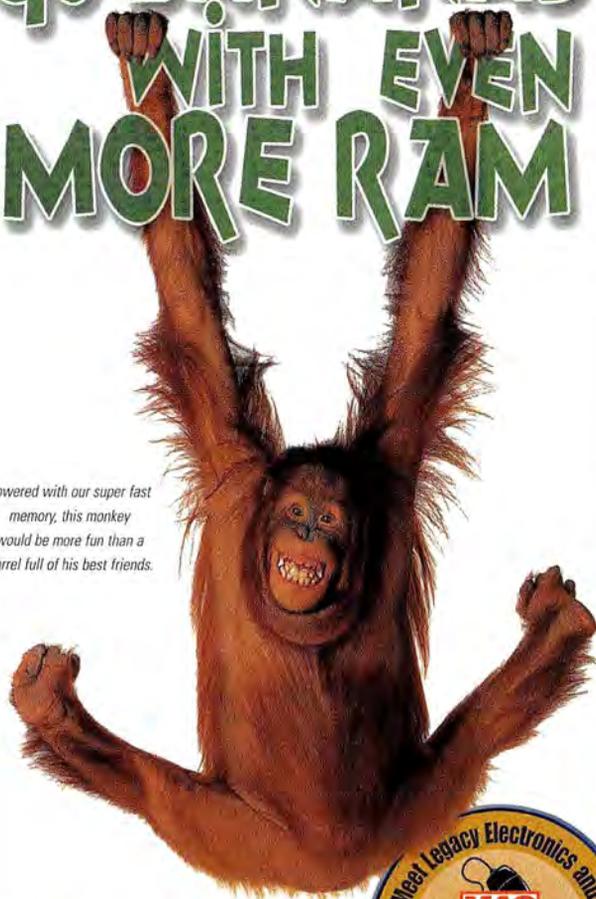


Putting together our 20th anniversary issue put us in a nostalgic mood. In "20 Years of the Mac," *Macworld* editors recall some of their favorite Mac products and memories—but we also had to dig up actual old Macs for the accompanying photos in our magazine. We pulled an original Mac, a Mac IIci, a PowerBook 160, a Newton, a MessagePad 120, and even an old Apple II floppy disk out of our editor in chief's crowded garage. And he's not the only Mac pack rat cluttering up our offices: Senior News Editor Philip Michaels still has his battle-scarred PowerBook 145 (both pictured here) from 1994, sitting around the office, for the day he finds enough time to open its shell and extract the ancient Word files that populate its fragile hard drive.

Whether the Mac's 20th birthday has you feeling festive or our Eddy Award choices have you feeling feisty, I'd love to hear from you. E-mail me at jason_snell@macworld.com or visit our online forums at www.macworld.com/forums.

GO BANANAS WITH EVEN MORE RAM

Powered with our super fast memory, this monkey would be more fun than a barrel full of his best friends.



Maximize your Mac.

Visit us at EXPO 2004 to upgrade your Mac and get the most out of your applications and system performance.

TODAY. TOMORROW. NEXT MONTH. NEXT YEAR.

Legacy memory modules are **designed, built and tested on site** to ensure that the product you buy from us today will be the same high quality product you get tomorrow, next week, next month and year after year.



512 MB
DDR 400 DIMM
PC3200

COUNT ON QUALITY
EXPECT INNOVATION

LEGACY
ELECTRONICS, INC.

www.legacyelectronics.com

For more information call toll free at 888-466-3853



Macworld

President Rick LePage
 Editor in Chief Jason Snell
 Executive Editor Jennifer Werner
 Managing Editor Charles Purdy
 Senior How-to Editor Terri Stone
 Senior News Editor Philip Michaels
 Senior Reviews Editor Jennifer Berger
 Senior Editor Scholle Sawyer McFarland
 Test Manager, Macworld Lab James Galbraith
 Senior Associate Editors Kelly Lunsford, Jonathan Self
 Associate Editor Jackie Dove
 Copy Editor Sue Voelkel

Contributing Editors David Blatner, Henry Bortman, Christopher Breen, Adam C. Engst, Dan Frakes, Bruce Fraser, Rob Griffiths, Jim Heid, Andy Ihnatko, Ted Landau, Deke McClelland, Tom Negrino, David Pogue, Stephan Somogyi, Franklin N. Tessler

Art Director Jennifer Steele
 Senior Designer Amy Helin
 Contributing Designer John Farnsworth
 Cover Consultant Susan Scandrett

Editor, Online Jim Dalrymple
 Senior Editor, Macworld.com David Leishman
 Senior Editors, MacCentral.com Peter Cohen, Dennis Sellers

International Editors Matthew J.C. Powell, Australia; Bernard Le Du, France; Sebastian Hirsch, Germany; Enrico Lotti, Italy; Yoshio Moriya, Japan; Krzysztof Pietrasik, Poland; Daniel de Blas, Spain; Nils Holmlöv, Sweden; Engin Gedik, Turkey; Simon Jary, United Kingdom

VP/Chief Operating Officer Stephen Daniels
 Director of Finance Eos de Feminis
 Accounting Coordinator Ronda Bittner
 VP of Human Resources Kate Coldwell
 Senior Human Resources Representative Julie McKie
 Human Resources Coordinator Jenny Steele
 IT Director Sean Greathouse

Publisher Cynthia Ramsey (973/228-3074)
 National Accounts Manager Paul Bonarrigo (508/533-4020)
 Western Advertising Director Sara Culley (831/438-8408)
 Account Executive Franck Zamora (415/243-3628)
 Showcase Account Manager Niki Stranz (415/243-3664)
 Showcase Account Manager Carol Johnstone (415/243-3691)
 Online Sales Manager Doug Detlefsen (415/243-3598)
 Online Account Executive Rachel Desjardins (415/267-4562)
 Marketing Manager Kasey MacMullen (415/243-3642)
 Administrative/Marketing Asst. Amanda Cartier (415/243-3380)

Production Director Steve Spingola
 Prepress Manager Mark Frischman
 Booking and Billing Manager Ricardo Sandoval
 Production Coordinator Megan Matteoni

Online Production Manager Ron Neal
 VP, Consumer Marketing Shawne Burke Pecar
 Associate Circulation Director David Cobb
 Director, Retention Marketing Lisa Radler
 Senior Subscription Marketing Manager Linda Trinh
 Subscription Marketing Manager Simon Thaler
 Assistant Manager, Retention Marketing Christine Chapman
 Newsstand Consultant George Clark

February 2004, Volume 21, Issue 2
 Macworld is a publication of Mac Publishing, L.L.C., and International Data Group, Inc. Macworld is an independent journal not affiliated with Apple Computer, Inc. Copyright © 2004, Mac Publishing, L.L.C. All rights reserved. Macworld, the Macworld logo, Macworld Lab, the mouse-ratings logo, MacCentral.com, PriceGrabber, and Mac Developer Journal are registered trademarks of International Data Group, Inc., and used under license by Mac Publishing, L.L.C. Apple, the Apple logo, Mac, and Macintosh are registered trademarks of Apple Computer, Inc. Printed in the United States of America.

IDG
INTERNATIONAL DATA GROUP



Some people need a lot of extra space.

Monitors. Servers. Souvenirs from your trip to Ohio. Assorted whatever. You need room and Anthro will give it to you, now and in the future. Because all our furniture can be reconfigured anytime to fit any space. Contact our helpful folks and get the Anthro furniture that's right for you. And all your whatever. Anthro.com or 800-325-3841.


ANTHRO
TECHNOLOGY FURNITURE®



The most evolved computers now have multi-functions and printers to match...



COLOR LASER
From \$999



LASER PRINTING
From \$199



WORKGROUP LASER PRINTING
From \$449



COLOR FLATBED MFC
From \$179



LASER FLATBED MFC
From \$299



LASER MFC
From \$249



COLOR MFC
From \$129



When it comes to imaging solutions that are every bit as innovative as your Mac, we're the only name you need to know.

That's because our award-winning line of Mac-compatible printers and Multi-Function Center® models are designed to deliver both maximum performance and value.

From our full line of high-quality printers (including the HL-5070N, the first printer to support Rendezvous™), to versatile all-in-one multi-function units which print, copy, scan, and more, you'll find our products are every bit as evolved as our customers.

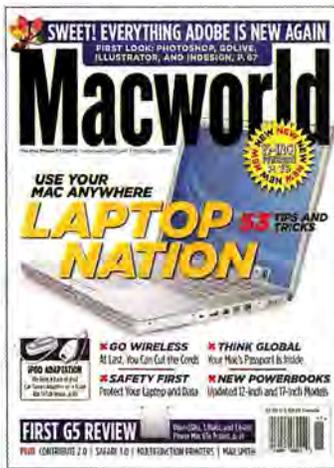
A VARIETY OF MODELS AVAILABLE AT: MacWarehouse, MacMall, MacConnection, MacZone, Microcenter, CDW, Office Depot, Staples, OfficeMax, Fry's, J&R Computer World, and Apple Stores (or www.store.apple.com).



At your side.™
brother®

© 2002-2003 Brother International Corporation, Bridgewater, NJ. • Brother Industries Ltd., Nagoya, Japan
For more information please visit our Web site at www.brother.com • All trademarks and registered trademarks are the property of their respective owners.

Choose 91 at www.macworld.com/getinfo



FEEDBACK

Credit Where It's Due

The November issue of *Macworld* brought the debut of our new and improved *Secrets* section, as well as some changes to the overall look of the magazine. And our readers have been taking notice (thanks for your kind words). Readers also wrote to commend the new Adobe Creative Suite and to sing the praises of some iPod adapters we didn't include in our Las Vegas road-trip roundup. Not all readers wrote in with accolades, though. As always, some wrote in with helpful corrections. Our *Feedback* editors welcome both your kudos and your criticism. □

3-D Resurrection

CHUCK MEDEIROS

In response to your article about the new Adobe Creative Suite ("Adobe Changes Everything," November 2003): Illustrator's "new" 3D Effect feature seems to incorporate something Adobe abandoned years ago—namely, Adobe Dimensions. While Dimensions wasn't the most in-depth 3-D program, it had all the features I needed (image mapping, vector export, and so forth). I still use it on a regular basis to wrap images around odd shapes—such as cylinders and cones—in both Illustrator and Photoshop. I'm glad that someone at Adobe finally had the idea to resurrect this simple but powerful tool.

iPod People

MARK CUMMINGS

I like your new *Mobile Mac* section and the November installment on iPod adapters. But I noticed that you didn't include a DLO Transpod. I use a Transpod for my scroll-wheel iPod, and it works great.

My job has me traveling in different cars, and occasionally I'm in a car where the cigarette-lighter socket is in the way of the shifter, steering wheel, and so on. But the Transpod will fit in most cars. Here's a tip I learned by accident: if you always keep the backlighting on, you get less hum noise between the tracks.

As soon as I get a new iPod, a Transpod will be the first accessory I get.

Keep up the good work!

RICK ORNELAS

The authors didn't give the Griffin Technology iTrip enough of a chance in their *Mobile Mac* review. I mean, sure, they tried it in Barstow, Baker, and

Fresno, and for many miles in between, but they did not realize the true potential of the iTrip. I, too, decided to try it out for the first time on my own road trip from Santa Maria, California, to San Francisco and back. The iTrip worked like a champ. We had to change the station once in each direction, but this was quite simple. The sound quality was great and there was minimal interference. The coolest thing was that it could transmit its signal to our friends' car as well. All they had to do was pull alongside us and stay within a car's length, and voilà! It made the six-disc changer in their brand-new Ford Explorer look a little obsolete. You can't find a cooler gadget to increase the utility of your iPod.

JANE SHAPIRO

I was surprised at your conclusions in the November 2003 article on iPod adapter options. I got an Arkon SoundFeeder SF121 adapter for a drive from Sacramento, California, to San Diego, and I had pretty good luck with it. It uses FM frequencies between 88 and 95. The cassette adapters I tried were noisy.

Nothing More to Contribute

ROBERT MORRISSEY

I read your fine review of Contribute 2.0 (November 2003). I have attempted to use the trial offering of the program with my Apple .Mac account and have found Contribute 2.0 to be worthless, because it fails me in the respect that David Sawyer McFarland notes: it won't let me add QuickTime movies to my pages.

ROB BACIGALUPI

I can't believe that the Contribute 2.0 David Sawyer McFarland tested is the

same program I have. Contribute is a great idea—an inexpensive Web editor with which average users are comfortable. It is not, however, worthy of a 4.5 rating. Besides being painfully slow—it runs slower than Adobe Illustrator and Macromedia Dreamweaver—it makes Web changes a guessing game. The edit browser doesn't show text font and color, so when you publish, you have no idea what you're going to get. Tables are especially tricky. Text location in a table in the edit browser often has no relation to what you get when you publish. McFarland says Contribute couldn't be easier to use, but a WYSIWYG edit browser would make it easier!

Hey, Good-Lookin'

RYAN KLOS

Bravo on the recent changes to your magazine's *Secrets* section, including *Help Desk*. These are welcome and much-needed changes. The magazine now has a more reader-friendly approach—so goes the word around the office. I know I dig it. Keep it up and props on the clean layout. I look forward to each issue.

Safari, Not So Goodie

SANDY TATE

Safari is good, but it doesn't go far enough for me (*Reviews*, November 2003). I frequently print a page or two and find it exasperating that the URL and date do not print out as well. It's been suggested to me that I write that information on the printed page. Excuse me! Do I have a \$2,000 computer so that I have to revert to pen and paper? I would gladly sacrifice a little speed for URL information on my printed Web pages.

There Is Another Way

GRANT MUKAI



In the December 2003 *Working Mac* section, you stated in “.Mac Goodies” that Apple’s iDisk Utility for Windows XP is “the *only* way to work with an iDisk from a computer running Windows.” This is not true. I have successfully accessed an iDisk with the following process:

1. In Windows XP, open My Computer.
2. Choose Tools: Map Network Drive.
3. Click on Web Folder Or FTP Site.
4. When Windows asks for the URL, enter <http://idisk.mac.com/accountname> (*accountname* is where your .Mac member name goes).

5. When you are prompted for a user name and password, type your .Mac member name and your account password.

The disk should mount in My Computer under the category Network Drives.

You’re correct; in fact, you can also connect to another member’s iDisk Public folder by including his or her member name in the URL. If that person has set a Public-folder password, provide the password when prompted.—Dan Frakes

Teacher’s Pet

CHARLES FINN



Your review of Orbis’s Easy Grade Pro 3.6 grade-book software (November 2003), positive as it was, failed to mention some of its most useful features. Orbis makes a companion title for PDAs that lets teachers enter grades while they move around a classroom. When the teacher syncs the PDA with the computer, the assignments and grades are entered. Grade-book files are completely platform independent. Easy Grade Pro also gives you instant student rankings for a subject or assignment, as well as the freedom to create and assign specialized grading scales—with different scales for students in the same class. The software, including site licensing, is very inexpensive, with liberal allowances for use on multiple computers at home and at work. Technical support is free and fast. The company listens to its customers. Updates bring new features they’ve requested. I’ve been using Easy Grade Pro for 11 years. It’s the most valuable software on my classroom computer.

Post comments on our forums (www.macworld.com); send them by mail to Letters, Macworld, 501 Second Street, 5th Floor, San Francisco, CA 94107; or send them by e-mail to letters@macworld.com. Include a return address and daytime phone number. Due to the high volume of mail we receive, we can’t respond personally to each letter. We reserve the right to edit all letters and posts. All published letters and forum comments become the property of Macworld.

CORRECTIONS

In “Easy Mac Maintenance” (*Secrets*, December 2003), step 2 of the “Schedule Repair Permissions” section instructed users to select Task: Run Now in CronniX to test a newly scheduled event. A bug in CronniX prevents this action from working for some users. However, if you correctly followed the article’s steps, your new event should function as expected. To test it, you must wait until its scheduled execution time. For more information, go to www.danfrakes.com/writing/EasyMacMaintenance.html.

NEW! graphire³

THE RIGHT TOOL FOR ANY TASK

Starting at \$99, the Graphire pen tablet gives you the control you need to quickly and easily edit your digital photos, draw, paint, and annotate documents. Get the control of Graphire and join more than 2,000,000 satisfied Wacom® tablet users.



Photo Fun Draw & Paint Annotate

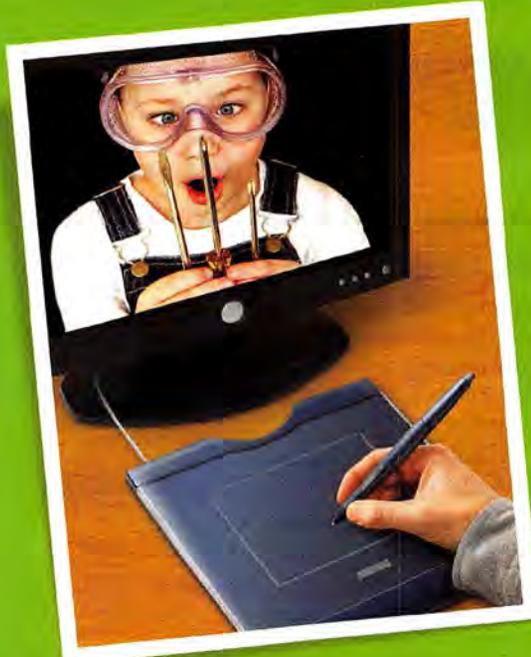
FREE CD OFFER!

Ask for the Pen Power CD today. It’s a quick video introduction to using a pen, plus some great tutorials.



visit call

www.tabletphotofun.com 800-922-2589



SOMETIMES TOOLS MAKE ALL THE DIFFERENCE

PATENTED PEN

Pressure-sensitive for control, with a built-in eraser for easy fixes. There’s no cord to tangle, no batteries to buy—ever. And it works with any software a mouse will.

CORDLESS MOUSE

No ball to clean, no cord to tangle, no batteries to buy—ever.



VALUABLE SOFTWARE

Adobe® Photoshop® Elements 1.0, Painter™ Classic by Corel®, and penPalette™ LE by nik multimedia®.



Intuos from \$199

Graphire from \$99

Cintiq from \$1899



Watch for the Penabled logo to ensure you’re getting the natural feel and superior performance of Wacom’s patented cordless and battery-free pen technology. ©2003 Wacom Technology Corporation. Wacom, Cintiq, Intuos, Graphire, and Penabled are trademarks of Wacom Company Ltd. All rights reserved. All other trademarks property of their respective owners. Offer good while supplies last, subject to change without notice. All prices are U.S. estimated street price.

mac beat

WHAT'S NEW

WHAT'S IN THE PIPELINE

WHAT'S HOT

MACWORLD LAB TESTS IMPROVED CONNECTIVITY TECHNOLOGY

The USB 2.0 Express

Connecting peripherals to your computer doesn't have to be a complicated process. Apple proved that back in 1998, when it introduced us to Universal Serial Bus technology, with the debut of the original iMac personal computer.

Unlike SCSI, USB didn't require that Mac users reboot when they wanted to add or remove a peripheral. USB also eliminated confusing connectors and troublesome software drivers (USB drivers are built into Mac OS).

There was only one problem for Mac users: USB's

pokey data-transfer speed, particularly when compared with FireWire's faster throughput. But now the wide availability of USB 2.0—the improved USB technology that PC users have enjoyed for some time—has given Mac users a taste of life in the fast lane.

How fast? As more and more USB 2.0-compatible peripherals become available, we put some of these prod-

ucts to the test, to see how much of an improvement you can expect from the new technology. But first, we should explain what kind of improvement USB 2.0 is *supposed* to provide.

USB: The Sequel

USB 1.1 products deliver transfer rates as high as 12 Mbps—USB 2.0 promises rates of up to 480 Mbps. As with FireWire, you won't see USB 2.0 reach that theoretical maximum speed due to overhead and drive constraints. But you will see serious speed gains.

By the fall of 2003, Apple had made USB 2.0 ports standard on all new models (save the eMac). USB 2.0 ports now grace the newest PowerBooks, iBooks, and Power Mac G5s, as Apple strongly backs the technology. For example, FireWire 800—the faster version of the connectivity standard long championed by Apple—isn't included on iBooks or the 12-inch PowerBook; USB 2.0 is. The growing universe of peripherals with USB 2.0 interfaces helped cement Apple's support for USB 2.0 (see "A Growing Number of Products").

But Mac users shouldn't worry about a messy standards war that will force them to make an either/or choice regarding FireWire and USB 2.0 technology. "Both standards will coexist in the Apple world," says Brian O'Rourke, senior analyst with market research firm In-Stat/MDR. "A lot of the drive makers who manufacture for Apple systems, like LaCie and Mator, make [FireWire]



A GROWING NUMBER OF PRODUCTS

Mac users with USB 2.0 ports won't have a difficult time finding products that support the faster connectivity standard. Most USB 2.0-compatible products fall under the storage category, though a growing number of peripherals and input devices also support USB 2.0. Here's a glimpse at what's out there, who makes it, and how much it costs.

CATEGORY	COMPANIES	PRICE RANGE
External CD-RW Drives	EZQuest, Fantom Drives, Iomega, LaCie, Micronet, Other World Computing, QPS	\$100-\$150
External DVD-RW Drives	EZQuest, LaCie, Micronet, QPS	\$229-\$250
External Hard Drives	Acomdata, EZQuest, Iomega, LaCie, Mator, Micronet, SmartDisk, WiebeTech	\$99-\$400
Flash Drives	Lexar, SanDisk, Verbatim	\$29-\$350
Hubs	Belkin, Iogear, Keyspan, Targus	\$35-\$60
Media Readers	Belkin, Lexar, SanDisk	\$25-\$60
Scanners	Canon, Epson, Hewlett-Packard, Microtek	\$100-\$600
Web Cams	Logitech	\$80

What It Means: Macworld's USB Glossary

USB 1.1 The original version of Universal Serial Bus data-transfer technology, it delivers data-transfer rates of 12 Mbps. The USB peripheral-bus standard was developed by a consortium of companies including Compaq, DEC, IBM, Intel, and Microsoft.

USB 2.0 The newer version of USB technology, it promises transfer rates as fast as 60 MBps (480 Mbps.) In real-life applications, you will see a huge improvement with jobs such as copying folders or files to external hard drives.

Certified USB The USB Implementers Forum, the main industry standards group, encourages peripherals vendors to label products that use USB 1.1 technology as "USB" or "Certified USB." Nonetheless, you may see some USB 1.1 products labeled "low-speed." (For more details, see http://www.usb.org/info/usb_nomenclature.) These terms all refer to the original USB. Some products, such as keyboards, joysticks, and mice will continue to use this flavor of USB, because they don't benefit from USB 2.0's faster data-transfer rates.

Hi-Speed USB "Hi-Speed USB" is the official way to refer to USB 2.0 products. Digital cameras, scanners, and CD- and DVD-burners can use this or the original USB technology. Some vendors will throw in the terms "full-speed USB 2.0" or "full-speed USB." Look for the Hi-Speed logo to ensure you're getting the faster product.

USB Hub When your system's USB ports fill up, this external device provides extra ports (between four and seven, typically) so you can keep adding USB peripherals. You can also daisy-chain multiple hubs. Some peripherals have a small built-in USB hub for convenience.

USB.org This Web site is maintained by the USB Implementers Forum. It features USB news and product information, as well as answers to frequently asked questions about the technology.

practical using USB. And that makes hooking up to a USB 2.0-connected CD and DVD burner or hard drive a viable option for Mac users.

In Macworld Lab testing with a dual-2GHz Power Mac G5, copying a 620MB folder to an external drive via USB 2.0 took 58 seconds, compared with a glacial 13:38 via USB 1.1 (see the Macworld Lab benchmark chart).

Duplicating a 300MB file to that drive took 34 seconds with USB 2.0, instead of a whopping 11:24. While FireWire 800 retains its edge as the speediest data-transfer technology for Mac users—note how it finished first in all of our benchmark testing—USB 2.0's advantage compared to the original USB is clear. "This allows Apple users to access many more peripherals than they could previously," O'Rourke says. And with more peripheral choices, feature improvements come more quickly. Plus, Mac users may see more price competition among peripheral makers—more vendors and more products to choose from means it's easier to shop around.

But don't look for USB 2.0 to replace FireWire for video tasks anytime soon. "USB is built from the ground up for handling data, in packets," O'Rourke says. "FireWire is built from the ground up for video, and to stream audio and video." If you're transferring video from a digital camcorder to your system Mac, FireWire is still hard to beat—it's built into most DV camcorders, and is more reliable as a transfer method.

But for everything else, USB 2.0 should provide a ride any Mac user would be glad to take.—LAURIANNE McLAUGHLIN

drives for Apple. I don't see external hard drives and optical drives [with FireWire connections] going away in the Apple world."

USB 2.0 simply gives Mac users more flexibility. Other than the data-transfer speed spike, there's no fundamental change to the USB technology. Older USB

peripherals will still plug into USB 2.0 ports—but will perform at the slower speed—meaning none of your old peripherals will go the way of the dinosaur.

If your OS X-powered Mac didn't come with built-in USB 2.0, don't despair. You don't necessarily have to go out and plunk down money for a new model. If you have a desktop G3 or G4 with PCI slots, you can add a slew of USB 2.0 ports by installing one PCI card. PowerBook users can take advantage of the new USB 2.0 PC slot cards to add the high-speed connections to older laptops.

Faster Speed, More Peripherals

The speed advantage of USB 2.0 means tasks like burning CDs, copying files, and transferring large chunks of data are finally

	Copy Folder to External Drive	Duplicate File on External Drive	Copy Folder from External Drive
FireWire 800	0:26	0:12	0:48
FireWire 400	0:31	0:17	0:55
USB 2.0	0:58	0:34	1:04
USB 1.1	13:38	11:24	13:41
	<Better	<Better	<Better

BEST RESULTS IN BOLD.

All results are in minutes:seconds. To test transfer speeds of each technology, we recorded how long it took a 250GB external drive, attached to a dual-2GHz Power Mac G5 running OS X 10.3.1, to complete several tasks: We copied a folder containing 620MB of files of various sizes, both to and from the external drive, and we duplicated one 300MB file on the external drive.—MACWORLD LAB TESTING BY JAMES GALBRAITH

WEB-UPDATING TOOL TAKES ON MACROMEDIA CONTRIBUTE

GoLive Has a Co-Author

Adobe GoLive CS and Macromedia Dreamweaver MX 2004 have similar strengths and weaknesses. Both are exceptionally powerful tools for professional Web designers, but they're also too complex for novices who want to make simple content changes—an update here, an added page there—to Web sites.

Last year's release of Macromedia Contribute 2 (★★★★; November 2003) gave these everyday users a simple tool for updating Web pages. Now

Editor, for GoLive CS sites (see our review of GoLive CS, page 31). Web designers must use GoLive CS to build Co-Author Sections into their sites. When defining Sections, designers create fields for the content that will later be filled in by the Co-Author user. Designers then place these Sections into the Web-page layout.

When Co-Author users want to edit a site, they go to Co-Author Editor, which lets them enter content in a form that corresponds to the Section. Unlike Contribute 2, Co-Author doesn't let coauthors change font face, size, or style (except bold and italic); it also won't let coauthors alter text alignment or add tables and lists.

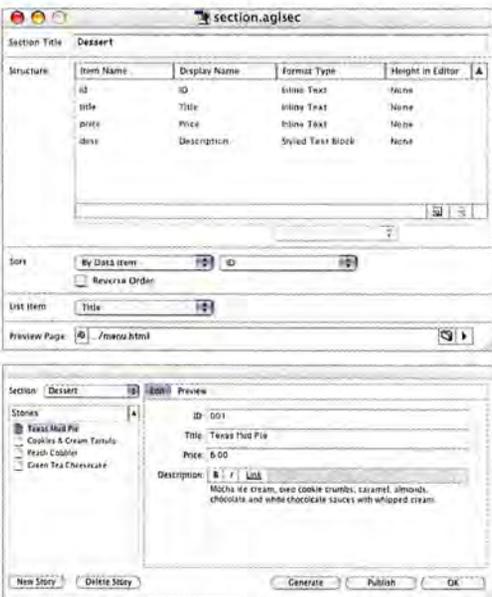
Coauthors also can't create new pages on the site; they can only fill out existing pages—a restriction that doesn't exist in Contribute, which offers a simplified Web-page editor and lets anyone build new pages from templates.

client. It doesn't matter if the client is down the hall or across the country. In contrast, Co-Author is available only to people who have a copy of the \$399 GoLive CS disc.

Each copy of GoLive CS comes with two serial numbers. Entering the regular serial number after installation gives you a copy of GoLive. Entering the Co-Author serial number turns off most of the program and provides only Co-Author Editor. If you want to deploy more seats of Co-Author throughout your organization, you can purchase additional Co-Author serial numbers from Adobe for \$89 each.

This serial-number-controlled installation means that you can't have both GoLive CS and Co-Author on the same machine (although GoLive has a copy of Co-Author Editor so designers can see how contributors will interact with the site). And while you may not mind walking down the hall to install Co-Author on other machines in your department, the chances are slim that you'll feel comfortable sending your precious GoLive CD across the country to a client.

Web designers rightly want to off-load the drudgery of minor site updates onto their clients, and those clients often want to save money by doing their own updates. Co-Author will appeal to designers who already use GoLive CS, because they can now let clients make small changes without losing any control over their sites. Co-Author's simple forms-based interface may be all a client needs to keep a site up-to-date.—TOM NEGRINO



Coauthoring Changes Designers define Co-Author sections by creating fields for the content that will be filled in later by other users (top). The Co-Author Editor interface (bottom) provides a form for entering updates.

Adobe has an offering of its own, the \$89 GoLive Co-Author, that takes a very different approach.

Co-Author's Story

Co-Author is, strictly speaking, not a separate program at all—it's a forms-based interface, called Co-Author

Contributing Differences

Contribute is compatible with Web sites created in any application (though it reaches its full potential only on sites created with Dreamweaver). Co-Author, however, works only with sites created in GoLive CS.

Contribute allows Web designers to have clients install Contribute and edit sites: they simply purchase a boxed copy of the \$99 program and e-mail the connection file to the

CO-AUTHOR AND CONTRIBUTE COMPARED

COMPANY	PRODUCT	PRICE	CONTACT	WHAT IT IS	WHO IT'S FOR
Adobe	Co-Author	\$89*	www.adobe.com	A forms-based interface for changing content on GoLive CS-built sites.	Web designers—and their clients—already using GoLive CS.
Macromedia	Contribute	\$99	www.macromedia.com	Stand-alone program for updating Web-site content.	Web-site administrators and novice site updaters.

* Price per additional license: Co-Author is also included with GoLive CS, which sells for \$399 as a stand-alone program.

The Power Mac G5. One more way to feel superior to PC users.



Epson C84

- > Border-free photo printing
- > 5760 x 1440 dpi
- > DURABrite Inks

\$99.00 Original Price
-\$20.00 Rebate¹
-\$79.00 Rebate²

EPSON

FREE Your Price
 CDW 517727



Adobe® Creative Suites Premium

- > The complete design environment for print and web publishing
- > Integrates full new versions of Adobe's award-winning applications: Adobe Photoshop CS, Adobe Illustrator CS, Adobe InDesign CS, Adobe GoLive CS, and Adobe Acrobat® 6.0 Professional, along with the productivity-enhancing Version Cue™ feature
- > An outstanding value

\$1229.00
 CDW 532135 Full



\$749.95
 CDW 543045 Upgrade from Photoshop.



Apple® PowerMac® G5

- > **FREE 512MB Memory¹**
- > 2 x 1.8GHz PowerPC™ G5 processors
- > Memory: 512MB
- > 160GB serial ATA hard drive
- > DVD-R/CD-RW SuperDrive™



Authorized Reseller

\$2495.00
 CDW 558892

AppleCare 3-year PowerMac warranty

\$249.00
 CDW 442761

Mac Warehouse has the revolutionary new Power Mac G5, along with the full line of Apple products. Plus, we have Mac-compatible printers and software from leading manufacturers like Epson and Adobe. So call our Mac experts today. They'll get you set up with the computers and accessories you need, and get them shipped out fast.

CDW | **mac**  **warehouse**

800.ALL.MACS
 macwarehouse.com

¹Free 512MB RAM (CDW 561452) after \$169.17 mail-in rebate on PowerMac G5 systems. \$40 installation fee required. Offer ends 2/29/04 or while supplies last. ²Receive \$20 Epson mail-in rebate when you purchase Epson Stylus C84 printer. Offer ends 02/28/03. ³\$79 off Epson Stylus printers with purchase of any Apple Desktop or Apple Notebook from Mac Warehouse between 10/1/03 and 02/28/03. Receive \$79 back by mail. Apple, the Apple logo, Mac, Mac OS, Power Macintosh and PowerBook are registered trademarks of Apple Computer, Inc. AirPort, iBook, iMac, iMovie and Power Mac are trademarks of Apple Computer, Inc. PowerPC™ and the PowerPC logo are trademarks of International Business Machines Corporation, used under license therefrom. FreeWire is a registered trademark of Apple Computer Corp. Customer understands that CDW is not the manufacturer of the products purchased by customer hereunder and the only warranties offered are those of the manufacturer, not CDW. All pricing is subject to change. CDW reserves the right to make adjustments to pricing, products and service offerings for reasons including, but not limited to, changing market conditions, product discontinuation, product unavailability, manufacturer price changes and errors in advertisements. All orders are subject to product availability. Therefore, CDW cannot guarantee that it will be able to fulfill customer's orders. The terms and conditions of sale are limited to those contained herein and on CDW's Web Site at CDW.com. Notice of objection to and rejection of any additional or different terms in any form delivered by customer is hereby given. © 2004 CDW Corporation MAMW 2/04

Choose 2 at www.macworld.com/getinfo

AIRPORT 3.2 ADDS WI-FI PROTECTED ACCESS SUPPORT

Securing AirPort

Wired Equivalent Privacy (WEP), the optional security feature in AirPort, could be said to have more holes than Swiss cheese—but that description might be unfair to the cheese. Security experts have found numerous



flaws in the WEP security standard. Tools readily available on the Internet can extract a WEP encryption key after observing a few minutes to a few days' worth of traffic.

Apple's release of AirPort 3.2 ends WEP woes by putting us out of its misery. The software update, which requires OS X 10.3, provides the latest industry-standard security enhancement to AirPort Extreme cards and Base Stations, with support for Wi-Fi Protected Access (WPA).

WPA enjoys wide support, and it fixes many of the flaws that made WEP crackable. WPA uses

Apple's method of entering a passphrase—a set of typed-in words or letters—that's transformed through mathematical operations into a longer encryption key. With WEP, most hardware manufacturers required that you make up and enter hexadecimal numbers or very short—and, ultimately, very weak—text keys.

Apple's update supports small networks without central login servers (a mode Apple dubs WPA Personal) and educational and corporate networks (WPA Enterprise). On WPA Enterprise networks, users log in and a key is automatically assigned to them. On small networks, users run AirPort Admin Utility and choose WPA Personal as the key type, entering a password that's 8 to 63 characters long or inventing a 64-digit hexadecimal key.

The AirPort 3.2 update doesn't cover original AirPort gear; it covers only AirPort Extreme hardware. Mac users with the 802.11b Base Station have to purchase an AirPort Extreme Base Station to bump up their security.—GLENN FLEISHMAN

UPDATES KEEP OS X 10.3 SAFE AND SECURE

Quick Fixes for Panther

Mac users who have adopted Panther benefit from its new features. But in some cases, they've been troubled by bugs and flaws, a few of which lead to lost data or compromised system security. And that leads to a bevy of problem-solving updates, which continue to arrive from Apple, via OS X's Software Update features.

Jaguar users aren't free of worry, either. Several security holes exist in OS X 10.2; however, Apple has promised to patch them up for people who haven't upgraded to Panther. For more information on these vulnerabilities, check out <http://maccentral.macworld.com/news/2003/10/29/security/>, at MacCentral.com.

As for Panther, the updates listed below are available through Software Update; new updates will appear should other problems arise. Regular downloads of Apple's OS X updates will help keep Panther purring.—DAN FRAKES

Keeping Panther in the Pink

The Problem: QuickTime Java security issue.
The Skinny: The version of QuickTime Java that OS X 10.3 installs could allow an unauthorized user to gain access to your Mac.
The Solution: Install Security Update 2003-10-28.

The Problem: Panther Terminal security issue.
The Skinny: A vulnerability in the OS X 10.3 version of Terminal could allow a user to gain access to your Mac.
The Solution: Install Security Update 2003-11-04.

The Problem: Data loss with some FireWire drives.
The Skinny: An incompatibility between OS X 10.3 and FireWire 800 drives using the Oxford 922 chip set (firmware v1.0.2) could result in data loss. (Some users have reported similar problems with FireWire 400 drives, but at press time, this problem had not been confirmed.)
The Solution: Update to OS X 10.3.1 and contact your

FireWire-drive vendor to see whether your drive requires a firmware update. If paranoia sets in, disconnect your drives before shutting down or restarting, and then reconnect them after startup.

The Problem: Data loss when using FileVault.
The Skinny: If FileVault is enabled in OS X 10.3, allowing FileVault to "reclaim disk space" when logging out could result in the corruption of preference files.
The Solution: Upgrade to OS X 10.3.1. (Upgrading prevents the problem from occurring; it won't restore corrupt preferences.)

The Problem: Xcode data corruption.
The Skinny: An issue with the Xcode IDE in the initial release of Apple's developer tools for Panther could lead to data loss when source files contain certain characters.
The Solution: Install Xcode Update 1.0.1.

GAME BEAT



Baldur's Gate II: Throne of Bhaal, from MacPlay (www.macplay.com): Role-playing game is an OS X-compatible expansion pack for Baldur's Gate II: Shadows of Amn (\$30).

Family Fun Pack, from Feral Interactive (www.feralinteractive.com): Game bundle aimed at families that like to play together combines Sim Theme Park, Sheep, Worms, Blast, and Zoombinis Island Odyssey (\$40).

NoLimits, from Mad Data Software (www.nolimitscoaster.com): Roller-coaster simulation lets users build and experience their own thrill rides (\$25).

Star Trek Elite Force II, from Aspyr Media (www.aspyr.com): First-person shooter for OS X features characters and situations inspired by the science-fiction series (\$50).—COMPILED BY PHILIP MICHAELS

MULTIMEDIA BEAT



Boris FX 7, from Boris FX (www.borifix.com): Effects-creation software features new OpenGL acceleration and faster renders for improved performance (\$595; upgrade, \$199).

MacMP3CD 1.2, from Mireth Technology (www.mireth.com): MP3 CD-creation tool adds the ability to burn and play unencrypted WMA files (\$20; upgrade, free).

MediaEdit Pro, from macXware (www.macxware.com): Video-production tool works with any DV camera or QuickTime file (\$80).

Squeezebox, from Slim Devices (www.slimdevices.com): Wireless networked MP3 player features digital-audio output, as well as an RCA connector and a 1/2-inch stereo minijack (\$299).

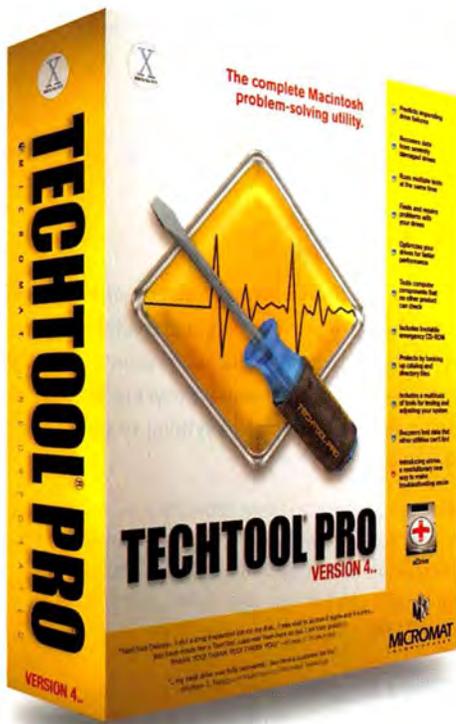
Stitcher 4.0, from Realviz (www.realviz.com): Panorama-stitching tool adds interactive QuickTime VR previewing and a Best Rendering option (\$549; upgrade, \$188).—COMPILED BY PHILIP MICHAELS

**THE POWER IS NOW YOURS!
INTRODUCING...**

TECHTOOL[®] PRO

VERSION 4

TechTool Pro includes **S.M.A.R.T.** testing, hardware tests, scheduling and alerts, performance tools, and more... even scavenges for files **when all else fails!**



NEW FEATURE! eDrive



The new **eDrive** feature allows you to add a bootable emergency volume to an existing volume. This new **eDrive** volume is created **WITHOUT** the need to initialize the current volume, keeping all data intact on the current volume. The **eDrive** is then available if something should go wrong with your normal startup volume.

Buy Now!
www.micromat.com

The Power to Recover, Repair, and Optimize - Made Easy!

COME SEE US AT BOOTH 2017

Micromat Inc. 800-829-6227 707-566-3831 info@micromat.com www.micromat.com

©2003 Micromat, Inc. All rights reserved. TechTool is a registered trademark of Micromat, Inc.

Choose 37 at www.macworld.com/getinfo

LOOKING AHEAD

CHRISTOPHER BREEN



Contributing editor and *Mac 911* answer man Breen is ever the good sport—he's been on our panel for the last four years.

ADAM C. ENGST



Contributing editor and TidBits publisher Engst predicted that Steve Jobs would become California's governor in 2002. A year after that, a similarly famous strongman took the office.

ED ROSE



Programmer and astrologer Rose wrote *Programming the 68000: Macintosh Assembly Languages*. He based forecasts on the Mac's birthday (January 24, 1984) and Jobs's (February 24, 1955).

SDIANE ADAMZ-BOGUS



Mac-using psychic Adamz-Bogus, also known as The Oracle Soul-Joiner, wrote *The Oracle of the Spirit* (call 408/615-8909 for consultations).

MACWORLD'S FOURTH ANNUAL LOOK AT THE YEAR AHEAD IN MACS

Future Fortunes

Who knows what tomorrow brings? Certainly not us. This is our fourth annual roundup of Mac-centric predictions, and with the exception of the occasional dead-on prognostication, our crystal ball routinely comes up foggy. So this year, in addition to surveying Mac observers of the present, we sought out a pair of forecasters whose expertise lies in the future—an astrologer and a psychic. We may not know exactly what the coming year holds, but if the following forecasts are anything to go by, we're in for a very interesting 2004.—MATHEW HONAN AND PHILIP MICHAELS

2004's Most Significant New Product

Breen: The dual-3GHz Power Mac G5. With the release of this bad boy—and a version of OS X that can take advantage of its processing power—Apple can claim one of the fastest personal computers on earth without resorting to overly selective benchmarking.

Engst: Unless a video iPod ships first, I'd look for a quad-processor Power Mac or Xserve in the next year.

Oracle Soul-Joiner: Maybe an Apple phone that plays music and sends e-mail and text messages. I'm seeing something about using satellite or wireless technology to work not only for communicating, but also to play music.

Rose: It doesn't take an astrologer to see that when the G5 hits its stride next year, it will open up many markets for Apple, not just their traditional ones.

the Web as a way to share information—it will be as a way to collaboratively create. Why can't a musician from Nairobi jam with a musician from the Bronx—in real time? Why can't you go to a concert with virtual musicians? Why can't the audience join in?

2004's Biggest Mac News

Breen: The iPod/iTunes combo platter will garner a lot of attention, particularly if Apple delivers a \$99 iPod that uses high-capacity removable media for storing music and data.

Engst: Might Steve Jobs be next planning to use his connections in the movie business, along with some serious new compression routines, to bring digital movies to the Mac in a big way?

Oracle Soul-Joiner: There will be a new product by April 2004 and an announcement of a merger of some kind of machinery. People are going to be mad about it. The combined effort of both manufacturers will be used to fight terrorism. [The merger product] will use satellite technology or have something to do with space travel.

Rose: Each year, the sun comes back around to the place it was at the birth of an enterprise. In 2004, the return happens on January 23rd. The core product emphasis this year will be creativity, games, and fun, but within business structures; however, that will probably not work too well. What will work is a reformulation of the Macintosh dream around Steve Jobs's original vision, but within the work world. In the next year, Steve Jobs will revitalize his dream, and that will power the Mac change. There may be an attempt at change in financial control, but it will work out well—it will force the Mac to become more true to its basic reality.

2004's Most Significant New Software

Breen: An improved version of the iTunes Music Store for Mac and Windows. Apple will offer printable cover art and liner notes, lyrics embedded in downloadable music files, and purchasable music videos.

Engst: Mac OS X 10.4, in which Apple will introduce some sweeping changes that go beyond just making the interface a bit prettier or easier to use. It could revolutionize desktop file sharing by building a peer-to-peer file-sharing engine into Mac OS to simplify LAN file sharing.

Oracle Soul-Joiner: It's not new software on the computer. It will be on a disc that will work like an ATM machine that lets people get information.

Rose: The new software will allow Mac users to use the Mac more in their work. The new emphasis won't be on

Last Year's Look Ahead

Those who fail to learn from history may be doomed to repeat it. Those who fail to predict the future are doomed to read about it a year later. Last year's panelists (see "What's in the Cards," *Mac Beat*, February 2003) may have a hard time telling you which is worse.

● Better Luck Next Year
 ● Jury's Still Out
 ● On the Nose

David Blatner, Contributing Editor	Henry Bortman, Contributing Editor	Christopher Breen, Contributing Editor	Jim Dalrymple, MacCentral.com News Director	Glenn Fleishman, Seattle Times Columnist	Bruce Fraser, Contributing Editor	Shawn King, Your Mac Life Host	Ted Landau, Contributing Editor	Tom Negrino, Contributing Editor	Stephan Somogyi, Contributing Editor	Franklin N. Tessler, Contributing Editor
<ul style="list-style-type: none"> ● Apple PDA ● QuarkXPress for OS X ● Apple buys Xerox 	<ul style="list-style-type: none"> ● Mac-controlled digital-video recorder ● Apple Web browser; Bluetooth hardware ● OS X on Intel processors 	<ul style="list-style-type: none"> ● iPhone ● Major OS X update 	<ul style="list-style-type: none"> ● QuarkXPress for OS X ● Apple integrates HyperTransport ● Market-share growth 	<ul style="list-style-type: none"> ● Quad-processor Power Macs and Xserves ● iHub software ● Improved PowerBook sales 	<ul style="list-style-type: none"> ● Power Mac G5 	<ul style="list-style-type: none"> ● Upgraded, redesigned Power Macs ● Final Cut Pro, iTunes 4, iMovie 3 	<ul style="list-style-type: none"> ● Enhanced iPod ● Power Mac G5 ● AppleWorks update ● OS X 10.3 ● Market-share growth 	<ul style="list-style-type: none"> ● Digital-video recorder ● Apple handheld Mac ● QuarkXPress for OS X ● Office 11 	<ul style="list-style-type: none"> ● PowerPC 970-based Mac ● Apple PDA ● Market-share growth 	<ul style="list-style-type: none"> ● PDA-cell phone combo ● QuarkXPress for OS X ● One of Apple's top three executives quits

KEEPS EVERYTHING MOVING.



THE LACIE MOBILE HARD DRIVE, NOW WITH 80GB OF SPACE, MOVES SONGS, DVD VIDEOS AND PHOTOS FROM YOUR TREK IN THE AUSTRALIAN OUTBACK.

WWW.LACIE.COM



LACIE

DESIGN BY F·A·PORSCHE

NEW TECHNOLOGIES, DESIGNS KEEP INPUT DEVICES FRESH

Mice That Roar

Whenever Apple introduces new desktops or laptops, Mac users are abuzz with questions about whether to upgrade. But we can safely say that the same questions aren't asked when Mac mouse and trackball makers update their products. "People in general don't think about their [mice]," concedes Ashish Arora, director of product marketing for retail pointing devices at Logitech (www.logitech.com). "To



Mouse Club Kensington, Microsoft, and Logitech are among those working on innovative input devices.

some degree, that makes [product development] exciting." And companies have proved that they are up to the challenge—they keep rolling out new products, featuring changes driven by advances in design and technology.

Parting Shots

Optical mice—input devices that rely on light and sensors instead of moving parts—have become so commonplace that mouse makers now focus on improving the technology. In the fall of 2002, Logitech introduced its MX Optical Engine in its MX series of mice. By changing image-processing power, increasing frame rates, and boosting resolution, the MX Optical Engine improves the responsiveness and accuracy of Logitech's MX mice. Likewise, Kensington (www.kensington.com) has unveiled Dia-

mond Eye, an improved optical technology of its own.

The New Way to Wireless

Mouse makers readily concede that the first wireless input devices weren't very responsive. "They were slower than corded mice in the first generation," says Ian Lombard, director of the peripherals business at Kensington. Companies have turned to updated RF technology—which is called QuickRF at Kensington, and FastRF at Logitech—to bolster performance. The improved technology makes a wireless mouse as fast as a wired plug-in, Lombard says.

But RF technology could soon give way to a new wireless connectivity standard—Bluetooth. Apple (www.apple.com) has already introduced the \$69 Apple Wireless Mouse, which can connect with Bluetooth-enabled Macs. And Belkin (www.belkin.com) offers the \$80 Bluetooth Wireless Optical Mouse.

Lifestyle Mice

Microsoft (www.microsoft.com) figures that new designs are the way to people's hearts. "Our research shows people are interested in products that reflect their [personalities], are easy to use, and offer maximum comfort and powerful performance," says Christy Hughes, a mouse product manager for Microsoft. Enter new versions of the Wireless IntelliMouse Explorer (\$55) and Wireless Optical Mouse (\$45), which come in a variety of finishes, including metallic red, platinum, periwinkle, blue, and black leather. The two models have longer battery lives and feature scroll wheels that scroll horizontally and vertically.—PHILIP MICHAELS

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

- 1 **Macworld Expo convenes at San Francisco's Moscone Center for the 20th consecutive year.** *And for the 19th consecutive year, the assembled media predict Apple's imminent doom.*
- 2 **Apple's 20-inch flat-screen iMac begins shipping.** *At the rate it's expanding, by 2022, the iMac's screen will blot out the sun.*
- 3 **Macworld editors honor the top products of the year with our annual Eddy awards.** *The awards ceremony was a tasteful, well-received affair—at least until the ill-considered, 20-minute musical tribute to Bluetooth.*
- 4 **Both houses of Congress pass antispam legislation.** *Lawmakers were swayed by thousands of e-mails demanding a stop to spam and thousands more asking them if they wanted to refinance their mortgage.*

NETWORKING BEAT



LANDesk Management Suite 8, from LANDesk Software (www.landesk.com): Updated network-management tool increases OS X support with software-license monitoring and application-policy management (\$89).

netOctopus Systems Manager 5.0, from Netopia (www.netoc.to): Multiplatform systems-administration tool adds support for OS X 10.3 (contact Netopia for pricing).

PC-Mac-Net FileShare 3.0, from Lava Software (www.lavasoft.com): Cross-platform file-sharing software adds resumable folder transfers, faster transfer speeds, and streamlined Internet file sharing (Professional Edition, \$40; Standard Edition, \$25).—COMPILED

BY PHILIP MICHAELS

PRODUCTIVITY BEAT



A Better Finder Rename 6.0, from Publicspace.net (www.publicspace.net): Contextual menu plug-in for renaming files features a new interface and new display capabilities (\$20; upgrade, free).

CipherDisk, from SubRosaSoft (www.subrosasoft.com): Security utility provides 448-bit encryption for OS X volumes (\$80).

Cumulus 6, from Canto (www.canto.com): Software for digital-asset management adds OS X compatibility for client and single-user versions (single-user, \$70; upgrade, \$50).

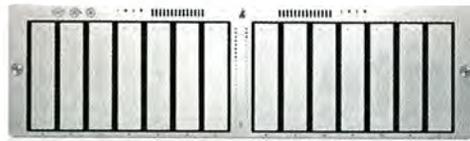
CxC, from Engineered Intelligence (www.engineeredintelligence.com): Parallel-programming software for simplifying the process of writing code that can run on clusters of computers is now OS X-compatible (\$199).

Office Applications 2.0, from BSDmall (www.bsdmall.com): Open-source office suite brings new features to the Open-Office.org project (\$50).

Project Timer Pro 1.0, from Script Software (www.scriptsoft.com): Cross-platform project-tracking and invoicing tool features multiuser support (\$50).—COMPILED

BY PHILIP MICHAELS

Industrial strength protection for industrial strength Mac users



Apple Xserve RAID



Apple Xserve



APC Smart-UPS 1000 RM 1U

Robust applications demand robust power protection...

APC Smart-UPS® and Smart-UPS® XL protect your data by supplying reliable, network-grade power in either traditional tower or rack-optimized form factors for space constrained business-critical applications. Smart-UPS® XL's are optimized for long runtime requirements and can be configured with up to 10 additional battery packs for runtimes exceeding 24 hours. Smart-UPS® RMs are available in 1, 2 and 3U sizes.

...as well as robust management.

The APC Network Management Card enables your Smart-UPS® to be managed over the network. APC's PowerChute® software provides safe system shutdown for your Xserves, while APC's Enterprise Manager provides enterprise-level management of multiple UPSs. Benefit today from APC's Legendary Reliability® with our award-winning Smart-UPS® family of UPSs. To learn more, visit us online today at www.apc.com.

APC Enterprise Manager



APC Smart-UPS® 1000 RM 1U and PowerChute® Network Shutdown software have both earned the "Built for Mac OS X" designation.



Every product carrying this mark has been tested and certified for use with InfraStruXure™ architecture. Before you buy, check for the X to guarantee product compatibility.

Because one great innovation deserves another...

Introducing InfraStruXure™ Type A, an integrated rack, power, and cooling architecture specifically designed for server rooms and other applications with up to 10 racks of equipment.



Protect your density-optimized Xserves with InfraStruXure® from APC. InfraStruXure Type A is a complete, pre-engineered system that includes these rack-optimized components:

- Network Management Card EX with Environmental Monitoring
- Rack-mount PDU with Meter
- Optimal Cable Management
- Smart-UPS® Rack-mount (1,3,4 or 5KVA and APC Symmetra® N+1 redundancy options available)
- Optimized Ventilation



InfraStruXure™

POWER RACK AIR

Open, adaptable and integrated architecture for on-demand network-critical physical infrastructure



Winner of the Communications Solutions Magazine's "2002 Product of the Year" award. Winner of the GCN "Best New Technology Award" at FOSE, March 2002, and the Windows and .Net Magazine "2002 Reader's Choice Award for Best High Availability Solution". (Awarded to PowerStruXure™, which is now included under the InfraStruXure™ brand.)

APC®
Legendary Reliability®

Register to **WIN** a Smart-UPS 1000 RM 1U UPS today!

To enter: Visit <http://promo.apcc.com> Key Code 0816y • Call 888-289-APCC x4224 • Fax 401-788-2797

For international calls, please dial 401-789-0204

REVIEWS

OUTSTANDING: 
VERY GOOD: 
GOOD: 
FLAWED: 
UNACCEPTABLE: 

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

Adobe Creative Suite

Photoshop CS

Speedy, Comprehensive New Tools
Boost Productivity and Image Quality

BY JACKIE DOVE

At the core of Adobe's Creative Suite strategy is the unity, integration, and simultaneous release of its major design applications. Photoshop CS (version 8) is a broad and deep upgrade to the company's anchor image editor. Despite its low-key presentation—its interface is almost the same as version 7's—it has amazing new tools for Photoshop's traditional users. New features, subtly sprinkled throughout the program, dramatically enhance those users' capabilities and control over their images. Photographers, artists, graphic designers, Web designers, and video specialists will see significant improvements in their images and in the imaging process, but there's no burdensome learning curve.

Powerful New Tools

In version 7, Photoshop's File Browser was an innovative central repository for images, but it was a mere palette. The new File Browser is a self-contained image-management system with swift, flexible controls and its own menus. It lets you preview, search, sort, and flag images. You can edit metadata and keywords for a single image or across images, and you can create metadata templates to apply to groups of images in a single click. You can adjust the size of thumbnails and previews, as well as drag and drop images around the window in light-box fashion.

The new Histogram palette's improvements are a revelation. It shows you tonal and color information for an image, a layer, or a selection, and it shows you channels in color with a dynamic view of how filters, levels, curves, and other adjustments will affect tonal range and bit depth. When you're making certain adjustments, the old histogram appears in gray behind the current histogram so you can see what's happening to your image. While the histogram appears to function in real time, it actually uses the image cache to produce comparative views. A click on the Cached Data Warning icon or

the Uncached Refresh button will display the real update of all pixels in the image.

Much-needed new interpolation controls—Bicubic Smoother (for upsampling) and Bicubic Sharper (for downsampling)—improve the detail of resampled images.

In the Darkroom

Photoshop's support for 16-bit images will help with editing and color-correction tasks involving layers, brushes, text, effects filters, shapes, and drawing and painting tools. Video-oriented users will like this feature for its rich color-palette preservation. This version of Photoshop raises the image-size limit, from 30,000 by 30,000 pixels and 24 channels per file to 300,000 by 300,000 pixels and 56 channels per file. To accommodate such heft, Adobe has also introduced a large-image file format, PSB. However, PSB is not backward compatible with earlier versions of Photoshop.

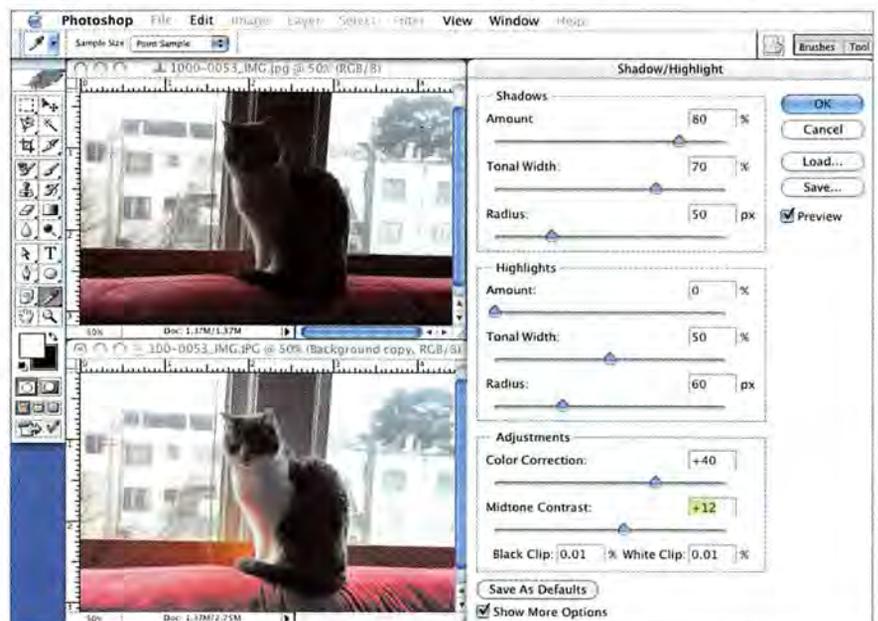
Buried inconspicuously in the Adjustments menu is the miraculous Shadow/Highlight command. With its multifaceted controls, you can improve contrast while preserving midtone balance; it's a cure-all for horrendous

exposures. Its default settings can do more to fix over- or underexposed parts of an image than hours of tinkering with masks and curves. The Match Color command, another addition, provides an intuitive method for giving photos shot under different lighting conditions consistent color, or for achieving artistic effects by blending colors and textures between images.

Now that Photoshop has a new spectrum of modifiable photo-filter adjustments, it's hard to figure out why Adobe took so long to add them. The package includes two versions of warming and cooling filters, and you can create your own filters with the color picker, or adjust filter density.

Tucked inside the Blur submenu, under the Filters menu, is the new Lens Blur command. Used directly on an image or in an alpha channel, it simulates genuine optical blurring and offers a natural-looking way to alter depth of field.

Adobe has built Camera Raw, previously a plug-in, directly into Photoshop CS. This feature will help a wide spectrum of shooters by giving them access to their digital negatives—a camera's proprietary raw



Shadow/Highlight You can salvage hard-to-edit photos with Photoshop CS's Shadow/Highlight controls, which let you fine-tune and balance shadows, highlights, and midtones.

26 Design software

GoLive CS
Illustrator CS
InDesign CS
Photoshop CS

34 Font-management software

Suitcase X1

36 Photo printers

Canon i900D
Canon i960
Epson Stylus Photo R300
Hewlett-Packard Photosmart 7960
Lexmark Z705
Olympus P-440

38 Illustration software

Canvas 9 Professional Edition

40 Software-development program

Revolution 2.1

41 Digital SLR camera

Canon Digital Rebel

42 Image-editing application

PhotoEdit 1.3

43 Scanner

Hewlett-Packard Scanjet 4670

53 The Game Room

Halo, Warrior Kings, Dr Blob's Organism, Hollow Ground, and ToySight

59 Mac Gems

MPlayer OS X, iRecordNow, Smart Scroll X, Ittec, DiscBlaze, QuickPlayCM, AvantGo USB sync, The Missing Sync for Internet Sharing and AvantGo



Filter Gallery Photoshop CS Filter Gallery has a large preview window and illustrated thumbnails, which make it easy to view and apply artistic effects, individually or in layers.

image format. The Camera Raw feature supports many camera brands. You can also manipulate and adjust settings such as color calibration, chromatic aberration, and vignetting across multiple images in the File Browser. Camera Raw is not for everyone, but it gives unparalleled control to people who need it, especially professional photographers who can now apply custom Camera Raw settings to selected images before batch processing.

Inspirational Elements

Several new Photoshop features have already debuted in Photoshop Elements, Adobe's consumer imaging program. A new Filter Gallery features a series of thumbnails that illustrate various effects. The large preview window is especially welcome, as is the ability to view stacked effects with-

out having to fly blind inside version 7's small filter previews. This gallery is snappy, responsive, and conducive to experimentation. Too bad it doesn't include all the filters. But then, too bad there aren't more filters—period. It's time for new ones.

Other Elements-inspired additions include red-eye removal as part of a new Color Replacement tool, and Photomerge, a powerful, easy-to-use panorama tool.

Designer Workflow

Photoshop's new Layer Comp palette is a simple but sophisticated solution for presenting, within a single file, different design versions to clients. A separate palette combines the layers of each presentation and lets you view them or export them to a Web gallery or a PDF presentation. PDF Presentation is another intuitive new utility, complete with professional transitions, for designers who need a program- and platform-agnostic way to showcase their work. The Layers palette, too, has undergone a metamorphosis. You can now nest layer sets as deep as five layers.

This version also includes a straightforward text-on-a-path feature and customizable keyboard shortcuts.

For Web designers, ImageReady sports interface updates such as the improved selection and handling of multiple objects. Adobe replaced the old Rollovers palette with a slick Web Content palette that can

continues

IT DOESN'T ALWAYS ADD UP

Adobe is making a big push for its Creative Suite, but the facts behind the hype are not as straightforward as you might think. The pricing structure is complex, and Adobe's Version Cue version-management system is of questionable value. You should make sure that purchasing the whole package makes sense.

Prices Adobe Creative Suite comes in two versions: Standard and Premium. The \$999 Creative Suite Standard effectively replaces the \$999 Adobe Publishing Collection 13. The Standard version includes Photoshop CS (\$649), Illustrator CS (\$499), and InDesign CS (\$699); the Publishing Collection included Photoshop 7 (\$599), Illustrator 10 (\$399), PageMaker 7 (\$499), and Acrobat 6 Standard (\$299). So you get less for your money with Creative Suite Standard than you did with the last Publishing Collection, though you get a better page-layout program in InDesign. The \$1,229 Creative Suite Premium adds the \$399 GoLive CS and \$449 Acrobat 6.0 Professional (★★★★; September 2003).

Do the math to find out whether the suite will be worth its cost. If you own no more than two previous versions of the suite components (Photoshop and one other program), the upgrade pricing will work in your favor. (Each Creative Suite component, if bought separately, costs \$169 for an upgrade from the previous version, except for Acrobat Pro, which costs \$149.)

But if you don't own Photoshop and you want all of the programs, you'll have to buy the full suite. If you own InDesign, for example, the cost of the suite is still less than the \$1,317 it would cost to upgrade InDesign and buy Photoshop and Illustrator.

Get a Version Clue You may consider getting the Creative Suite for its programs' integration and the Version Cue version-management software, its two major selling points. But the Suite is not better integrated across products than its individual components purchased separately. And Version Cue, though it's a good idea, got very mixed reviews from our evaluation team. Several found it complex, confusing, slow, poorly integrated and implemented, and perhaps more suitable for one user or a pair of users than for larger workgroups.

Adobe conflated two concepts with Version Cue—saving multiple versions in one file for easy rollback, and setting up an independent

continues on page 29

RATING: ★★★★★

PROS: Significantly improved File Browser; amazing Shadow/Highlight tool; visually informative Histogram palette; illustrated Filter Gallery; Layer Comp feature makes it easy to show clients different versions of files; support for nonsquare video pixels; easy Flash export in ImageReady; import of QuickTime movies as single images in ImageReady.

CONS: Same old filter set; no context-sensitive help; may need to reinstall it after upgrading to Panther.

PRICE: \$649; upgrade, \$169

OS COMPATIBILITY: Mac OS X

COMPANY: Adobe, 800/833-6687, www.adobe.com

create remote rollovers via a targeted click-and-drag interface. It's now easy to output animations to Flash format, or import QuickTime movies as single images and then export them as a QuickTime movie.

Video pros will applaud Photoshop's support for nonsquare pixels. Using this feature, which is as easy as choosing from the Pixel Aspect Ratio pull-down menu, you can view

accurate video previews, complete with preset standard video sizes and automatic action and title-safe guides.

One disappointment is the electronic guide. The lack of context-sensitive help means that when you have a question, you must search the general menu, which can involve time-consuming clicking. And after upgrading to OS X 10.3 from Jaguar, we

could no longer open files with a double click, but reinstalling the program solved it.

Macworld's Buying Advice

Photoshop CS is an awesome upgrade for every type of Photoshop user. Its slick, user-friendly new features make a huge difference in both productivity and image quality. This version is too good to pass up. □

InDesign CS

With Major New Text-Control Features, Publishing Program Is Poised to Topple QuarkXPress

BY GALEN GRUMAN

InDesign CS is a subtle yet very powerful update to Adobe's publishing flagship. The previous version, InDesign 2.0, introduced most of the key features that made the young program a publishing power-

What You Gain

The best new feature is a seemingly simple one: nested styles. A great use for this feature is creating drop caps—with nested styles, you can set a drop cap's size, drop, and font, and then use another style for the rest of the paragraph. Apply this concept to bullets, lead-ins, and openers—for example, set the bullet in one format, the sentence that follows (the bullet heading) in another, and the rest of the paragraph in a third—and you'll soon discover that nested styles are a must-have.

It would be nice, however, if you could apply a style to the first line of a paragraph,

designers who start with existing print documents rather than create multimedia presentations in a program such as Macromedia Director. (QuarkXPress 5 introduced similar multimedia capabilities.)

Most of what's new in InDesign—and there are more than 100 additions—are enhancements to or extensions of existing features. Many are minor, but most are truly useful, and users will quickly take to them.

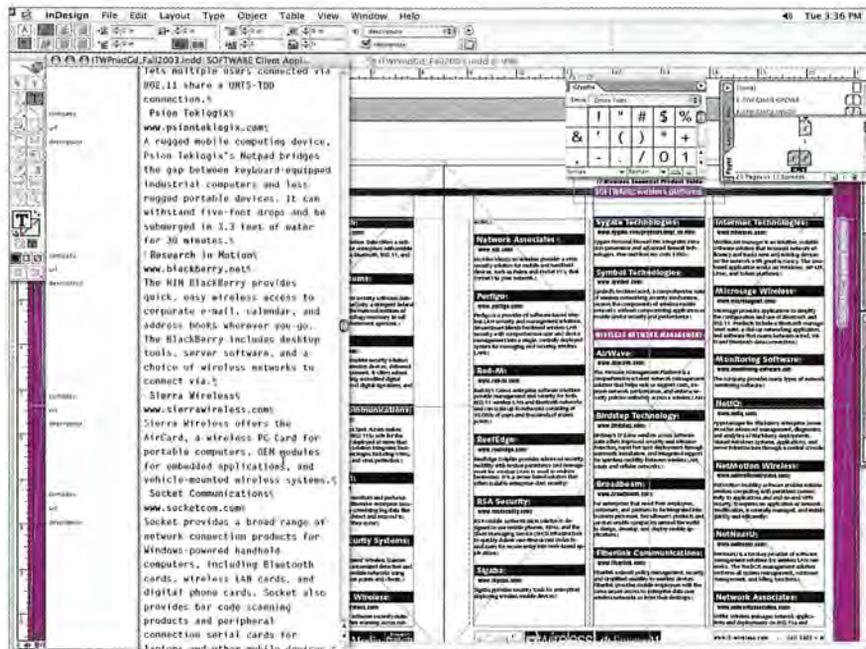
For example, you can now save page specifications in the New Document dialog box as presets, so you can standardize your page sizes, such as layouts for business cards and marketing materials. The ability to keep your objects' text wraps on hidden layers is effective in two key situations: when masking and when you don't want text to reflow simply because you hid a large graphic to speed screen display.

For text handling, InDesign now lets a paragraph style automatically align the first line of each paragraph to the baseline grid; this comes in handy for realigning text after a subhead. There's also a new preference for retaining or suppressing formatting for text passed into InDesign from other programs. This is great for when you want to strip out unwanted formatting.

InDesign's table function has several similar enhancements, including the ability to create header and footer rows that repeat across each page in a multipage table, and the ability to specify the type of strokes for table and cell boundaries.

Some Borrowed Items

Adobe has integrated several features previously available in InDesign's rival QuarkXPress. The biggest of these is the contextual



New Palettes InDesign has a whopping nine new palettes with new features. The contextual Control palette (top) lets you access many of InDesign's controls through one palette. The Story Editor window (left) lets you edit text separately from your layout. Also included is the Glyphs palette (top, second from right), as well as minimized, sliding palettes (far right).

house: the word-processor-like table editor, the Photoshop-level transparency features, and highly sophisticated typographic control. This version brings enhancements to many of these features, and it has several sensational new ones, such as nested styles and a much more efficient console for accessing text and object attributes. Although InDesign's interface is still somewhat complex, this is a more capable and more functional InDesign; in due time, this program will easily claim the publishing crown.

so you could, for example, set that line in small caps—a common design. But with nested styles, you must specify the number of words or sentences, or insert a format-to-here character.

Two other significant additions are the Separations Preview palette, which lets you see each of the four color separations before you print, and support for rich media such as buttons, movies, and sounds in InDesign layouts exported to PDF. Prepress artists and technicians will appreciate Separations Preview; the multimedia features will be useful for interac-

RATING: ★★★★★

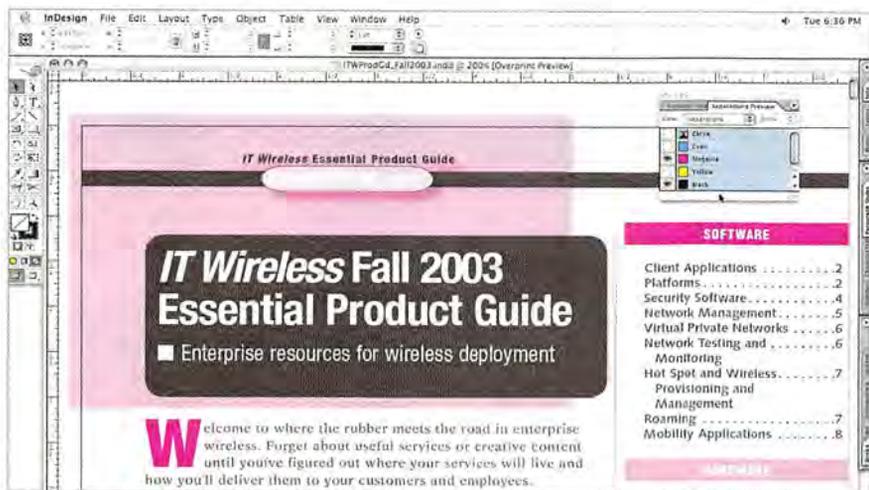
PROS: Better typographic and graphics capabilities than QuarkXPress offers; nested-styles feature eases complex text formatting; automatically manages table headers and footers across pages; contextual Control palette; dozens of small enhancements.

CONS: No way to save files for use in InDesign 2; too many palettes; features too scattered; time-consuming text-flow process; Web export limited to XML format for use in Adobe GoLive.

OS COMPATIBILITY: Mac OS X

PRICE: \$699; upgrade from previous versions, \$169; upgrade from PageMaker, \$299

COMPANY: Adobe, 800/833-6687, www.adobe.com



Output Preview InDesign CS now lets you preview color separations on screen, for soft proofing of your files. Here, the black and magenta plates are visible.

Control palette, modeled on XPress's Measurements palette. Another biggie is the implementation of mixed-ink colors; now you can combine spot colors or process colors—and InDesign one-ups XPress by letting you create a graduated palette of such colors, so you can choose from a range of hues that use the same inks.

InDesign CS also has PageMaker's Story Editor feature, a window in which you can edit text separately from your layout (see "New Palettes"). But Story Editor doesn't show the layout's line breaks or text-box limits, so many people will prefer to edit text directly in their layouts.

What You Give Up

InDesign CS has some curious gaps, and a feature has been removed: the ability to save layouts in HTML format for use on the Web. InDesign does package layouts in XML format for use in GoLive, but that's hardly a mainstream approach to Web publishing and print-document conversion.

One gap is a critical deficit: there is no way to save InDesign CS files down to version 2; this will slow the adoption of InDesign CS. Most publishing organizations will need a longer shakedown period before they entrust their workflows to a program whose files can't be used by an earlier version. (InDesign 2 didn't downsave either, but few people used earlier versions of the program, so it wasn't such a problem. An Adobe spokesperson says that the company hopes to solve this problem in a future version.)

The previous InDesign's clumsy workgroup features, which let documents be checked in and out as they moved through a publication workflow, are also gone. Instead, if you have the Version Cue software that comes with the full Creative Suite, you can access files from a set of shared folders and control access to them (see "It Doesn't Always Add Up"). But if your workflow requires the check-in and checkout of individual stories, you must buy Adobe's \$259 InCopy CS.

InDesign's highly cluttered interface is a continued annoyance; it spreads features all over the place, voraciously consuming screen real estate. With *nine* additional palettes, InDesign CS all but requires a two-monitor setup or a wide-screen display. Opening and closing palettes involves too much effort. There's a workspace manager that lets you save palette collections for easy opening and closing of related functions, but streamlining the palettes would have been better than providing a tool that hides and opens them in groups. Fortunately, Adobe includes the Control palette. Users can save screen space and time by using the Control palette in place of at least a half dozen other ones, and it's even more powerful than XPress's Measurements palette.

Like QuarkXPress 6, InDesign CS doesn't support OS 9. That's not a big deal, with Apple now into its second major mainstream version of OS X. InDesign CS shipped just before OS X 10.3 (Panther), so it formally supports just OS X 10.2 (Jaguar), but an Adobe spokesperson says that the company has certified it for Panther. Our usage under Panther revealed no serious problems, but the shortcuts for several commonly used palettes (Character Styles, Paragraph Styles, Stroke, and Table) conflict with new Exposé shortcuts in Panther. You'll need to redefine either InDesign's shortcuts or Exposé's.

Clearly the Leader

Like a slow but persistent B-movie monster that eventually catches its screaming victim, InDesign will soon overtake XPress. Adobe has added several QuarkXPress features to InDesign, such as the ability to mix inks and make custom rules and underlines. And it has enhanced the program's superior table-creation and typographic features, pushing forward unique features such as transparency control. Sure, XPress has many features InDesign doesn't, and it may still be easier to flow text in QuarkXPress, via the combination of master pages, auto-

continued from page 27

file system for sharing files among multiple users. Unfortunately, the result, two independent ways of saving and opening files, may be counterintuitive.

One group of experienced users spent hours using Version Cue, and they continually forgot to change modes when saving. Adobe's interface makes it hard to choose the right option. Adobe should have simply added a Save Version command instead of Version Cue's separate project-file system.

Many also found the Version Cue documentation unhelpful, and troubleshooting advice was nonexistent. Still others had problems importing older GoLive sites into Version Cue.

Finally, Version Cue works a little differently in GoLive than it does in Photoshop, Illustrator, and InDesign—and it's not available for use with Acrobat Professional.

Even our reviewers who had no problem with Version Cue agreed that it could stand some serious improvement. Version Cue is not a panacea for designing in workgroups—at least not yet.

Dearth of Docs Adobe Creative Suite doesn't include printed instructional documentation with the individual software packages, offering instead a thin Design Guide that explains how the programs are used in a workflow. The only complete instructional documentation for each component of the Suite comes in electronic format. You do get a full printed guidebook if you purchase or upgrade each program separately. So be prepared to spend extra for individual supplemental user guides, additional suite-related documentation, or a third-party book.—GALEN GRUMAN AND JACKIE DOVE

matic page addition, and pre-linked text boxes. But these advantages may no longer be enough to keep people using XPress.

XPress's unique strengths have dwindled to a few little-used functions, and InDesign CS is the program that will relegate QuarkXPress to PageMaker's status of a decade ago. PageMaker users gave up that program's few advantages to move to QuarkXPress, and now QuarkXPress users are likely to switch to InDesign, which, by all accounts, Adobe will continue to improve.

Macworld's Buying Advice

For existing InDesign users, moving to the CS version is an obvious choice—as long as companies with multiple designers can also upgrade users of InDesign 2.0. At \$169 for an upgrade and \$699 for the full version, InDesign CS is less expensive than QuarkXPress, and if it weren't for InDesign CS's unforgivable inability to save down to version 2, this would be a very easy purchase decision. XPress users should give InDesign CS a serious look as well; Adobe's program does the page-layout job better in many areas. □

Illustrator CS

New Version Focuses on Typography, Gets Cool 3-D Features

BY BEN LONG

If you're a type nerd, you're going to love the new version of Illustrator. Though Illustrator CS doesn't pack a lot of new drawing tools, Adobe's extensive reworking of the program's text tools makes this upgrade a typographic dream. Because Illustrator now incorporates InDesign's sophisticated text engine, designers no longer have to divide their time between the two programs to get superior text rendering in their illustrations. Add a smattering of new illustration tools and an improved printing interface, and you've got a valuable upgrade.

The new Font menu (still located under the Type menu) is the most obvious difference. It not only displays font names in their actual typeface, but also provides a PostScript, TrueType, or OpenType icon next to each font name. The distinction between these font formats becomes apparent as you dig into Illustrator CS's new typography controls. OpenType allows for as many as 65,000 separate characters in a font, including, most importantly, character variants. For example, a font might have swash characters—fancier, more elaborate versions of letters.

The new OpenType palette's simple interface lets you activate or deactivate entire categories of optional characters. For example, you can select an individual character and activate its swash alternative by clicking on the Swash button in the OpenType palette. Clicking on other buttons replaces elements such as ligatures, fractions, and ordinals.

Finally, Adobe has also included InDesign's Every-Line composer option, which does an extraordinary job of adjusting word and character spacing to prevent rivers of white text, to eliminate the need for breaking words, and to generally make a more attractively composed block of text. As InDesign users already know, this feature will automatically make text layouts look much better.

Typing in Style

To make your formatting chores less tedious, Adobe has wisely included both Character and Paragraph styles in Illustrator CS.

Illustrator has had a type-on-a-path tool in several versions, but it has been greatly improved with the latest release. Using the new Path Text Options dialog boxes, you can control your path's text alignment, as well as the orientation of individual characters as they traverse your path.

Illustrator's controls for flowing text from one block to another have always been a little cumbersome, but with this version, Adobe has installed the same text-block-management controls found in InDesign. All text blocks now have an In port and an Out port, a small square like the ones at the beginning and end of text blocks in a page-layout program. You can link text from one block to another by dragging lines between the relevant ports. And that means *all* text blocks: you can link text on a path to other text on a path, or to a regular rectangular text block.

All in all, Illustrator CS leaves little to want in the way of type control.

An Update with Depth

Though the bulk of Illustrator's changes are to its text facilities, it does include a few new drawing goodies. Users of Adobe's old Dimensions package will be pleased with Illustrator's new 3-D effects. These new effects provide extrusion and revolve commands that are good enough to build simple 3-D shapes.

To use them, first draw a profile using Illustrator's normal drawing tools, and then choose Extrude or Revolve from the Effects menu to translate that profile into a 3-D object. For example, you might draw a square and then use the Extrude command to turn it into a cube.

Changes are implemented as effects, so they remain live: you can go back at any time and adjust their parameters. You can rotate the object, add bevels or lighting effects, or change the perspective (as you'd change the focal length on a camera lens).

You can also map any symbol onto a 3-D object to create a textured surface.

Because they're vector-based, Illustrator's 3-D tools are no substitute for full-blown 3-D-modeling software. But for creating interface elements or simple 3-D elements—including logos—Illustrator CS's 3-D features are well designed.



3-D Illustrator's new 3-D effects let you extrude or lathe profiles into 3-D objects with bevels and lighting effects.

Type-A Tools

In the last few updates, Adobe changed keyboard shortcuts and other interface details to make Illustrator's interface more closely match that of Adobe's other products. Longtime Illustrator users will be pleased to find that, overall, Illustrator CS's interface is unchanged from version 10.

RATING: ★★★★★

PROS: Excellent typographic controls; simple 3-D effects; improved printing interface; new PDF features.

CONS: Occasional interface inconsistencies with other CS products.

OS COMPATIBILITY: Mac OS X

PRICE: \$499; upgrade, \$169

COMPANY: Adobe, 800/833-6687, www.adobe.com

Obviously, these features work only with OpenType fonts, but Adobe has generously included a nice, varied assortment of 100 OpenType fonts with Illustrator.

Having such an easy way of accessing alternate characters means that you can employ the types of characters that professional typographers have used for centuries but that often get ignored in digital typography. And Illustrator CS has two other new features that provide further old-style typographical improvements. Selecting the new Optical Kerning option in the Characters palette automatically adjusts the inter-character spacing of the currently selected words, to produce more-attractive text. Optical Margin Alignment automatically adjusts the position of characters at the end of a line, to make text blocks look more even.

More and Less

The Print dialog box has been greatly improved. It contains many of the items that were previously spread between the main Print and Page Setup dialog boxes. You now also have much greater control of printer marks, and you can easily save custom print settings to use later.

Illustrator also provides excellent support for Adobe's latest PDF format. You can now save Illustrator files as layered PDF files. When a file is opened in Acrobat 6, layers can be turned on and off, so you can

deliver multiple versions of a document in one file.

Despite all the improvements, there are still some annoying interface problems that should have been cleared up long ago. A major flaw is that you still can't drag an entire layer from one document to another, as you can in Photoshop. You can work around this by selecting all, copying, and pasting, but because Illustrator doesn't necessarily paste into the same position it copied from, this is a limited solution.

Also strange—for a release that's supposed to be largely about cross-product integration—is the lack of a Photoshop-like context-sensitive toolbar for accessing parameters of the current tool.

Macworld's Buying Advice

Though it doesn't support a lot of new drawing tools, Illustrator CS's wealth of new typography and text-formatting controls makes this upgrade a no-brainer. In this upgrade, you'll get a few new drawing tools and improvements, and nice 3-D features. □

GoLive CS

Print-Savvy Web-Authoring Tool Stumbles with Complex Interface, Flawed Support

BY DAVID SAWYER McFARLAND

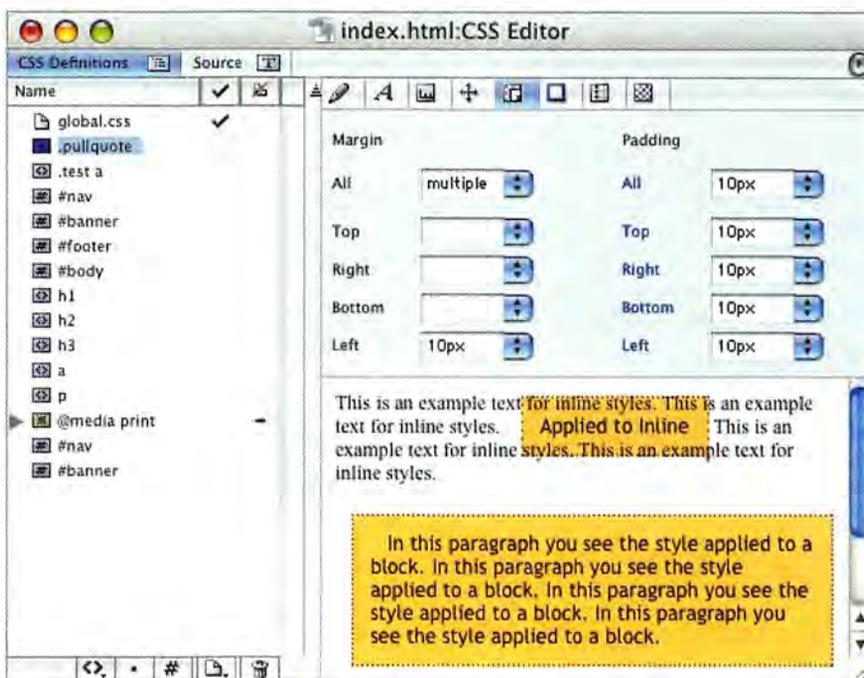
Over the years, Adobe GoLive has matured into a feature-rich Web-site-development program that both provides advanced tools for Web gurus and caters to graphic designers who rely on palette-driven WYSIWYG tools. GoLive CS offers better integration with other Adobe products, productivity improvements, a revised interface, and refined coding tools. Its features are comparable to those of Dreamweaver MX 2004's, but it can be confusing, and it occasionally crashed while running in Panther. (Adobe says that it is planning to release an update in the near future to deal with some Panther issues.)

User Interface

GoLive's highly—at times, overwhelming—customizable interface has much in common with the other apps in the CS Suite. The Objects palette, for example, now has a default toolbar display that looks like Photoshop's Tool palette. GoLive palettes can also dock discreetly at the side of the display and expand for action with a single click.

The program includes many small (and thoughtful) additions, such as a Zoom tool that gives you to-the-pixel accuracy when you're placing layers and page content in a document.

But with its confusing array of buttons, palettes, and tools, the program can feel a



In Style Despite its flaws, GoLive's integrated CSS editor hastens the creation and previewing of CSS styles.

little like the control panel of a 747. In addition to the toolbar, Objects palette, and Site window, there are 28 other floating palettes (three more than the last version of GoLive had). Navigating the toolbars and the Objects palette, with its myriad icons, can also be confusing, and some actions require too many steps. For example, to add a graphic, you drag a graphic object from the Objects palette to the page. You then have to use a separate palette to specify the graphic file you just dragged.

Integration Fascination

One of GoLive's biggest selling points is how well it works with other Adobe applications, and GoLive CS is even better integrated with the rest of the updated suite.

If you use Photoshop, Illustrator, or InDesign extensively, you'll find time-saving tools that aren't available in any other Web-design program. Although Smart Objects have been around since GoLive 5, they remain an incredible (and unrivaled) tool. For example, when you add a Photoshop image as a Smart Object to a Web page,

GoLive's built-in ImageReady optimization tools let you prepare the image for use on the Web. If you later make a change to the original Photoshop file, the Web graphic is automatically regenerated from the source. GoLive CS expands on this feature, letting you crop a graphic without changing the source file.

To quickly repurpose an InDesign document for the Web, you can export a package for GoLive that includes all of the InDesign document's text and images. After importing the package file into GoLive, you use a floating window containing a thumbnail of the InDesign document to add graphics and text to your GoLive document.

GoLive CS includes many new PDF tools: for example, the PDF Smart Object tool generates Web graphics of a PDF file, and you can add comments and Web links to PDF files directly within GoLive.

GoLive 6 included a copy of the Adobe Web Workgroup Server (AWWS), which has been replaced by Version Cue (see "It Doesn't Always Add Up"). Although Version Cue continues

RATING: ★★★

PROS: Great integration with other Adobe products; advanced site-management tools.

CONS: Complex interface; uneven CSS tools; no database tools; Version Cue server not supplied with stand-alone version of GoLive CS.

PRICE: \$399; upgrade, \$169

OS COMPATIBILITY: Mac OS X

COMPANY: Adobe, 800/833-6687, www.adobe.com

SPECIAL CHARTER RATE

Mac Developer JOURNAL

Subscribe today! Don't miss out on this Special Charter Offer! Each issue is packed with information every Mac developer needs. And it's yours at our special Charter Rate of \$49.95*.

Simply order online at
www.macdeveloperjournal.com/subscribe

Mac Developer Journal is a digital publication geared to Mac developers, especially new Mac developers who are using Mac OS X's underlying technologies – including Cocoa and Unix – to create exciting new products that exploit the unique features that make Mac OS X a remarkable platform for users.

Each issue is loaded with useful topics such as:

- Case Studies and News
- Special Features on New Technologies
- Top Ten Resource List
- Feedback Forum
- Views from cutting-edge developers

Order today! Don't delay!



* *Mac Developer Journal* frequency: 4 issues per year. Future issues will be delivered digitally by the Zinio Reader.

Cue looks somewhat different from AWWWS, it has the same functions: you can create projects, check out a file to edit it, check it back in to make the latest version available, publish projects to a Web site via FTP, and even revert to earlier versions of a Web page. Although GoLive works with Version Cue when purchased separately, you must buy the suite to get the Version Cue server.

Increasing Productivity

GoLive 6 users will be impressed by GoLive CS's responsiveness, and several new features will help them work faster. Queries and collections let you perform complex searches and save the results for later use. Say you wanted to move all the files you'd created or modified in the last 24 hours to your Web server. You could create a query that found all those files, saved the results as a collection, and then uploaded those files. The Query function dramatically expands on the Site Reports feature added in GoLive 6. With Query, you can locate accessibility problems, code errors, and even perform complex Boolean operations to precisely narrow down or expand your search.

If you often dive into HTML code, GoLive's improved Source Code Editor will be welcome. As you type the first few characters of an HTML tag, the new Code Hinting feature provides a pop-up menu listing tags that match: simply select the

appropriate tag with the arrow keys or mouse to forgo typing the rest of the tag, and closing HTML tags are automatically added.

GoLive CS includes a new tool, called Co-Author, that can help novices update sections of a Web site. The designer creates and edits these sections within GoLive, and novices use Adobe's Co-Author editing program (\$89) to update the pages. However, the setup process is time-consuming and requires creating separate Co-Author template files (which are confusingly unrelated to GoLive's page-template tools). The Co-Author editing application, while easy to use, offers limited text-formatting controls.

Keeping Up with Standards

Cascading Style Sheets (CSS) let a designer use style sheets to format the appearance of HTML, just like in desktop publishing, and the improved abilities of Web browsers to display CSS have made relying on CSS more practical for designers. While GoLive's CSS tools have some major flaws, the program does sport some improvements to its CSS implementation. Most significantly, the CSS editor now centralizes style creation into a single palette (see "In Style"). This simplifies a process that required two palettes in GoLive 6, and a new built-in preview shows how a style looks as you build it.

Applying styles is also easier. While you're designing a Web page, you can preview a given CSS style applied to text near the text-insertion point. Hovering the mouse over a style's check box in either the new drop-down CSS button on the toolbar or the revamped CSS palette shows how that style would format selected or adjacent text.

GoLive makes creating complex CSS designs too difficult, and the Layout view doesn't always display CSS styles as they will look in a Web browser. And although GoLive introduces a new Live Rendering mode for previewing a document, it's based on the Opera Web browser (not the more common Internet Explorer or Safari), which has its own display oddities.

GoLive no longer includes the dynamic content technology that let you create database-integrated sites—a feature that similar programs, such as Macromedia's Dreamweaver MX 2004, offer.

Macworld's Buying Advice

If you depend on Photoshop, Illustrator, and InDesign documents to fill your Web pages, GoLive CS is an invaluable tool for accelerating the Web-development process. But while the program offers many advanced features for building and managing Web sites, its lackluster support for current CSS techniques and its sometimes complex and overwhelming interface are serious drawbacks. □

SUPERMART gal with Sp... ot older working... at WFM. Me... with curly... pony tail. b... hot lunch? #6922

COC PLE. I did not... made my day... beautiful. I would... in. Did I read

PHONE-PLAYING mithville recently... Georgia. #6854

DUGOUT FIRECRACKER. You

Instead you landscaped my erotic fantasies in ways I have never imagined. Could not pronounce your name but looked very sensual. I had blue shoes on. #3696.

TWINS WHO SAW TWINS. Us: twin handsome guys in suspenders walking Maltese. You: two foxy ladies fighting over last piece of gum. What do you say the four of us make two good looking couples? Twin love. Call me. Call me. #4747.

35-55, non-smoker, financially secure, enjoys pampering a woman traveling, long walks and stars. please call #6821

ME: LONELY SWEDISH LINGERIE MODEL and gourmet cook. You: slightly overweight and without ambition. Must be into computers, role-playing games and air hockey. #5988

DPWF, 46, emotionally and physically fit, youthful appearance and outlook, intelligent, loving, desires long term relationship. #6853

49, PLAIN BUT WITH GOOD BITS. YOU WON'T BELIEVE YOUR EYES

We're Easier.

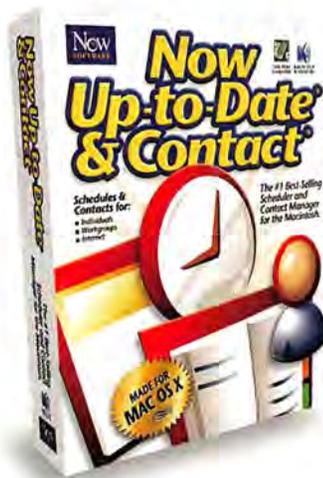
Sometimes things are so easy they surprise you. Like REALbasic. Even if you've never done it before, you can create your own software with REALbasic. Write a utility, create a game. Make your Mac do the things you've always wanted it to do. REALbasic makes it surprisingly simple.

Here's another surprise. **Act now and save 10% on REALbasic.** Visit our website at www.realbasic.com/macworld to find out more. Hurry, though, this special offer expires March 31, 2004.



To try REALbasic visit: www.realbasic.com/macworld
Hurry! Purchase REALbasic in our online store and save 10%, visit: www.realbasic.com/store. Use the coupon code **Macworld**

This is it:
cross-platform
group calendars and
contacts done right.



"4 1/2 mice"

"in a league of its own"

"none can touch the overall feature set"

"the best calendar program I've ever used."

30-day free trial
volume and education discounts available



<http://www.nowsoftware.com>
1-800-344-9160

REVIEWS

Suitcase X1

Font Manager Gains Speed and Better Activation Features

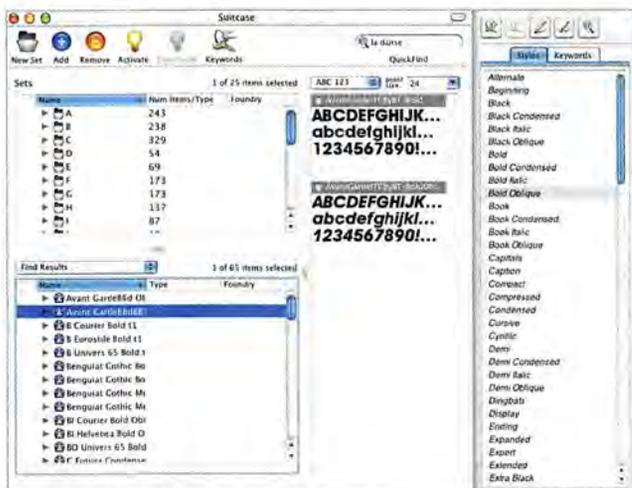
BY ANDREW SHALAT

Managing your fonts can be as painful as getting your teeth cleaned. You do it only when you have to, and it's no fun. Just as you hope for a dentist who works quickly, efficiently, and gently, you want a font-management application that helps you find, group, preview, and access your fonts painlessly. Extensis's Suitcase X1 (pronounced *eleven*) has an improved window-pane interface that makes font management

system's Helvetica with another Helvetica, but they know enough to step gingerly through this minefield. We truly wish Extensis had put a large red warning over the option that gives everyone access to such a powerful tool.

Got Panther?

The introduction of Panther's built-in Font Book application—which organizes, activates, and deactivates fonts—raises a question: Is Suitcase, or any third-party font-management application, necessary? The answer depends on your usage. Suitcase X1 is best for the creative pro who uses more than 100 fonts on a daily basis. Font Book, which has some drawbacks, might be acceptable for people who don't use many fonts. If Font Book doesn't meet your needs, check out FontCatalog (\$30; www.prepressmiami.com/fontcatalog)—a shareware application that's compatible with



Activation Made Easy Suitcase X1 lets you immediately activate your fonts from any of its three interface panes.

this easy. And it's quite fast in Classic, Jaguar, and Panther (Panther users will have to download a patch).

You can now activate Suitcase features from any of its three panes, including the Preview pane. And when you add fonts to a set, Suitcase automatically scans and repairs them.

Best of all, the new keyword engine lets you customize and assign your own sorting criteria on-the-fly. This feature is an instant font-set maker, giving you speedy activation and organization in one easy step.

Do Not Press This Button

Suitcase X1 makes it easier than ever to manage your system fonts—perhaps too easy. If you're the type of person who can't resist opening doors labeled Do Not Enter, then this warning is for you: Suitcase has a door you *really* shouldn't open. You can cause work-stopping trouble on your system simply by deactivating seemingly innocuous fonts such as Lucida, Geneva, and Courier. These are only some of the fonts OS X relies on to make the Aqua interface readable. Creative professionals and prepress specialists might, under certain circumstances, want to replace the

system's Helvetica with another Helvetica, but they know enough to step gingerly through this minefield. We truly wish Extensis had put a large red warning over the option that gives everyone access to such a powerful tool.

Font Book doesn't meet your needs, check out FontCatalog (\$30; www.prepressmiami.com/fontcatalog)—a shareware application that's compatible with

Panther. Slower than Suitcase X1 and not as full-featured, FontCatalog offers a simple, clear preview interface with drag-and-drop activation.

Macworld's Buying Advice

Extensis's Suitcase is a great font-management tool for people who regularly work with more than 100 fonts, who need more than Panther's Font Book provides, and who need greater speed than FontCatalog can muster. Suitcase X1 is faster, easier to use, and more efficient than its predecessors, thanks in part to its keyword and QuickFind features. Aside from the dangers of accidental system-font deactivation, Suitcase X1 is a pain-free way to keep your fonts in line. □

RATING: ★★★★★

PROS: New QuickFind feature and keyword engine speed on-the-fly font management and sorting.

CONS: System-font management is too easy to access.

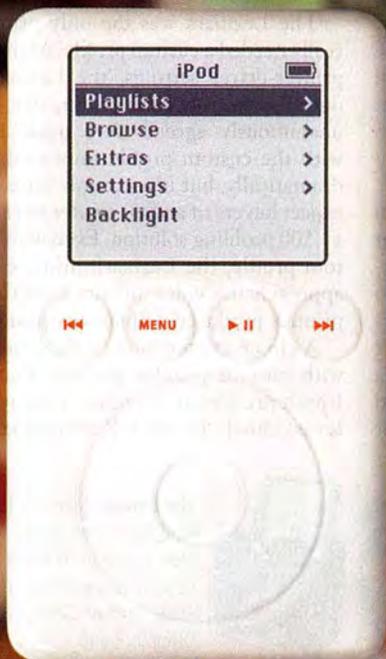
PRICE: \$100; upgrade, \$50

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Extensis, 800/796-9798, www.extensis.com



Small enough to take with you.



Enjoy the benefits of personalized service when you purchase from a small company that is one of the largest Apple resellers in the country.

Talk to anyone at Small Dog Electronics and you're talking to a courteous Apple Product Professional.

From iPods to Xserves, digital cameras to high-definition displays, we have what you're looking for. Give us a call today, we're trained to help.



**Small Dog
Electronics**
www.smalldog.com

1-800-511-MACS
 Apple Specialist

Photo Printers

Strong Contenders in Latest Batch Score High on Detail and Color

BY BRUCE FRASER

Lately, anyone who's paying attention has seen a stampede of multipage ads in national magazines, meant to brand the term *digital photography* in the mind of the average consumer. Indeed, the allure of taking photos with a digital camera and printing them how and when you like is hard to resist.

It's in this context that we view the latest round of photo printers that produce photos as large as 8 by 10 inches. Straddling the often fuzzy line between consumer- and professional-level devices, these products offer features such as direct printing from camera storage media with no computer or image-editing application required (see "Look, Ma, No Photoshop!"). But most are also capable of producing output that would please the hard-core Photoshop geek.

In this roundup, we looked at two new printers from Canon—the \$250 i900D and the \$200 i960—Epson's \$179 Stylus Photo R300, Hewlett-Packard's \$300 Photosmart 7960, and Lexmark's \$80 Z705. We also included an outlier, the \$499 Olympus P-440, which uses dye-sublimation, rather than ink-jet, technology to produce prints.

We used several criteria in judging the photo printers. The quality of the output had to be at least as good as what you'd get from a one-hour photo store, without your having to jump through hoops to get it. The printer needed to be affordable, not just to buy but also to maintain. And we wanted the winner to be reasonably speedy; otherwise, you may find that it's faster to walk to that one-hour photo store.

What's Inside

All of the ink-jets use six inks for photo printing: cyan, magenta, yellow, black, light cyan, and light magenta. The Epson and Canon devices use individual cartridges for each ink—a potential money-saver since you can replace just the ink that's run out—while the Lexmark and HP printers use one tri-color cartridge for cyan, magenta, and yellow, and a second cartridge for the light photo inks. With the Lexmark, you swap out the light-photo cartridge when you need to use the black-only ink cartridge. On the HP, the black ink is the only one you swap out: your color and special photo inks are always installed, and a third cartridge slot holds either a black-ink cartridge for text or a special photo-gray cartridge (included) for black-and-white photos.

The Olympus P-440 is a dye-sublimation printer that uses cyan, magenta, and yellow dyes with a clear coating applied over the color to prevent damage from fingerprints. Unlike ink-jets, dye-sublimation printers use the same amount of resources regardless of the size or color composition of the output. The fixed cost is a little over \$2 per print.

Color Me Faithful

A photo printer isn't much use if what you see on your monitor doesn't resemble what you get from the printer. To test color accuracy, we printed our standard test image to each printer using three different color-matching methods: the printers' default settings, ColorSync printer matching, and a custom ColorSync printer profile created with GretagMacbeth's Eye-One Photo color

calibrator (\$1,495; www.i1color.com). The test image is a TIFF file saved in Lab color, so the printer profile is the only one that affects the color reproduction. The test image contains fine details in highlights and shadows (shiny metal and coffee beans); memory colors (colors we can identify as right or wrong because we know what color something is *supposed* to be—a red bell pepper, for example, in an image of fruits and vegetables); and a variety of textures from cloth to plastic to wood grain. All in all, the photo presents a considerable challenge.

Our jury (a panel of experts made up of *Macworld* editors) gave the Epson R300 the highest marks for color fidelity at the default settings, followed by both Canon printers and the Photosmart 7960, all three of which produced similar results (and which would benefit from better included color profiles). The Olympus P-440 didn't fare quite so well, particularly when printing dark blues, but nonetheless produced acceptable results. The Lexmark Z705 was the only printer whose results our jury deemed unacceptable, with strongly oversaturated reds that made the cherry tomatoes in our test image look radioactive.

The Lexmark was the only printer that really needed a custom profile. At the default printer-driver settings, the Lexmark produced some truly garish colors that our jury unanimously agreed were poor. Printing with the custom profile improved matters dramatically, but it's certainly unrealistic to expect buyers of an \$80 printer to resort to a \$1,500 profiling solution. Even with the custom profile, the Lexmark print still didn't approach the color fidelity that the other printers produced without any profile.

A closer examination of the prints made with custom profiles put the Canon and Epson printers at the head of the pack, followed closely by the HP Photosmart 7960,



The Lineup (from left to right) the Canon i900D, Canon i960, Epson Stylus Photo R300, Hewlett-Packard Photosmart 7960, Lexmark Z705, and Olympus P-440.

Photo Printers Compared

COMPANY	PRODUCT	MOUSE RATING	PRICE	CONTACT	PROS	CONS
Canon	i900D	★★★★	\$250	800/652-2666, www.usa.canon.com	Relatively speedy; best computerless printing; individual ink cartridges.	Included ColorSync profiles need improvement.
Canon	i960	★★★★	\$200	800/652-2666, www.usa.canon.com	Very fast; best detail reproduction; individual ink cartridges.	Included ColorSync profiles need improvement.
Epson	Stylus Photo R300	★★★★	\$179	800/463-7766, www.epson.com	Very good color matching; widest range of computerless-printing support; CD printing; individual ink cartridges.	Detail reproduction not as good as that of the Canon i960 or HP Photosmart 7960.
Hewlett-Packard	Photosmart 7960	★★★★	\$300	800/474-6836, www.hp.com	Good color; very good detail reproduction.	Expensive; rather slow; uneconomical three-color ink cartridges.
Lexmark	Z705	★★	\$80	800/539-6275, www.lexmark.com	Inexpensive.	Slow; poor-quality output; uneconomical three-color ink cartridges.
Olympus	P-440	★★★	\$499	800/622-6372, www.olympusamerica.com	Fast printing on multiple copies of 4-by-6 images.	Expensive; lackluster print quality; included ColorSync profiles need improvement.

TIMED RESULTS

	8-by-10 Photo		4-by-6 Photo		Color Photo		Gray-Scale Photo	Print from Media Card
	HIGHEST RESOLUTION	SECOND-HIGHEST RESOLUTION	HIGHEST RESOLUTION	HIGHEST RESOLUTION	COLOR FIDELITY	DETAIL	PHOTO QUALITY	PHOTO QUALITY
Canon i900D	7:14	3:43	3:29	Good	Good	Good	Very Good	
Canon i960	2:19	1:29	1:21	Good	Very Good	Good	N/A*	
Epson Stylus Photo R300	7:17	4:22	3:54	Very Good	Good	Flawed	Good	
HP Photosmart 7960	11:32	5:51	5:22	Good	Very Good	Good	Good	
Lexmark Z705	25:45	13:12	14:03	Unacceptable	Unacceptable	Flawed	N/A*	
Olympus P-440	7:03	N/A*	2:56	Flawed	Flawed	Flawed	Good	
	<Better	<Better	<Better					

BEST RESULTS IN BOLD.

All scores are in minutes:seconds. We tested the printers on a 1GHz Power Mac G4 with Mac OS X 10.2.6 and 512MB of RAM installed. We set displays to 1,024-by-768-pixel resolution and 24-bit color. We used Adobe Photoshop 7.0.1 to print the photographic images. We recorded the time each printer took to print an 8-by-10-inch photo at both its highest- and second-highest resolution settings. We recorded the time each printer took to print a 4-by-6-inch photo at its highest resolution settings. A panel of experts looked at a variety of prints and rated each as Outstanding, Very Good, Good, Flawed, or Unacceptable. *N/A=not applicable. The Olympus P-440 has only a highest resolution. The Canon i960 and the Lexmark Z705 do not print from media cards.—MACWORLD LAB TESTING BY JAMES GALBRAITH

which didn't do quite as good a job on dark colors. The Olympus P-440 produced decent but unspectacular results, with too much contrast and too little highlight detail.

The Devil Is in the Details

Color fidelity is important, but the ability to bring out fine details is also a big issue. With ink-jet technology, the ability to produce fine detail depends on two things: the size of the individual ink droplets, and the accuracy with which the printer can place them. Resolution specifications aren't a reliable guide here, because they simply state the accuracy with which the printer *attempts* to lay down ink drops, not the accuracy with which they succeed in doing so. Droplet size is a slightly more reliable guide, but our testing showed that even these specifications can mislead.

The two printers that produced outstanding detail were the Canon i960 and the HP Photosmart 7960. Both claim resolutions of 4,800 by 1,200 dpi, but the Canon uses a much smaller droplet than the HP (2 picoliters versus 5). Moreover, the i960 showed noticeably better detail than its i900D sibling, although they have identical resolution and droplet-size specifications. The i900D tied with the Epson R300, which claims to have a higher resolution—5,760 by 1,440 dpi—but uses a slightly larger 3-picoliter droplet size. The Lexmark Z705 again fared poorly: it uses a much larger 7-picoliter droplet, and our test panel gave it the lowest marks of all the printers for detail reproduction—it completely lost details such as the serrations on a knife blade or the texture on a clove of garlic.

We gave the Olympus the same rating as the Lexmark; images from dye-sublimation printers just aren't as sharp as those from ink-jet printers.

The ink-jet printers all offer multiple resolutions, and the highest resolution takes a lot longer to print than the second-highest one, so we asked the jury to compare prints from each ink-jet at the highest and second-highest resolutions on glossy paper to see if they could see any difference. All told, we could detect no difference between the two

resolutions (which is good news if you want high-quality prints quickly).

Shades of Gray

While we suspect that the vast majority of consumers will use these printers for color photographs, we were intrigued by HP's claim that the Photosmart 7960 can also produce "stunning black-and-white" photos (though to do so you must swap out the black cartridge for the special photo-gray cartridge, which ships with the printer). Our jury rated the black-and-white prints from the Photosmart 7960 as good, as they did with both Canon printers, but the difference largely boiled down to a choice between the HP's black and white with a reddish cast versus a much less appealing green (from the Lexmark) or cyan cast (from the Epson and Olympus). Although the HP was the best of the lot, we can't recommend any of these printers for serious black-and-white use.

Much-Less-Than-One-Hour Photo

The printers varied widely in the speed with which they produced prints. At the second-highest resolution, which normal printer owners will probably use most often, the undisputed speed champ was the Canon

i960. (The Olympus P-440 has only a highest resolution.) The i960 produced an 8-by-10-inch print in a blistering 1 minute and 29 seconds. The Canon i900D took second place, closely followed by the Epson R300. The HP Photosmart 7960 was a little slower. The Lexmark took more than twice as long as any other printer, in all sizes at all resolutions. The Olympus P-440's leisurely performance on 8-by-10 prints surprised us—speed is usually regarded as the main advantage of dye-sublimation technology. The Olympus printer did print 4-by-6 prints quite quickly, however (see the benchmark for speed comparisons).

Macworld's Buying Advice

The one printer that clearly stands out from the pack is the Canon i960. The combination of speed, color fidelity, detail, and price makes it a fabulous product. The Canon i900D and the Epson Stylus Photo R300 offer excellent value and are also fine choices. The HP would work well for people who print black-and-white images often. The Olympus P-440 is just too expensive for its limited usefulness. And despite the Lexmark Z705's low price, it isn't worth the hassle to get this device to produce good color. □

LOOK, MA, NO PHOTOSHOP!

Computerless photo printing has gone from a curiosity to a mainstream technology that holds huge potential for the millions of consumers who wouldn't have a clue what to do with even an entry-level image-editing application.

The Canon i900D, Epson, HP, and Olympus feature built-in memory-card slots for printing from digital-storage media, and the quality of the prints pleasantly surprised us—all were comparable to the results you'd get from a typical one-hour photo store, and the computerless prints from the Canon i900D were very good indeed, with strong but plausible saturation and natural skin tones. The Epson, the HP, and both Canons support printing directly from compatible cameras, and the i900D and the HP sport color LCD screens (Epson's \$229 R300M has a similar display). The Epson R300 further supports printing directly from a USB CD or Zip drive (though your Zip disk will have to be DOS formatted) and can print to CDs or DVDs.

Even if you would never dream of printing an unedited image straight from the camera to one of these printers, you may find it very handy to be able to produce quick thumbnails of all your camera cards' images.



Canvas 9 Professional Edition

Multifaceted Illustration Program Has New Technical Features

BY GREG MILLER

ACD Systems' Canvas 9 Professional Edition is primarily for technical illustrators who need to design precision graphics. It can also pinch-hit as an image editor or an illustration program—plus, it can serve as a page-layout, drawing, presentation, and Web-site program. Surprisingly, Canvas does all of these tasks well, so it's an attractive technical tool for illustrators who also like to exercise their creativity.

Fingertip Control

Developers of complex programs such as Canvas 9 strive to make efficient interfaces. ACD Systems has done this by enhancing existing features and adding new ones. A terrific new feature is the Properties bar, a horizontal display that shows relevant information about and options for an active tool or object.

visibility as you move from one tool to the next. And you can minimize palettes and dialog boxes to unobtrusive, quickly accessible tabs on the edge of your drawing, so you can customize the interface according to your needs.

Precise Differences

A new double floating point, 64-bit coordinate system gives Canvas 9 the precision that technical illustrators need in order to make scaled and measured drawings—precision usually found only in CAD (computer-aided design) programs. For instance, you can draw illustrations to scale; this is different from drawing them proportionally, as you might do in a typical illustration program.

Canvas provides the same functionality and ease of use generally found in CAD programs.

To set dimensions—the notations on your drawing that indicate an object's real-world size—just click from one point to another in your drawing; the program calculates and displays the dimensions. (You can customize the appearance of your dimensions.) You can place them one at a time or in strings that represent, say, different parts of a drawing. You can even adjust tolerances, so that the dimension values allow for and track minor variances. This is useful in engineering and product-design where drawings need to account for the accuracy of actual manufacturing processes. And Canvas now provides a virtually unlimited zoom, and document sizes as large as 2,000 miles squared (to scale).

A feature from previous Canvas versions, Sprite Effects, remains one of the program's best. With Sprite Effects, you can apply one or more filters—zoom, sharpen, color balance, and others—to part of an illustration without changing the underlying graphic. Sprite Effects work on bitmapped images, vector-based drawings, and combinations of the two. Similar applications are just catching up to this functionality.

Technically Advanced

In addition to the Professional version, Canvas 9 comes in two technical editions, each of which costs \$200 more.

The GIS (Geographic Information System) Mapping Edition includes GIS capabilities and mapping, such as the ability to import and work with industry-standard Shape Files and their associated data files and integrate them into technical presentations. You can also import GeoTIFF files and overlay and align aerial photography. Very few GIS applications' technical illustration capabilities can come close to those of Canvas 9—a unique and powerful application that lets you create GIS-accurate maps that are both beautiful and precise.

The Scientific Imaging Edition supports 32-bit images. Combined with the new Image Data viewer, this provides direct access to an image's underlying numeric data, allowing graphic analysis of imagery and data from scientific sources. There's also support for industry-standard file formats and image filters, all of which makes Canvas useful for professionals in medicine and life sciences.

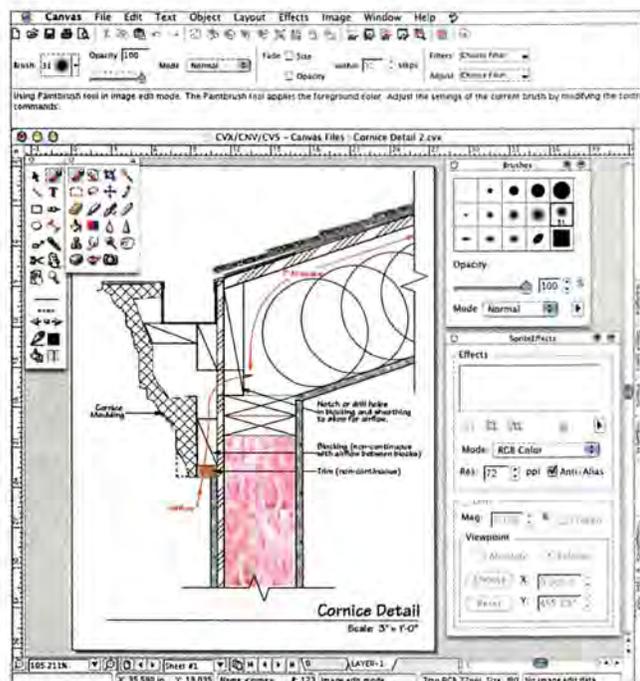
A Stretched Canvas

Canvas 9 does a fine job of providing capabilities usually found in four or five separate applications, but it's not the best option for any one task. People already committed to dedicated illustration or image-editing programs such as Adobe Illustrator or Photoshop will probably not want to switch, as those specialized applications typically outperform Canvas in their areas.

Macworld's Buying Advice

While Canvas is an excellent technical-illustration program, we wouldn't recommend it over a full-blown CAD program; it just doesn't have all the tools an architect or an engineer needs in order to create technical drawings. However, if you want technical- and graphic-design capabilities without extreme specialization in one package, Canvas is your best bet.

If you already use Canvas, you'll enjoy the interface upgrades. If Illustrator and Photoshop lack the precision you want, and if a CAD program stifles your creative expression, then Canvas is the tool for you. □



Helpful Interface The Properties bar, which sits beneath the main menu and the toolbar, keeps track of selected objects and tools, and shows you appropriate options.

Select a new object or tool, and the bar changes to show the appropriate options. Properties—such as scale, dimensions, object locations, level of opacity, fonts, and kerning—are constantly displayed at the top of the main window, without intruding on the drawing. Available at a click from the Properties bar is the new dynamic help, which automatically shows detailed instructions for the current tool or object and doesn't take up a lot of screen real estate.

Improved palette management gives you more control over palette and subpalette

The Circle is Complete



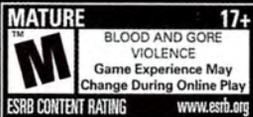
HALO

Join the battle. Live the epic adventure yourself.
The most anticipated game in Macintosh history is now available.

Unlock the secrets of Halo to save mankind from the ruthless Covenant swarms. Take the fight online in customizable head-to-head multiplayer competitions against up to 15 opponents playing on Macs and PCs. Break open a redesigned arsenal complete with the wicked new fuel rod gun. Then go mobile in the redeveloped Rocket Warthog and Banshee. This is Halo evolved.



Now with online multiplayer



BUNGIE

gearbox
SOFTWARE

westlake
INTERACTIVE

POWERED BY
game spy

Microsoft
game studios

www.macsoftgames.com

MacSoft

©2003 Microsoft Corporation. All rights reserved. Bungie, Halo and the Microsoft Game Studios Logo are registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries and are used under license from owner. Other products and company names mentioned herein may be trademarks of their respective owners. All rights reserved. The ratings icon is a trademark of the Interactive Digital Software Association. GameSpy and the "Powered by GameSpy" design are trademarks of GameSpy Industries, Inc. All rights reserved. Halo for Macintosh is published by Destineer, Inc. under license from Microsoft Corporation. MacSoft is a registered trademark of Destineer.

Choose 30 at www.macworld.com/getinfo

Get everything
you're looking for!

get info
Macworld Reader Service

"Get Info" with options! Now you can get information on all the products and services you see in Macworld. And get it faster. Simpler. Easier. All you need to do is visit one Web site:

www.macworld.com/getinfo

and select products, categories, or advertisers that you want to know more about. That's it. You can choose to have the information delivered to you by e-mail, regular mail, or even telephone. Or you can click on a link that will take you to the company's Web site in one easy step.

We want to make sure that you get all the information you need to make the best buying decisions—and so do our advertisers. So take advantage of this opportunity to see all the details, and get info now!

Macworld
The Mac Product Experts

REVIEWS

Revolution 2.1

Development Tool Breathes New Life into Old Card Game

BY ANDY IHNATKO

HyperCard? That's dead, isn't it? Oh, sure, it was great back in the 1980s. So versatile it defies ready definition, HyperCard lets ordinary people create their own software without having to conform to the strict rules of a formal programming language. But the last time Apple updated it (1998), Macs were made out of vacuum tubes and corn-cobs. AppleScript Studio and RealBasic, while they're nowhere near as easy to learn and use, have stepped into HyperCard's role: the nonthreatening way to write software. But non-programmers everywhere can now rejoice: Revolution 2.1, a HyperCard-compatible development environment, has come along with enough power to wake the dead.

On the surface, Revolution works much like the HyperCard we knew and loved. Your program is a set of blank cards. Just draw buttons, text fields, and other interface doodads; then assign simple actions to some of those elements with Revolution's Transcript language. You'll wind up with a card "stack" that's a working, running piece of software.

Revolution can even import your old HyperCard and SuperCard stacks, and the program goes far beyond those applications. When you think of a HyperCard stack, you certainly don't think of a traditional-looking OS X application featuring menus, multiple windows, drawers, and sheets. You certainly don't imagine a stack that accesses SQL databases; speaks XML, HTML, and RTF fluently; supports HTTP, FTP, and TCP sockets; and takes full advantage of the system shell.

All that sounds more like AppleScript Studio and RealBasic territory, but it's well within the purview of Revolution Express, the basic edition of the program. Take one step up to Revolution Studio, and you get the king of write-once, run-everywhere. With just a few mouse-clicks, you can make the same stack run on OS X, OS 9 and earlier, Windows, Linux, and several flavors of Unix. Even RealBasic, which supports Windows, can't create solutions for every desktop in a large and diverse office. And with a final leap to Revolution Enterprise, you get all of the above, direct support for Oracle databases, and enhanced developer support from the program's publisher, Runtime Revolution.

All in all, no other software-development environment packs this much power and flexibility into such a simple package. You'll have to learn the Transcript language to make the most of Revolution, but the system is heroically well documented.

Naturally, there are drawbacks. The stand-alone apps you build in Revolution run more slowly than comparable RealBasic or AppleScript Studio projects, and they



Cover the Earth in Executables Projects created in Revolution can conceivably be deployed nearly anywhere.

take up a lot more space. Also, Transcript is a proprietary language, so, unlike BASIC or AppleScript, you can't use it to program in another environment.

And while Revolution is considerably more powerful than HyperCard, it lacks the flexibility of a conventional software-development environment.

Macworld's Buying Advice

Revolution 2.1 is a real accomplishment: once again, we have a development environment for both newbie programmers and experienced consultants who need to get working apps quickly into the hands of clients. Just don't imagine that you'll be able to build the ambitious programs you can turn out with RealBasic and Xcode. *Viva la Revolution!* □

RATING: ★★★★★

PROS: Broad support for networking, database access, and XML; can build apps for many different operating systems.

CONS: Apps are larger and run more slowly than those created in more-traditional programming environments; simplicity comes at the price of flexibility.

PRICE: Revolution Express, \$149; Revolution Studio, \$299; Revolution Enterprise, \$999

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Runtime Revolution, info@runrev.com, www.runrev.com

Canon Digital Rebel

The Digital SLR for the Rest of Us

BY JEFF KELLER

Canon has lowered the bar for digital SLR (D-SLR) cameras—the price bar, that is. The least-expensive digital SLRs cost \$1,499 until last August, when Canon introduced the Digital Rebel, at \$899 for only the body or \$999 for the body plus an 18mm–55mm lens. D-SLRs offer top-notch performance, photo quality, and expandability, and the Digital Rebel is a welcome change from expensive, and often slow, fixed-lens cameras.

How did Canon knock \$600 off the price of its previous low-end D-SLR, the EOS 10D? First, it used an all-plastic body, which doesn't feel nearly as nice as other D-SLRs but doesn't feel cheap, either. Second, the company made internal changes to the camera, allowing for a new, low-cost EF-S lens mount. The 18mm–55mm lens in the \$999 kit is an EF-S lens that works only on the Digital Rebel. It's very impressive, especially since you get it for only \$100 more. Other EF lenses work fine on the Digital Rebel, too. (Note that with the 1.6× focal-length conversion ratio, the 18mm–55mm lens is really 28.8mm–88mm.) Third, Canon reduced the firmware's capabilities, in both features (for example, narrowing the ISO range) and performance (giving it a slower, lower-capacity burst mode). If you want more shooting control, look closely at the differences in this area (check out the comparison chart at www.dcresource.com), though the firmware issues probably won't bother the average person upgrading from a traditional digital camera.

The Digital Rebel supports CompactFlash Type I and II cards, including the Microdrive. And it supports the FAT32 disk format, so it can read memory cards larger than 2GB. Its rechargeable lithium-ion battery, the same one several other Canon cameras use, delivers about 600 shots per charge without the flash and 400 with it. You can add nearly any accessory imaginable, from lenses to flashes to remote controls. Unlike other Canon D-SLRs, the Rebel doesn't support a flash attached via a PC sync port—it does have a hot-shoe, though.

The Digital Rebel performs superbly; it focuses quickly and accurately (accuracy was sometimes a problem for the EOS 10D), and it allows you to shoot as fast as you can compose your next shot. The camera uses the flash as an AF illuminator, which allows for great low-light focusing. The downside is that you're then required to take a flash picture.



The Rebel offers automatic and manual shooting modes. Manual shutter-speed selection ranges from 30 seconds to $\frac{1}{4,000}$ of a second, and a bulb mode lets you keep the shutter open for as long as 2.5 hours. Unlike the EOS 10D, the Digital Rebel doesn't let you select metering and focus modes. Canon also stripped out the custom functions found on the 10D, skewing the Rebel toward the amateur audience.

But the company didn't skimp on photo quality. Compared with the average digital camera, the Digital Rebel takes excellent photos with good color and exposure, very low noise, and incredible detail. To better please its target audience, Canon has boosted the sharpness, contrast, and saturation at the default settings. It also made the menus much easier to navigate—the Digital Rebel feels more like a consumer camera than a pro SLR.

Macworld's Buying Advice

If you're tired of sluggish performance from digital cameras, or if you have a collection of Canon lenses you want to keep using, then the Digital Rebel is a real bargain. It lacks some features of Canon's previous low-end digital SLR, the EOS 10D, but the average shooter probably won't miss them. The Digital Rebel is an excellent camera if you're ready to dive deeper into digital photography. □

RATING: ★★★★★

PROS: Excellent image quality; excellent performance; easier to use than other digital SLRs; great value; expandable.

CONS: Many manual features missing, compared with the EOS 10D; plastic body; AF illuminator works only for flash shots.

PRICE: body only, \$899; with 18mm–55mm lens, \$999

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Canon, 800/652-2666, www.canoneos.com



FontAgent Pro, the face nouvelle of font management and repair is très fantastique! For creating designs that are an eyeful towering above the rest, FontAgent Pro—c'est magnifique. Our exclusive Fontezvous technology takes Apple's Rendezvous to new heights. By automatically finding and sharing fonts on the network, FontAgent Pro eliminates messy server set-up and maintenance faux pas!

Ease of use, reliability, industry-best diagnostics and repair, unmatched professional features, blazing speed, and automatic font activation make FontAgent Pro le grand triomphe of font management. Our interactive FontPlayer will have you exclaiming "Ooh-la-la!"

To rendezvous with Insider and get your copy, just call us now or go to www.insidersoftware.com/macworld.

So get off your can-can and get fontez-vous-ing—Pronto!

 **FontAgent Pro**
The new face of font management and repair

Insider Software, Inc.
www.insidersoftware.com • 866.216.1399

**Rendezvous with Insider at Macworld
Booth 2511**

PhotoEdit 1.3

Low-Priced Image Editor Is Underpowered

BY GALEN FOTT

If you use iPhoto (★★★★, April 2003) to organize your digital snapshots, you've probably reached the limits of that program's simple image-enhancing controls. The \$30 PhotoEdit 1.3, from macXware,



Can't See a Thing Select red-eye-afflicted pupils in your image, and the Adjust Colors window offers a nonzooming preview that's far too small to work with.

offers to extend your capabilities, but the program has some deficiencies that prevent us from recommending it as even an adjunct to iPhoto, let alone a stand-alone image editor.

Beyond (and Behind) iPhoto

PhotoEdit runs in OS X and OS 9, and it saves images in most standard formats (except GIF). The program has the traditional toolbox- and palette-based interface of other image editors, but its menus are poorly organized. This is particularly unfortunate because many of the program's most-powerful commands are buried in the easy-to-miss Image Filters dialog box, which offers alternative sharpening tools that are better than the more conspicuous Sharpen and Heavy Sharpen menu options.

You'll still want to use iPhoto to rotate and crop images and to fix red-eye; PhotoEdit doesn't offer easy ways to do these crucial things. However, the program does offer some interesting features: the unique Fracture effect breaks your image into fragments. The 3D Anaglyph feature produces 3-D images (glasses not included). The well-designed Brush Editor offers an intuitive approach to designing custom brush shapes (though the program direly needs an easy way to adjust brush size as you paint). And though it's unlikely to appeal to PhotoEdit's target audience, the Script Editor lets you

RATING: ★★

PROS: Good range of image formats; some effective image-enhancing features; interesting special-effects filters; powerful brush and script editors; variety of effects.

CONS: Awkward cropping, rotating, and red-eye tools; poorly organized menus; no incremental brush-size adjustment; slow performance with larger images; printing bug; inaccurate manual.

PRICE: \$30

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: macXware, 800/842-7787, www.macxware.com

use the BASIC programming language to create your own plug-ins.

When working with photos in the 3-megapixel range, PhotoEdit chugs along very slowly. And before you try to print your images, you'll have to visit the company's Web site to download a software patch.

Macworld's Buying Advice

As an image editor—even as an adjunct to iPhoto—PhotoEdit 1.3 comes up short in several important ways. While iPhoto can pick up most of the slack in these departments (such as red-eye removal and cropping), there are better low-cost image-editing applications than PhotoEdit. ArcSoft's \$30 PhotoImpression 4 is one good candidate; it also offers layers and multiple undos, two features that PhotoEdit sorely lacks. □

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

Phone: 1-800-257-6381 Fax: 281-353-9868 Email: sales.info@alsoft.com Web Site: www.alsoft.com

©2003 Alsoft, Inc. DiskWarrior is a registered trademark of Alsoft, Inc. Other product names are trademarks of their respective companies.

HP Scanjet 4670

Stylish Scanner Marred by Mediocre Software

BY CHRISTOPHER BREEN

If you consider Hewlett-Packard a dependable but somewhat stodgy hardware company, you should think again. The company's HP Scanjet 4670—a sleek, see-through USB scanner—is anything but boring. Regrettably, though the device is a vision of high-tech loveliness, the accompanying software is a loose amalgam of inconsistent utilities.

This eye-catching 2,400-dpi, 48-bit color scanner has a translucent top and bottom. Using the included holder, you can scan items with the scanner either standing vertically on its edge or lying flat. To scan vertically, you pull the scanner lid toward you, slip a document between the scanner and the stand, push the scanner lid back into place, and initiate the scan (through the HP Director software or a TWAIN-compatible application such as Adobe Photoshop, or by pressing one of the scan buttons on the device's side). You can even remove the scanner from the holder and place it atop items you want to scan—a book on your desk or a picture on a wall.

Surprisingly, the clear top and bottom don't cause increased light bleed-through, even for documents printed on thin paper—

the HP scanner produced less bleed-through than my flatbed Epson scanner. However, navigating through the various bundled software components to get the results you want can be trying. The online documentation provides little information about using the scanner with the bundled Readiris Pro 7 OCR application, from IRIS. And some of the software isn't very good. The HP Gallery application resembles iPhoto but lacks that program's elegant integration and good looks, and the Memories Disc application (for burning CDs of your pictures) is both unintuitive and unattractive.

Macworld's Buying Advice

If you're looking for a scanner that's as beautiful as your Mac, the HP Scanjet 4670 is the one for you. Just be sure to bring your own software. □



RATING: ★★★½

PROS: Good-looking; vertical-scanning option.

CONS: Uninspired and unintuitive software.

PRICE: \$200

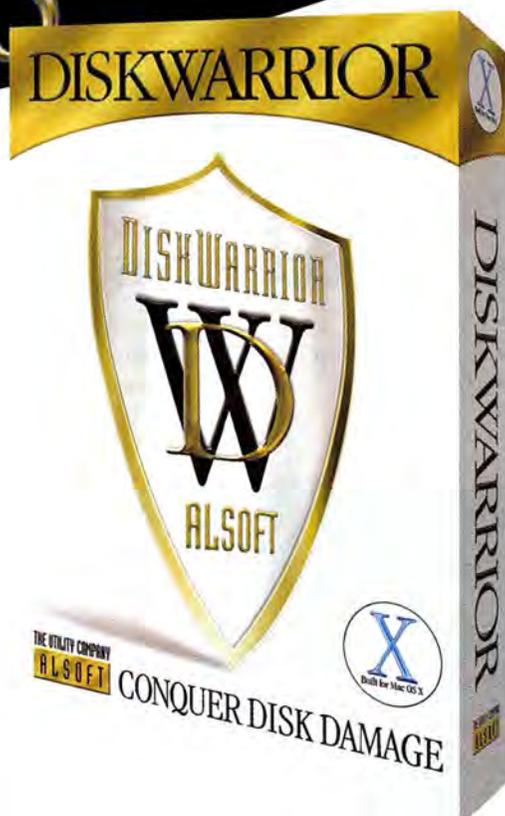
OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Hewlett-Packard, 800/474-6836, www.hp.com

CONTINUES

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

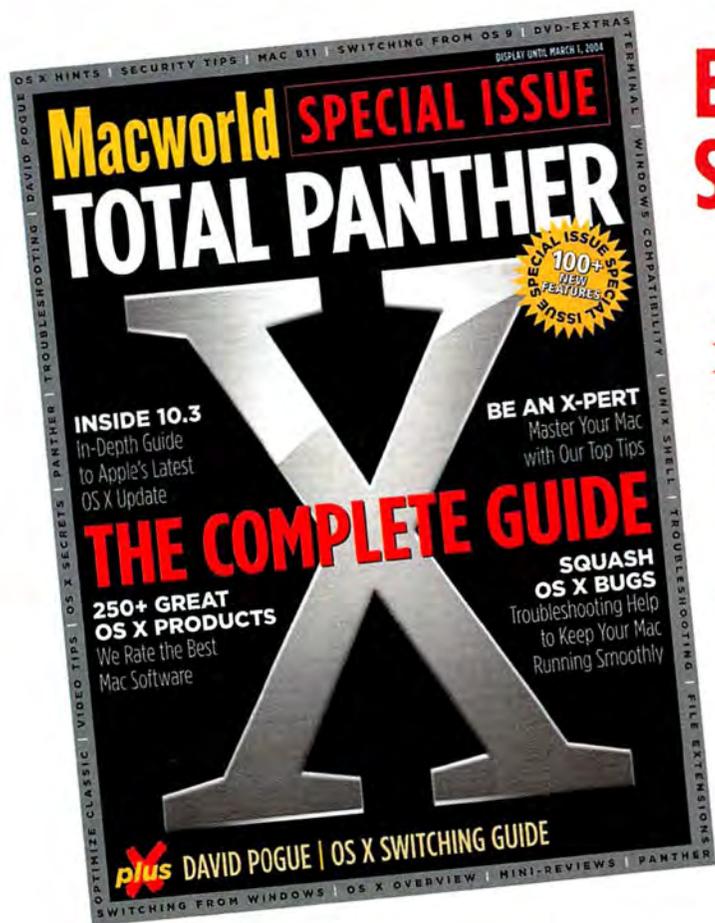
Be prepared. Don't wait until after you have a disk disaster to buy your copy of DiskWarrior. Bob LeVitus, aka Dr. Mac, said, "I feel naked without DiskWarrior." You can believe MacHome magazine when they said, "DiskWarrior is a quick, one-click solution to faster, more stable hard drives."



Choose 141 at www.macworld.com/getinfo

TOTAL PANTHER: THE COMPLETE GUIDE

ON NEWSSTANDS NOW



EXCLUSIVE SPECIAL ISSUE



100+ FEATURES REVEALED AND 250+ PRODUCTS RATED

PLUS THESE GREAT FEATURES

- Security Tips
- OS X Secrets
- Troubleshooting
- Switching From OS 9
- MAC 911
- Mini-Reviews

BONUS DVD

- Exclusive! Web links to latest Panther Updates
- Panther Video tips
- 4GB Shareware and Games
- And top Mac productivity demos!

ORDER NOW

ONLINE www.macworld.com/panther

BY PHONE 1.800.288.6848

For only \$7.95 plus \$4 shipping & handling

THE MAC PRODUCTS EXPERTS
Macworld

*Delivery available to US residents only. Issue will be sent priority mail.

iPod Fever!

Yes, You CAN Take It With You— And Do It In Style

iPods—they're sleek and cool, and they're the hottest personal entertainment gadget around. And no wonder: Although it's small enough to slip into a shirt pocket, an iPod holds up to 10,000 tunes on its internal hard drive. That's enough music tunes, says Apple, to keep you continuously wearing earbuds for a month.

What drives this palm-sized tune-toter's burgeoning popularity? Its great looks and mammoth storage capabilities? Sure. But there's more to it than that. iPods, along with cell phones, PDAs, and laptops, help fulfill the human desire for independence. The iPod not only delivers high-quality MP3 audio, it also delivers the freedom to roam while staying connected to music. Margaret Streicher, an industrial psychologist who specializes in marketing analysis for advertisers, believes that iPod customers are buying more than a music player—they're buying a lifestyle. "When you think about the ads you see for products like laptops, computers, and cell phones, the vendor's implied promise is that its product will allow

you to cut the cord and set yourself free." With total sales of the iPod about to top 1.5 million since its introduction in 2001, the strategy is right on target.

iPod Innovations

The iPod has captured the imagination of techies around the world. Take Dr. Bott, a leading distributor of cleverly innovative Macintosh and other technology specialty products. When the iPod was first introduced, it quickly caught on in a big way among the staff at Dr. Bott. It wasn't long before they began to imagine all sorts of places to use the iPod: connecting it to an entertainment system, a car stereo, a microphone input in a boom box or a computer—you name it.



When the iPod was first introduced, it wasn't long before the staff at Dr. Bott began to imagine all sorts ways to connect it to an entertainment system, a car stereo, and more—you name it.

PocketDock

Use standard FireWire cables with your 3G iPod!

The tiny PocketDock lets you connect the new iPod's docking port to a standard 6-pin FireWire cable, alleviating the need to pack the Apple docking cable with you when you travel.



Tiny, light — indispensable!

PocketDock is an elegant, simple solution with a beautiful design that perfectly matches your iPod.



Your source for the newest, coolest iPod gear!
www.drbot.com Toll Free: 800.541.1167 503.582.9944

Dr. Bott OFF

The ThinkDifferent Store

For all your iPod and Mac gear.

Belkin Voice Recorder for iPod with Dock Connector
\$49.00



Contour Showcase for 3G iPods
\$39.95



iSkin EXO²
\$29.99

iTrip FM Transmitter for 3G iPods
\$34.95



PodSleeve 3G iPod Case
\$19.95

www.ThinkDifferentStore.com



Dr. Bott's Universal Connection Kit is fully compatible with both original and 3G iPods.

Thus was born the idea for the iPod Connection Kit, an ingenious collection of just about every option needed for connecting the iPod to all of these devices—all in one neat box.

Included in Dr. Bott's iPod Universal Connection Kit (FM version) are:

- Auto Charger for iPod
- FM Stereo Transmitter
- PocketDock (see "Just a Dock Away" below)
- 2 AAA batteries (for FM transmitter)
- Mini Stereo Extension Cable (male/female)
- Mini Stereo to RCA Cable
- Mini Stereo Connection Cable (male/male)
- iPod Carry Pouch

What's more, the iPod Universal Connection Kit is fully compatible with both original and 3G iPods.

The work done in bringing the iPod Universal Connection Kit to market is emblematic of the unique value proposition that Dr. Bott brings to the world of technology distributors. In the words of Eric Prentice, Dr. Bott's president: "We not only distribute great technology products—we also have a direct hand in the development, design, and packaging of many of these products. We were the first to market with accessories for the iPod, and we are dedicated to finding the next cool thing and doing everything we can to bring it to market effectively."

For more information on the iPod Universal Connection Kit and on Dr. Bott, click on www.drbot.com.

Just a Dock Away

There are bound to be times when an iPod user on the road, listening to his libraries of great music, finds he wants to hook up with another Macintosh or PC. Maybe he wants to swap some files or just recharge the iPod's batteries. Only he didn't bring his special iPod docking cable, which is safe and sound at home, connected to his computer.

Sound familiar? If so, then the low-cost PocketDock from

The complete solution for the active iPod™
Includes armband and belt clip for maximum versatility



sportsuit
convertible

MARWARE
954-927-6031



www.marware.com

SendStation (www.sendstation.com) is just what you need to get connected anywhere. This tiny device lets iPod users connect the docking port to a standard 6-pin FireWire cable, thereby delivering more fully on the iPod's promise of freedom and independence. And because the PocketDock is both light and tastefully designed, it is a perfect complement to the equally stylish iPod.

You can order the PocketDock from Dr.Bott by clicking on www.drbot.com now. Dr. Bott's Web site also lists resellers around the country and around the world where a very wide variety of highly innovative technology and entertainment products can be purchased at competitive prices.

When You Need Your Space

There are times when even the most ardent of iPod aficionados seek a degree or two of separation from the device. With the innovative naviPod from TEN Technology (www.ten-technology.com), iPod users can do just that—cut loose from their machines with a remote control that lets them control the iPod's audio functions from across a room. This allows users to crank up (or down) the volume, skip over tunes, pause the playing for some phone time, or just relax in the comfort of an easy chair.

The naviPod for 3G is for the third and current generation of iPod models. It includes an audio port, the volume of which can be controlled by the naviPod remote, and a chrome stand for use when the iPod is not docked. The naviPod also features a 5-button infrared remote control and a receiver unit that plugs right



NaviPod, from TEN Technology, lets users control the iPod's audio functions from across a room.

into the top of the iPod.

The naviPod is available through Dr. Bott at www.drbot.com.

Where Computer Geeks Meet Music Freaks

It's a fact: most digital products made for music aficionados are designed and built by engineers. But NexTune's music management software breaks the mold. It's crafted—from the ground up—by

Cut loose with the new naviPod.



 **navipod**™

Finally, a wireless remote for the iPod.

Your source for the newest, coolest iPod gear!

www.drbot.com Toll Free: 800.541.1167 503.582.9944

Dr. Bott OFF

music professionals who also happen to be great programmers. The result is software for the Mac OS X that integrates easily with iTunes and dramatically enhances your iPod enjoyment.



NexTune gives iPod users what they've been sorely missing: namely, easy control over their fast-growing digital music

libraries. With NexTune, users can easily personalize all their music using the NexTune Profiler, which prompts users with simple questions to organize songs by tempo, pace, style, and a host of other attributes.

What's more, the NexTune Profiler automatically calculates the beats per minute in any song—an industry first—while the NexTune Playlist Composer automatically arranges songs on the playlist in an order that maximizes listening pleasure.

Other NexTune features include printing capabilities for CD disk and jewel-case labels; a reporting capability that generates paper reports on your music library; and duplicate checking that automatically identifies songs with the same title.

For more on NexTune, "where computer geeks meet music freaks," click on www.nexttune.com. And take note: NexTune is giving away some cool stuff right now, to celebrate their February product launch.



iPod Armor from Matias will keep your iPod looking as new as the day you bought it.

iPods That Play Rough

The iPod is built to last, but even the best-built technology needs some extra TLC. The problem with most iPod cases is that they are either too soft to protect the iPod or they are too hard, particularly where they make contact with the iPod. But with the innovative iPod Armor from Matias, you get the best of both worlds. That's because iPod Armor sports a rugged aluminum exterior and a unique friction-foam interior to safely hold the iPod in place and protect it from shocks.

With the same ingenious design as the original iPod Armor, Matias recently announced a new version with docking-port access. It completely encases the iPod, leaving only the top ports accessible while protecting the docking connector behind a removable rubber panel. All that protection will keep your iPod looking as new as the day you bought it, making it ideal for the image-conscious owner. It's smart insurance for anyone looking to keep his or her iPod safe

from life's daily hazards. Visit www.ipodarmor.com for more information.

Think Different: An iPod Supermarket

With some distributors of quality iPod products and technology products, there's always a trade-off among value, selection, and



We're all about the next cool thing!

Dr. Bott specializes in bringing cool Mac and iPod products to market. Whether it's our own or distributed for one of our innovative vendors: **If it's cool, Dr. Bott will have it.**

Your source for the newest, coolest iPod gear!



www.drbott.com Toll Free:
800.541.1167 503.582.9944



The iTrip FM transmitter for the iPod, from the ThinkDifferentStore, can play music through any FM radio.

service. But at the ThinkDifferentStore, customers never have to compromise. There you will find just about any case made for the iPod, as well as a wide variety of iPod accessories at highly competitive prices from companies like Griffin Technology, Marware, Contour Design, Belkin, iSkin, and RadTech.

It is truly a one-stop shopping mecca for all iPod needs.

What separates the ThinkDifferentStore from its competitors is the company's attention to customer service. Whether it's a simple query on a product's capabilities, a product recommendation, or comparative pricing information, the service staff is there to help with friendly, courteous, and respectful staff experts. See for yourself at www.thinkdifferentstore.com.

Run With It

Yes, you can take it with you. And thanks to Marware's SportSuit Convertible case with patented clip system, you can take your iPod just about anywhere, with confidence that it will be safe and sound.



With Marware's SportSuit Convertible case, you can take your iPod anywhere.

The SportSuit Convertible case offers rugged protection for the iPod on the go, while the patented belt clip system offers interchangeable clip options. An armband and belt feature makes it ideal for jogging or working out. And that's not all; with the SportSuit Convertible, you also get:

- Ability to sync the iPod while in the case
- 2mm neoprene outer construction
- Fully lined interior
- Plastic inserts at sides and back for impact protection
- Plastic screen protector
- Removable protective lid
- Headphone and remote storage pocket on lid

For more information on this and other iPod cases, as well as laptop cases, please visit www.marware.com.

No Static At All

"I'm out of the office and in the car three days a week, calling on customers," says Brian Hickey. "I got real tired of listening to music that some DJ at a radio station decided I should hear." Brian bought his iPod for \$300, and he's spent another \$500 for the 1,000 songs on his iPod, many downloaded from Apple's iTunes Music Store. "Spending the money doesn't bother me.

protect the one you love.



iPod armor™

Stylish, lightweight and rugged, iPod Armor's anodized aluminum shell and protective foam interior keep your iPod looking as new as the day you bought it.

Fits all iPod models, including original iPods and newer docking models.



www.ipodarmor.com

toll free: 1-888-663-4263

matias
CORPORATION

telephone: 905-265-8844

iPod Connection Kit

Make your iPod the center of your audio experience, at home or on the road.



- AutoCharger
- FM Transmitter
- PocketDock
- RCA Adapter
- Stereo Connection Cable
- iPod Pouch

Dr. Bott Your source for the newest, coolest iPod gear!
www.dr bott.com Toll Free: 800.541.1167 503.582.9944



Add a little something extra to your iPod.™

FMXtra™

- stereo earbuds on a lanyard
- scanning FM radio
- stereo connector



DIGISETTE™
www.digiset.com

available through
Dr. Bott® www.drbot.com

©2004 Digiset, LLC. FMXtra is a trademark of Digiset, LLC. Other trademarks are property of their respective owners.



FMXtra, from Digiset, is the ideal way to add stereo FM reception to your iPod.

My Pod is like a relaxation machine—I spin the thumbwheel, and whatever's on my mind gets moved to the back burner." Brian also bought a \$30 speaker stand: "The stand's volume control lets me play tracks at my desk without subjecting my office mates to my choices in music."

Ross Weale, an Internet product manager, uses his iPod to help him control his environment in trying circumstances. During a recent car trip, he says, his iPod basically saved his sanity.

"I hired a local car service to drive me to the airport—a two-hour trip," says Ross. "The driver was listening to a boring talk radio station; after 30 minutes, I had a headache. I asked the driver to change the station to one I could broadcast to. And, using my iPod's add-on FM transmitter, I played back-seat DJ by broadcasting to the car's radio for the rest of the trip to the airport. The driver never realized I was the one selecting the songs."

As memorialized in the old Steely Dan song, with FM radio there's just "no static at all." And to help you enjoy all the great music available across the FM dial and do it in style, Digiset (www.digiset.com) has enhanced its popular, compact FMXtra stereo lanyard earphones with auto-scan FM radio. With its handy and easy-to-use connecting pin, FMXtra quickly connects to any music player, including the iPod, for hours of listening pleasure.

Included in this latest version of FMXtra is an LCD to show the stations to which it is tuned, as well as complete volume control. Weighing in at a mere three ounces, FMXtra is the ideal way to add stereo FM reception to your iPod, and at a very reasonable price. FMXtra cable components are colored



Beauty over elegance

Introducing the much improved, better fitting and strikingly beautiful...

iSkin™ EXO2

Surface protection for the Apple® iPod.

10 GB 20 GB 15 GB 30 GB 40 GB

Includes the iSkin™ REVOCliP (rotary stainless steel belt clip), ultra-clear screen protector and safety hand strap.



iSkin.com
Designed by iSkin Inc. Toronto Canada. All Rights Reserved.

white to harmonize with the iPod. To order FMXtra, click now on www.drbot.com, the distributor of choice for iPod enthusiasts.

Make the Best-Dressed List

Like most iPod enthusiasts, the designers at iSkin believe the sleek and tasteful iPod should be seen as well as heard. That's why iSkin developed the eXo2 iPod case with contoured accents, ergonomic design, and skin-like fit.

The eXo2 is made from high-grade flexible and yet durable silicone, making the eXo2 moisture-proof as well as pliable. Its anti-static finish reduces dust and lint adhering to the surface. And the eXo2's REVOCliP is iSkin's unique solution for attaching the iPod to your belt or waist at any 90-degree angle. The clip is made of brushed stainless steel and attaches seamlessly to the eXo2 for a firm and secure connection between you and the iPod. To protect the iPod's docking and charging port from dust, dirt, and other impurities, the eXo2 features an integrated FireWire port cover. The eXo2 also includes an ultra-clear screen protector and safety hand strap.

For more information on this exciting innovation for the iPod, click on www.iskin.com now.



The eXo2 iPod case, from iSkin, is made from high-grade flexible silicone, making the eXo2 moisture-proof as well as pliable.

Giving Power to the People

It's already a perfect blend of features and form: What more could Apple add to the iPod? While they're not saying, other experts offer their opinions—and the answer is: video. "As far as end users are concerned, having potentially thousands of tunes at your fingertips is definitely empowering," says IDC analyst Roger Kay. "In addition, it would give Apple a toehold in Hollywood the rest of the industry would die for." So stay tuned—the iPod is just getting started.

iTunes ...what's Next? iPod ...what's Next? Music Store ...what's Next?



The Great iPod Give Away!
600 Free Songs ...what's Next?



Where Computer Geeks Meet Music Freaks

Log On and Win!
www.NexTune.net

No purchase necessary just log on to www.nextune.net and enter. 100 songs given away each week beginning the week of January 5, 2004. Three iPods given away on February 16, 2004. Void where prohibited. © NexTune LLC. All Rights Reserved. NexTune is a trademark of NexTune LLC in the United States and other countries. iTunes and iPod are trademarks of Apple Computer, Inc., registered in the U.S. and other countries.

STAR WARS® JEDI KNIGHT: JEDI ACADEMY™

YOU WILL NOT LEAVE THESE HALLS AS YOU ENTERED THEM.

YOU WILL UNLEARN ALL THAT YOU HAVE LEARNED.

DEDICATE YOUR LIFE TO A HIGHER PURPOSE.

USE THE KNOWLEDGE YOU ATTAIN HERE WISELY.

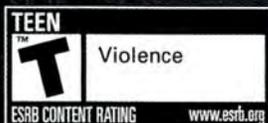
THE FORCE IS A POWERFUL ALLY. AND A TERRIBLE FOE.

DO NOT BE SEDUCED BY THE DARK SIDE.

FOR YOU ARE THE FUTURE GUARDIANS OF THE GALAXY.



www.aspyr.com



ACTIVISION®

ASPYR™



LucasArts and the LucasArts logo are registered trademarks of Lucasfilm Ltd. © 2003 Lucasfilm Entertainment Company Ltd. or Lucasfilm Ltd. & © or ™ as indicated. All rights reserved. Activision is a registered trademark of Activision, Inc. This product contains software technology licensed from Id Software, Inc. Id Technology © 1999-2003 Id Software, Inc. All rights reserved. The ratings icon is a registered trademark of the Entertainment Software Association. The Aspyr logo is a trademark of Aspyr Media, Inc. Mac and the Mac logo are trademarks of Apple Computer, Inc., registered in the U.S. and other countries.

Choose 91 at www.macworld.com/getinfo

- > Halo: Combat Evolved
- > Warrior Kings
- > Dr. Blob's Organism
- > Hollow Ground
- > ToySight

Halo Arrives

FEW GAMES IN MAC HISTORY HAVE ENGENDERED AS MUCH fervent devotion and as many feelings of betrayal as Halo. Four years ago, at Macworld Expo New York, Mac users got a first glimpse of the next version

of this monumental first-person shooter. Since then, Halo has made the rounds—first as an Xbox exclusive and then, in September, as a Windows-only release. Now, thanks to the efforts of MacSoft and Westlake Interactive, who worked practically around the clock for almost three months, Halo is where it belongs—on the Mac.

Does Halo: Combat Evolved live up to the hype? After so long a wait, some gamers will inevitably be disappointed. But I'm certainly not one of them.

Halo: Combat Evolved offers something that most recent first-person shooters lack—a good storyline. Halo includes a single-player mode that you *care* about. You assume the role of the Master Chief, a cybernetically enhanced soldier with tremendous strength, healing capabilities, and weaponry skills. You must square off against a vicious alien civilization called The Covenant, whose sole goal is the utter annihilation of the human race. Fate has brought you to Halo, a huge and mysterious ring-shaped world. Underneath the surface of this alien world lie secrets that could lead to mankind's salvation—or destruction.

Killing Covenant baddies is bound to cause some bumps and bruises, and it will wear down your ammo supply. Luckily, there's almost always another health pack or ammo clip nearby. But here's a cool twist:



The Wait Is Over Save humanity—or kill—with Halo on the Mac.

although some games allow you to holster an armory of five or ten weapons at once, Halo forces you to be a little more selective—you get only two carry-on items at a time.

Of course, no matter how great the single-player game is, you'd get bored quickly if that's all there were. Fortunately, there's a ton of multiplayer action here, too. Halo provides a game-finding service that lets you face

off against Mac and PC users. There are individual and team-based modes, such as Death Match, Capture the Flag, and King of the Hill. You'll also find plenty of other multiplayer goodies: new weapons, such as the flamethrower and the Fuel Rod Gun; new ships, such as the Banshee (a Covenant flying ship) and the rocket-equipped Warthog; six new multiplayer maps; and more.

If you've already played Halo on an Xbox, you'll find some important differences in the Mac version. For one thing, the graphics are *phenomenal*. The Mac version of Halo supports the latest in high-end graphics technology. You can play Halo at resolutions as high as 1,600 by 1,200—assuming your video system can handle them. If you're using the latest ATI (Radeon 9800) or Nvidia (GeForce FX) hardware, you can take advantage of even more graphics power by turning on vertex and pixel shading to get much richer lighting, shadowing, and special effects. And with the upcoming release of an OpenGL driver update, the game will also support full scene antialiasing, which smooths the edges of jagged polygonal objects to make the game appear more realistic. Put together, the results are truly awe-inspiring.

Xbox users will also notice how responsive Halo is on the Mac. Despite its console pedigree, this game absolutely comes alive with a keyboard and a mouse.

continues

HALO: COMBAT EVOLVED

RATING: ★★★★★

PROS: Gorgeous graphics; a story you actually care about; fun multiplayer modes.

CONS: None significant.

PRICE: \$50

OS COMPATIBILITY: Mac OS X

COMPANY: MacSoft, www.macsoftgames.com

Unreal Update

If you bought Unreal Tournament 2003 and somehow missed the free update released in late October, go to MacSoft's Web site (www.macsoftgames.com) *this minute* and download it. You won't regret it.

In this update, the game's Mac developer, Ryan Gordon, not only optimized his original code but also added new code that helps the game take better advantage of the G4's Velocity Engine. And he totally reworked Unreal Tournament's audio system. As a result of all this tinkering, single-processor Power Macs should see a 25 percent overall boost in performance. (Dual-processor machines will see a smaller boost, as they were already benefiting from some processor-sharing code in the first release.)

This new version of Unreal Tournament—dubbed 2225.1—also fixes a potential problem for Macs equipped with ATI Radeon graphics hardware and running OS X 10.3. What's more, the update finally eliminates the need to have the game's CD-ROM inserted during game play (though you'll still need to have a valid serial number). This addresses one of the main complaints I had when I reviewed the game last September.

The keyboard layout is sensible and easy to remember, and the game supports multibutton mouse configurations and scroll wheels.

Level design in Halo can be vast, but you'll rarely get lost. Twisty passages often have visual cues that let you know where you need to go. Halo also makes great use of inverse kinematics—a form of 3-D modeling—to add more realistic motion to objects. Watch the limbs of your Covenant foes fly as you launch a grenade into their midst, or see fellow soldiers shudder and shake as your ship hits rocky terrain.

A glance at Halo's system requirements may startle some gamers, but in fact, MacSoft has been fair: at the bare minimum, you'll need an 800MHz G4 or faster with a 32MB video card. That's consistent with a top-model, two-year-old, flat-panel iMac. It's also fairly consistent with the PC version's system requirements. Of course, to really see what this game can do, you'll want at least a 1GHz machine. I played on a 1GHz G4 with 512MB of RAM and a GeForce4 Titanium card, and I saw playable frame rates throughout. In fact, Westlake has done a fantastic job of eking out every last ounce of performance it can from the game.

I also had a generally good experience with online play—as long as I kept ping times (the amount of time it takes for a packet of data to travel from your Mac to the host server) under 150 milliseconds. Higher ping times sometimes result in periods of latency, which will make you a sitting duck in a game like this. But while you shouldn't have a problem finding a server with sufficiently low ping times, you'll get the best results when playing on a LAN. In fact, I can't think of a better game for a LAN party.

The Bottom Line By any measure, Halo: Combat Evolved is an absolutely fantastic game. Westlake and MacSoft truly pulled out all the stops to make this one of the best first-person shooters the Mac has ever seen.

Medieval Melee

Sometimes, fighting just two or three bloodthirsty enemies at a time isn't enough. If you long for the thrill and challenge of waging large-scale combat, take a look at Warrior Kings, a new strategy game from Feral Interactive. Despite some flaws, Warrior Kings brings unique charm and challenge to an old genre.

Warrior Kings puts you in the role of Artos, a young king in the midst of an epic struggle to regain control of his kingdom. Loosely based on medieval Europe, the game draws from European history and folklore. As a result, you'll find that Warrior Kings is more based in

reality than some other games in this genre—for example, all the combatants are human. (However, in some cases, you can call upon mystical forces to augment your abilities.)

Warrior Kings offers all the usual elements of a real-time strategy game (RTS): you'll gather resources, develop military units, and send them into battle. But it also adds some unique touches that help separate it from the pack. For example, there's a branching story line that lets you choose to follow Pagan, Imperial, or Renaissance paths. Each path provides you with access to different era-specific technology and different offensive and defensive strengths.

Another unique element is the game's emphasis on managing and maintaining supply lines. This is a grittily realistic aspect of war strategy that many games forget—it's one thing to harvest resources; it's another to put them to use.

Warrior Kings is at its best when you're commanding hundreds of soldiers on a 3-D battlefield and manage to make them respond to your commands effectively. Few other games could manage this scale without slowing to a crawl. However, this expansive scope can be a detriment, too—maneuvering your camera around the battleground can leave you lost or confused about your position or your perspective.

The game also suffers from fairly obtuse artificial intelligence. Enemy troops and your own men exhibit a painful lack of situational awareness. What's more, learning how to maneuver troops and win battles will take time. Despite a tutorial mode that offers an overview of how things work, I had to play some levels repeatedly until I figured out what I was doing wrong.

Multiplayer gaming in Warrior Kings is another weak link. The game doesn't let you take on Windows players. And, at press time, only a small pool of Mac players was available online via GameRanger.

The Bottom Line Warts and all, Warrior Kings is a lot of fun to play. It will particularly appeal to RTS fans looking for new challenges. However, at \$50 it's a little expensive—especially given its shortcomings.

Oozing Organisms

Mathematician John Conway's computer simulation, Life—in which nebulous creatures grow and die off in never-ending, shifting patterns—is possibly one of the most replicated games in existence. This continues

WARRIOR KINGS

RATING: 

PROS: Great large-scale battles; offers unique elements for experienced strategy gamers.

CONS: Artificial intelligence occasionally fumbles; limited multiplayer support; pricey.

PRICE: \$50

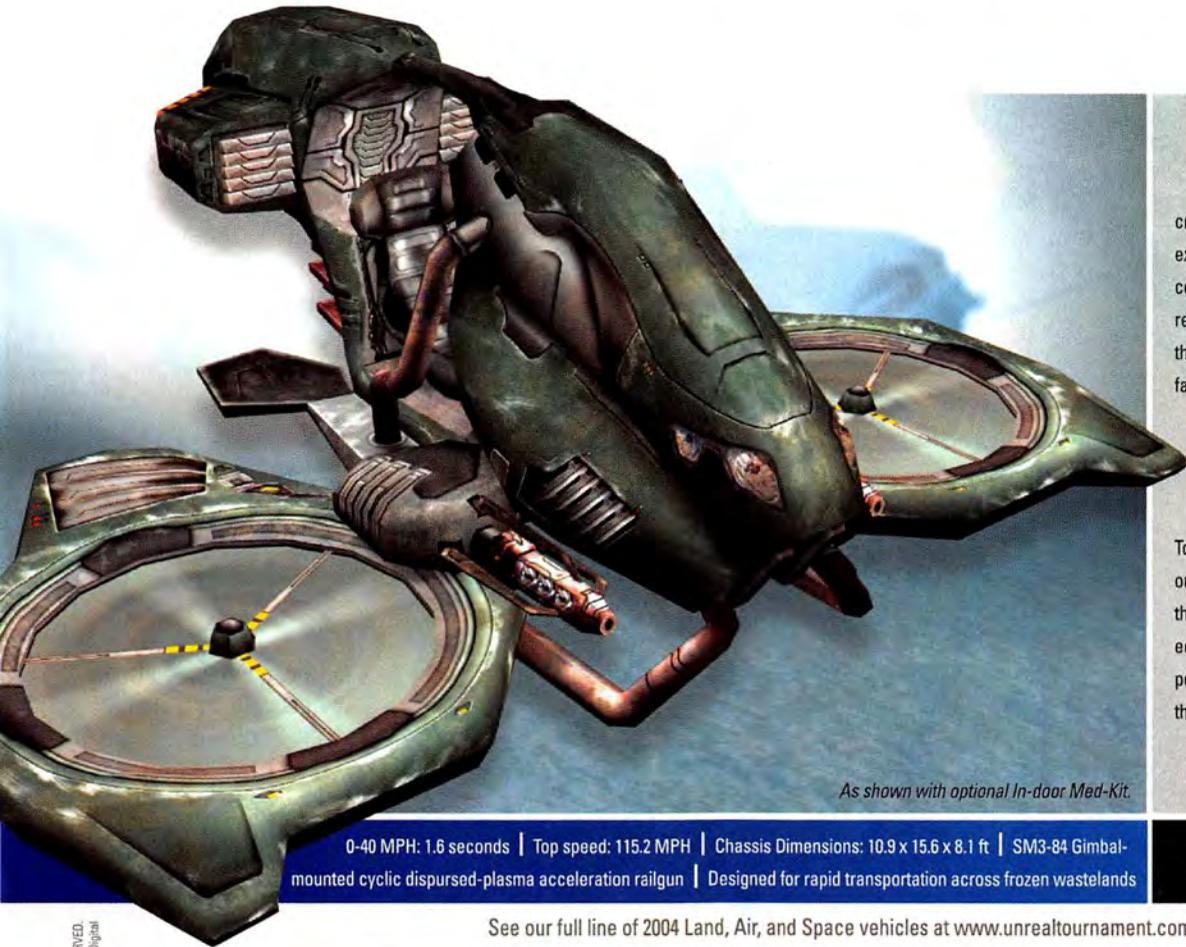
OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Feral Interactive,
www.feralinteractive.com



Weekend Warrior King Harvest resources, raise armies, and keep your supply lines open at all costs in Warrior Kings.

The New Unreal® Tournament.



The greatest gladiator sport ever created is redefined for 2004. Now, experience more than double the content of our previous model with refinements for the discriminating thrill seeker who likes their action fast, futuristic and gloriously bloody.

We introduce: the Unreal® Tournament range of vehicles. Just one of the massive new additions that comes standard with the 2004 edition. Pleasing to the eye, powerful to the touch, punishing to the enemy.

As shown with optional In-door Mad-Kit.

0-40 MPH: 1.6 seconds | Top speed: 115.2 MPH | Chassis Dimensions: 10.9 x 15.6 x 8.1 ft | SM3-84 Gimbal-mounted cyclic dispersed-plasma acceleration railgun | Designed for rapid transportation across frozen wastelands

2004 MANTA

See our full line of 2004 Land, Air, and Space vehicles at www.unrealtournament.com.

- > SCORPION
- > AW-X
- > Liandri DH-85
- > LEVIATHAN
- > J-1280G Raptor
- > FIGHTER H
- > FIGHTER SK

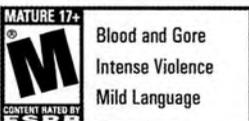
UNREAL® TOURNAMENT 2004 © 2003 Epic Games Inc. Unreal and the Unreal logo are registered trademarks of Epic Games Inc. ALL RIGHTS RESERVED. All other trademarks and trade names are the property of their respective owners. Unreal Tournament 2004 was created by Epic Games, Inc. and Digital Extremes. Manufactured and marketed by MacSoft, Mfg. MN. Developer is a trademark, and MacSoft is a registered trademark of Digital Extremes, Inc.



Reload. Rev Up. Ride Out.
Coming simultaneously for Mac.

www.macsoftgames.com

\$10 discount available for 2003 model owners via mail-in rebate with proof of purchase.



Choose 30 at www.macworld.com/getinfo



The Sims™

superstar

EXPANSION PACK*

Too sexy for you sims?
Then strut your stuff
on the catwalk.

YOUR SIMS ARE FAMOUS!

Indulge in a mud bath,
massage, or a visit to
the oxygen bar.

*These Expansion
Packs are also
available:
The Sims™ Livin' Large
The Sims™ House Party
The Sims™ Hot Date
The Sims™ Vacation
The Sims™ Unleashed

Dazzle directors rock
the recording studio,
or light up the
fashion runway.

www.aspyr.com



ASPYR™

Authorized Electronic Arts™ Distributor

MAXIS



*Requires a full version of The Sims™ to play.

© 2003 Electronic Arts Inc. Electronic Arts, The Sims, Maxis, the Maxis logo, EA GAMES and the EA GAMES logo are trademarks or registered trademarks of Electronic Arts Inc. in the U.S. and/or other countries. All Rights Reserved. Maxis™ and EA GAMESTM are Electronic Arts™ brands. Made in the U.S.A. The ratings icon is a registered trademark of the Entertainment Software Association. The Aspyr logo is a trademark of Aspyr Media, Inc. Mac and the Mac logo are trademarks of Apple Computer, Inc., registered in the U.S. and other countries. All other trademarks and trade names are the property of their respective owners.

First Look: ToySight



By the time you read this, Freeverse Software should be ready to release what may just be one of the coolest uses for Apple's iSight. ToySight is software that turns any compatible FireWire camcorder or Web cam into a game controller (www.toysight.com).

Inspired at least in concept by a Sony PlayStation 2 peripheral called the EyeToy, ToySight puts you in the game by letting you control sliders and target reticules using physical gestures. There's also a toy mode that's great for parties: activate it, and you can turn on special effects that make you look like a ghost or show sparks flying from your fingers.

I've played with a development version of ToySight and can say it's a terrific amount of fun. The included games are varied. They'll test your skills, and they look great. The games also feature a soundtrack that's sure to keep your toes tapping. I hope Apple catches on to how cool this is and offers Freeverse and ToySight's developers, Strange Flavour, a bundle deal—every iSight owner should play with ToySight at least once.

classic program is also the inspiration behind Dr. Blob's Organism, a new action game by Digital Eel.

Although it's not the deepest game in the world, Dr. Blob's Organism is quick, easy to grasp, and fun.

Your petri dish is overflowing with a growing, pulsating, green blob of protoplasmic ooze. It's up to you to contain this nasty critter by repeatedly blasting its nucleus with energy.

You can spin the petri dish around to get a better shot at the beast. Every time the creature oozes over the edge, you lose a life. You can earn new lives or acquire power-ups using goodies that occasionally erupt from the organism. (Power-ups can sometimes imbue the organism with special abilities, too.)

This is all there really is to the game—21 levels' worth of slime blasting, complete with three levels of difficulty, five

different blob abilities, and ten different power-ups. What the game lacks in depth, it makes up for in production value. It offers original music and sound effects, great animation and graphics, and an interesting twist on an old idea.

The Bottom Line If you're looking for a complicated game you can really immerse yourself in, Dr. Blob's Organism isn't for you. But if brainless arcade fun is more your style, give this game a try.

Gauntlet Revisited

Hollow Ground is the gruesome, but worthwhile, first release by Swedish game developers Aescapia AB. While it has some amateurish angles, it will definitely appeal to old-school gamers who want to capture a piece of their past.

The story line is fairly standard: Earth is in shambles after destructive wars; the environment is ruined; and there's a big ugly monster generator hidden in an underground bunker hundreds of feet below the surface—and only you can destroy it. But to do that, you'll have to make your way through 40 levels of chaos and destruction.

You can choose from one of four characters, each of which has different strengths and weaknesses. You'll find power-ups along the way that can juice up your weapons and defenses, or you can buy them between levels using credits you collect.

Hollow Ground's developers may get mad at me for saying so, but this game reminds of me of nothing so much as the classic arcade game Gauntlet. One reason is the game's perspective: like Gauntlet,

DR. BLOB'S ORGANISM

RATING: ★★★

PROS: Unique twist on an old favorite.

CONS: Shallow game play.

PRICE: \$10

OS COMPATIBILITY: Mac OS X

COMPANY: Digital Eel, www.digital-eel.com



Weird Science Keep the giant protozoan from oozing off the petri dish in Dr. Blob's Organism.

HOLLOW GROUND

RATING: ★★★

PROS: Random level generator varies game play.

CONS: Very violent action; amateurish graphics in some places.

PRICE: \$19

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Aescapia AB, www.aescapia.com



Seeing Red There's plenty of bloodshed in the gruesome arcade shooter Hollow Ground.

Hollow Ground is rendered from an overhead view, using 2-D graphics. And although the graphics are a lot bloodier and more gruesome than what you found in Gauntlet, the game play is similar. You wade into crowds of shambling zombies and monsters, hack or shoot at them until you reach their generators, and then blast those generators to bits to prevent any more from emerging. You then wander around each level in search of an exit, often having to trip switches to enter the next area.

Hollow Ground does offer a few nice embellishments on this old idea. For example, a random level generator ensures that things are different each time you play. The game's initial interface and some of its design elements use hand-drawn graphics, which may make Hollow Ground look a little folksy and amateurish compared with what some gamers would expect even from shareware titles. However, I think it's a charming touch.

The Bottom Line Hollow Ground combines the classic appeal of coin-op gaming with Quake-like violence. It's an interesting and unique blend if your stomach can handle the gore. If you like the game, keep an eye out for its level editor, which is scheduled to be released soon. □

If you see MacCentral.com Senior Editor PETER COHEN on iChat AV but he doesn't respond to your request for a videoconference, it's probably because he's playing with ToySight.

“Check Out My Disc Factory!”



Connect to any Mac¹

Robotic Disc Transport

2400 DPI
Color Printing

52x CD Burning
4x/16x DVD/CD Burning

Up to
50-Disc
Capacity

Introducing the new \$1995* Bravo™ Disc Publisher

“I used to burn CDs one at a time on my Mac. Then I printed sticky labels and tried to get them on straight. It took me hours to make 25 discs! Now, with my Bravo Disc Publisher, everything’s automatic. It burns, prints and moves the discs back and forth all by itself. This thing is great! It really saves our company a lot of time and money!”

For details and a free sample CD-R printed and recorded on Bravo, call 1.800.486.0553 (USA and Canada) or 763.475.6676. E-mail to sales@primera.com or visit us at www.primera2.com



*Manufacturer's Suggested Retail Price in the USA; reseller prices may vary. 1 Requires Mac OS X v10.2 or later. Bravo is a trademark and Primera is a registered trademark of Primera Technology, Inc. Windows is a registered trademark of Microsoft Corporation. Mac is a trademark of Apple Computer, Inc. registered in the U.S. and other countries. The "Built for Mac OS X" graphic is a trademark of Apple Computer, Inc., used under license. All other trademarks are the property of their respective companies. © 2003 Primera Technology, Inc. All rights reserved.

PRIMERA
TECHNOLOGY, INC.

- > MPlayer OS X
- > iRecordNow
- > Smart Scroll X
- > Ittec
- > DiscBlaze
- > QuickPlayCM
- > AvantGo USB sync
- > The Missing Sync for Internet Sharing and AvantGo

Be a Player

EVEN THOUGH MAC OS X IS A MULTIMEDIA POWERHOUSE, we've all encountered movies that just won't play correctly—or at all. The next time QuickTime balks at playing a movie, don't fret. Instead, try

the free **MPlayer OS X 2.0b6** (👍👍👍; <http://mplayerosx.sourceforge.net>), the OS X distribution of The Movie Player for Linux.

Using MPlayer OS X, you can play almost any video or audio file—the list of supported formats includes various MPEG audio and video, DivX, AVI, ASF, Ogg Vorbis, RealMedia, QuickTime,

AC3, WMA, WMV, and 3ivx. And unlike QuickTime Player, MPlayer lets you use the keyboard's left- and right-arrow keys to scan backward and forward, respectively.

MPlayer OS X's playlist feature allows you to play movies one after another or in loop mode. It also lets you change the order of video clips by simply dragging them up or down in the list.

Although most people will likely prefer the polished interface of OS X's QuickTime Player, MPlayer OS X is a good tool for the files QuickTime just can't seem to figure out.

iRecordIt, You Play It

Speaking of movies, wouldn't it be nice if you could use Apple's iSight as a DV camera? With Boinx Software's \$15 **iRecordNow 1.0.1** (👍👍👍; www.irecordnow.com), you can.

The main iRecordNow window shows the current view from your iSight. Click on the Record button (or press ⌘-R) to start recording, and do the same to stop recording.

You can access picture-quality settings for hue, saturation, and brightness, as well as a few audio-recording settings. You can also choose and customize video size and compression, as well as format—for instance, uncompressed video or DV format for direct editing in Apple's iMovie or Final Cut Express.

The feature set is fairly basic, but the simplicity means that iRecordNow is easy to use and convenient for recording short video clips.



Play That Funky Movie With MPlayer OS X, you can play many of the movie files QuickTime Player won't touch.

A Scroll in the Park

Many third-party mice have scroll wheels that facilitate scrolling through documents, but I've long wished that my keyboard had scroll-up and scroll-down keys right next to the page-up and page-down keys. If you've ever had the same wish, Marc Moini's \$15 **Smart Scroll X 1.1b1** (👍👍👍; www.marc-moini.com/sx_en.html)

may be just what you're looking for. With it, you use various combinations of the shift, control, option, and ⌘ keys to easily scroll up, down, left, and right without ever moving your hands off the keyboard.

Smart Scroll X's preference pane lets you choose the key combination for each direction, as well as for a Next feature that lets you change which pane you're scrolling—for example, if you want to switch between the mail list and message text in Mail. If you forget the key combinations you've chosen, Smart Scroll X can show you an on-screen guide to your keys.

The only downside to Smart Scroll X is that some applications—such as Microsoft Word—have built-in keyboard commands that overlap possible scrolling commands. To use Smart Scroll X with one of these applications, you'll need to choose different settings or change the application's own commands. But if you can get over that minor hurdle, Smart Scroll X is often faster (and easier on your hands) than using the scroll bar.

continues

The Quickie

We've already covered the free and useful QuickImageCM contextual-menu plug-in (👍👍👍; October 2003), which allows you to view and edit image files quickly in the Finder. QuickImage's developer, Pixture Studio, has released a similar free plug-in for movie files, **QuickPlayCM 1.0** (👍👍👍; www.pixture.com). It lets you view any QuickTime-supported movie file in the Finder by control- or right-clicking on the file and selecting QuickPlay from the contextual menu. You don't get any editing features like those QuickImageCM offers, but you do get the quick-view ability.

Pop Goes the Finder

I'm a sucker for contextual menus, especially those that make it easier to access files, folders, and programs. So I've become a big fan of Balance Software's \$15 **Ittec 2.1** (★★★★; www.balance-software.com/ittec/), inspired by the popular utility FinderPop OS 9.

With Ittec installed, control-clicking (or right-clicking if you have a multibutton mouse) on a folder in the Finder brings up a contextual menu listing that folder's contents (including other folders, which appear as hierarchical menus). Ittec can even show the contents of StuffIt archives and OS X packages. If you control-click on a window—including the desktop—the contents of that window appear in the menu.

You can configure the Ittec contextual menus in many different ways. You can add mounted volumes, open windows, the Classic desktop, your Home folder, and any items in the Ittec Items folder (in your personal Library folder). You can also include hidden and invisible files—items you can't normally see in the Finder—in Ittec listings. You can even include running applications, making contextual menus useful as a quick way to switch to an application. Ittec even lets you configure particular keys to perform actions on selected files—show, open, print, copy, or delete—directly from the menu.

For people who don't like having to control- or right-click to see contextual menus, Ittec provides the ability to access contextual menus by holding down the mouse button (great for people who use single-button mice and trackpads). Ittec also lets you choose a different font and font size for contextual menus—I much prefer smaller type so longer contextual menus don't scroll off the screen.



Burn, OS X, Burn DiscBlaze gives you some of Toast's high-level features, without its big price.

Unfortunately, I don't have enough space to cover all of Ittec's myriad features here. But if Ittec's functionality is up your alley, you'll be hooked in no time.

Burn Better

OS X can burn CDs and DVDs without additional software, but it does so in a fairly limited manner. If you don't need all the features of the \$100 Toast 6 Titanium (★★★★; December 2003), check out Radical Breeze's \$19 **DiscBlaze 2.1.1** (★★★★; www.radicalbreeze.com/blaze/index.html). It expands on OS X's abilities and provides all the functionality many users will ever need.

Just insert a blank disc (choose Ignore if OS X asks you what to do with it), and then drag files or folders into the DiscBlaze window to add them to the disc. DiscBlaze lets you select from four disc formats—Mac, PC, Mac And PC Hybrid, and ISO 9660—from a pop-up menu. If you select the Hybrid format and then select an item in the window and click on the File Info button, you can choose whether to make the item visible on a Mac, a PC, or both. In other words, you can create CDs that show up one way on one platform, and another way on the other.

When it comes to burning, you can allow multiple sessions on the same disc and choose whether to verify the disc afterward. DiscBlaze can also erase rewritable (RW) discs, and even burn Toast disc images.

If you don't need Toast's bells and whistles—and if OS X supports your drive—give DiscBlaze a try. □

AvantGo Returns

One thing I love about my Palm is its ability to download Web content from AvantGo. Unfortunately, AvantGo still doesn't have an OS X conduit, so Mac users are out of luck (AvantGo blames Apple and Palm, but every other major conduit maker has had OS X support for a long time). I used to start up Classic to download content to my Palm—but now two different workarounds have finally banished Classic from my daily routine.

The first is the free **AvantGo USB sync 1.2.1** (★★★★; http://homepage.mac.com/s_d/malsyncx/malsyncx_en.html), which combines Tom Whittaker's malsync and Florent Pillet's USB-TCP Bridge. It retrieves data from the Internet and sends it to your Palm over USB. Launching AvantGo USB sync interrupts the Palm's normal synchronization, so a click of the HotSync button allows your Palm to find and download AvantGo material—albeit slowly. A sync of three large channels on my Palm m505 took 20 to 25 minutes (several times longer than using the actual conduit in OS 9 or Classic).

Mark/Space's \$20 **The Missing Sync for Internet Sharing and AvantGo 1.0.1** (★★★★; www.markspace.com) requires that you select Internet Sharing in the Sharing preference pane; this basically turns your Palm into another computer on the network. The main problem with this is that it turns your Mac into a DHCP server. If you're on an office network that uses DHCP to supply Internet addresses, this can cause major headaches for other users and your IT department. However, The Missing Sync is much faster than AvantGo USB sync. And as the product name suggests, it also lets you send and receive e-mail, as well as download Web sites to view offline.

These apps aren't perfect—for example, neither can properly download premium (paid) content from Salon.com's AvantGo channel—but since they rid me of the need for Classic, they both deserve praise.—JONATHAN SEFF

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

Don't settle for less. Just pay less.



Avid Xpress® DV ^{\$}695

USMSRP

Professional-strength editing tools from the people who changed the media world. Over 100 real-time effects. One-click expert color correction. Multiple real-time DV streams. Mac and PC compatibility. And much, much more. Everything you expect from Avid. At an unexpected price.

www.avid.com

make manage move | media™ **Avid**

© 2003 Avid Technology, Inc. All rights reserved. Product features, specifications, system requirements, and availability are subject to change without notice. All prices are USMSRP for U.S. and Canada only and are subject to change without notice. Contact your local Avid office or reseller for prices outside the U.S. and Canada. Avid, Avid Xpress, and make manage move | media are either registered trademarks or trademarks of Avid Technology, Inc. in the United States and/or other countries. All other trademarks contained herein are the property of their respective owners.

Choose 39 at www.macworld.com/getinfo

A poster celebrating 20 years of the Mac. The background is bright yellow with white lines radiating from the top center. The number '20' is in large black font, with the '0' containing a white Apple logo. Below it, the text 'YEARS OF THE MAC' is written in bold black letters.

20

**YEARS
OF THE
MAC**



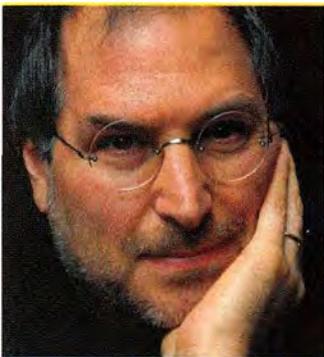
TWENTY YEARS AGO, in the wake of a remarkable (and somewhat perplexing) Super Bowl commercial, Apple Computer introduced the Macintosh. Just as the company's Apple II had ignited a personal-computing revolution several years before, the Macintosh—a combination of new concepts such as Xerox PARC's graphical user interface and Douglas Engelbart's mouse—completely changed how people interacted with their computers. This product that was designed, famously, "for the rest of us" became the most influential computer in the industry's history.

Twenty years later, Apple and its leader, Steve Jobs, continue to influence the way we use technology. Most recently, the iPod and iTunes radically changed the way we listen to and purchase music.

And now, 20 years after the first issue of *Macworld* appeared alongside that iconic Apple computer, we take a look at the past, with a timeline of the events that have affected us all. We also examine how Apple is changing the world around us, in essays by several well-known writers who have appeared in our pages over the years. And *Macworld's* staff share their Mac experiences and reflect on Apple's history. But if Apple has taught us anything in the past two decades, it's that if you peer back in time, you'll miss the true excitement—which is in the future, where the next "insanely great" innovation awaits us all.—JASON SNELL, EDITOR IN CHIEF



STEVE JOBS: NOW...



On the Mac's 20th birthday, *Macworld* Editor in Chief JASON SNELL spoke with Apple CEO STEVE JOBS about the past, present, and future of Apple and the Mac.

Do you have any general thoughts about the 20th anniversary of the first Macintosh?

All I can say is, I think the Mac reinvented the personal-computer industry in the eighties, and Microsoft copied it in the nineties—and that's been a big success for them, too. We finally got out ahead again with Mac OS X, and I think you'll see Microsoft copying that in the future.

Can you draw any parallels between what Apple was doing in creating the Mac back in 1984 and what you're doing today with the iPod and iTunes?

I feel Apple's in a really wonderful, innovative stage right now, where we're innovating in a lot of areas. I mean, I think Mac OS X is huge. I think that you're seeing us, with the Power Mac G5, being the most powerful personal computer out there. And we've got a lot more where that came from. We've got the best portables out there. And we have the iPod and the iTunes Music Store. And we have our iLife applications. We declared that we thought the next big thing for the personal computer was the digital hub three years ago, right?

Right. And now you see Microsoft, HP, and the rest—

Oh, everybody's copying it now. And we're quite a ways ahead of everybody. So I think Apple has had a good hand in setting the direction for the whole industry now, again. And that's where we like to be.

Apple's coverage in the mass media tends to focus on iTunes and the iPod, and of course they run on Windows as well. But the bulk of Apple's business is the Mac. And the Mac is still a major part of where Apple is going in the future. Of course.

Do you have any other thoughts about where your competitors are taking their strategies? For example, Windows Media PCs are computers attached to TV sets.

Well, we've always been very clear on that. We don't think that televisions and personal computers are going to merge. We think basically you watch television to turn your brain off, and you work on your computer when you want to turn your brain on.

Are there some complementary aspects to it?

Well, they want to link sometimes. Like, when you make a movie, you burn a DVD and you take it to your DVD player. Someday that could happen over AirPort, so you don't have to burn a DVD—you can just watch it right off your computer on your television set. But most of these products that have said, "Let's combine the television and the computer!" have failed. All of them have failed.

I don't understand why you'd want to mouse around on your TV set.

The problem is, when you're using your computer you're a foot away from it, you know? When you're using your television you want to be ten feet away from it. So they're really different animals.

Over the years, the media and analysts have always focused on market share. But although Mac market share is relatively small, Apple is profitable and is making products that affect the entire industry.

Apple's market share is bigger than BMW's or Mercedes's or Porsche's in the automotive market. What's wrong with being BMW or Mercedes?

So you're very comfortable with Apple as it is today.

I think we're having fun. I think our customers really like our products. And we're always trying to do better. But I think we're leading the industry and we're having a good time.

PREHISTORY 1976-1983



JANUARY Steve Wozniak, 26, works at Hewlett-Packard while future Apple cofounder Steve Jobs, 21, labors at Atari.

FEBRUARY Michael Scott becomes Apple's president.

APRIL Apple unveils the Apple II—the first PC with color graphics—at the first West Coast Computer Faire. It includes a keyboard, a power supply, and a snazzy case.

Rob Janov, an art director at Regis McKenna, Apple's public-relations agency, designs the company's new logo: a silhouette of a bitten apple with six color stripes.

MARCH Apple introduces interface cards for connecting its computers to most printers.

MAY Software Arts unveils VisiCalc, an electronic spreadsheet. One of the first "killer apps," it helped spur sales of the Apple II.

Apple employee Jef Raskin proposes a new project: an all-in-one computer aimed at the average person.

SEPTEMBER Apple's board approves a formal research project for Raskin's proposal.

1976

APRIL Wozniak and Jobs form Apple Computer Company on April Fools' Day. The Apple I debuts in Palo Alto, California, at the Homebrew Computer Club.

1977

JUNE The Apple II becomes available to the public. It includes 4K of standard memory, two game paddles, and a demo cassette (price: \$1,298).

1978

JUNE The Apple Disk II, a miniature floppy-disk drive, debuts at the Consumer Electronics Show (price: \$595).

1979

NOVEMBER Steve Jobs and software engineer Bill Atkinson visit the Xerox PARC lab in Palo Alto, California. More Apple employees will visit a month later. The visits will inspire development of both the Lisa and the Macintosh.



... AND THEN

This essay by Steve Jobs originally appeared on page 135 of the premier issue of Macworld, in 1984. The Apple cofounder was one of numerous Apple employees to contribute to the first issue.

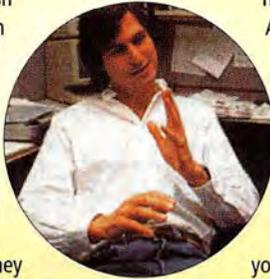
THE PEOPLE WHO ARE DOING THE WORK are the moving force behind the Macintosh. My job is to create a space for them, to clear out the rest of the organization and keep it at bay. I can't spend enough time here, unfortunately, because I have other responsibilities. But every spare moment I have, I dash back because this is the most fun place in the world.

This is the neatest group of people I've ever worked with. They're all exceptionally bright, but more importantly they share a quality about the way they look at life, which is that the journey is the reward. They really want to see this product out in the world. It's more important than their personal lives right now.

The Apple II had a magical feel about it. You couldn't quantify it, but you could tell. The Macintosh is the second thing in my life that's

ever felt that way. Opportunities like this don't come along very often. You know somehow that it's the start of something great. So everyone wants it to be perfect and works really hard on it. Everyone feels a personal responsibility for the product.

The Macintosh is the future of Apple Computer. And it's being done by a bunch of people who are incredibly talented but who in most organizations would be working three levels below the impact of the decisions they're making in the organization. It's one of those things that you know won't last forever. The group might stay together maybe for one more iteration of the product, and then they'll go their separate ways. For a very special moment, all of us have come together to make this new product. We feel this may be the best thing we'll ever do with our lives.



MAC MOMENTS OF ZEN

"When I first saw the graphic interface of the Mac Plus, I literally got goose bumps."—CAROL JOHNSTONE, SHOWCASE ACCOUNT MANAGER

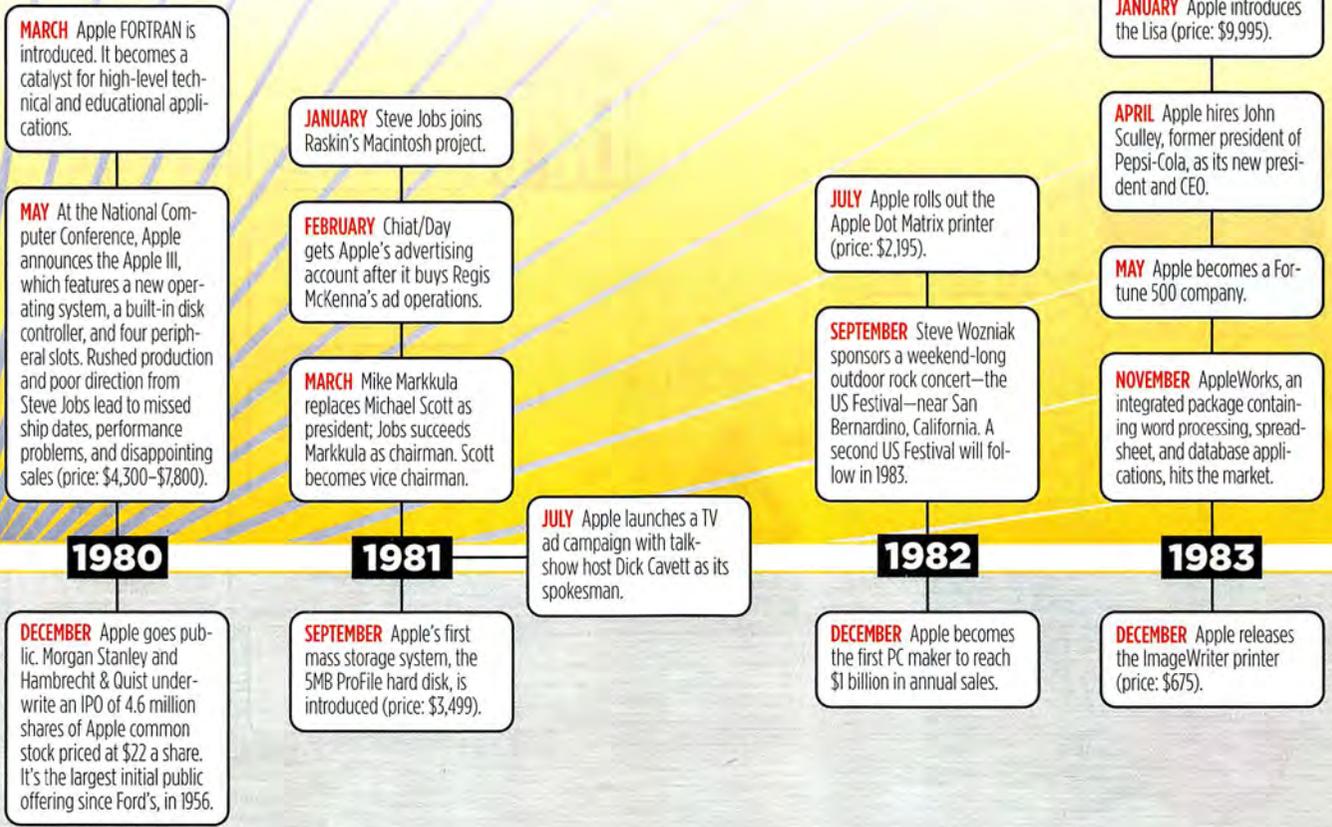
"In 1990, I was working at Mix magazine. All the editors had DOS machines. One night I stayed late to help the designers, who were on Macs, enter changes. Everything was so pretty, and easy! After that experience, I never took another job without ascertaining that I'd have a Mac, even if it had to share desk space with a Windows box."—TERRI STONE, SENIOR EDITOR

"When my wife and I first met, she was taking a computer course at the local university. The lab was all Macs and I would go there just to hang around. I spent my time filling the Trash and emptying it to watch the Mac slap the lid back on—that's when I first wanted a Mac."—JIM DALRYMPLE, EDITOR, ONLINE

"Back in college, I borrowed my roommate's PowerBook so I could do some writing in a café—and I realized how great it was to take a Mac with me anywhere."—JONATHAN SEFF, SENIOR ASSOCIATE EDITOR

"Although I had been working on Macs since second grade, it wasn't until high school that I truly fell in love. Like most teenagers, I was trying to find a way to be different. It finally dawned on me that being a Mac lover is what made me stand out. (And it drove my PC-loving parents crazy!) From that moment on, I sparked Mac-versus-PC controversy everywhere I went."—AMY HELIN, SENIOR DESIGNER

"When I first saw the happy Mac icon at startup, I was hooked."—JENNIFER BERGER, SENIOR EDITOR



THE MAC IS NOT A COMPUTER

By Adam C. Engst



Contributing Editor ADAM C. ENGST is the publisher of the TidBits newsletter. He has written numerous technical books, including the best-selling *Internet Starter Kit* series (Hayden Books), and has even been turned into an action figure.

DESPITE APPLE'S MARKETING of the G4 "supercomputer on a chip" and Virginia Tech's supercomputer built from 1,100 Power Mac G5s, the Mac will always be remembered for its influence on communication, not on number crunching.

From the moment Steve Jobs pulled the first Macintosh from a bag in 1984, it was communicating—literally. And Apple bundled MacWrite and MacPaint with those first Macs, starting a desktop-publishing revolution.

By the mid-1990s, the next communications revolution was underway: the Internet. From the vantage point of writing four editions of *Internet Starter Kit for Macintosh*, I saw the Macintosh make Internet communication accessible to ordinary people. That's been a lasting legacy—many people use their Macs primarily for e-mail, Web access, and instant messaging.

With Mac OS X, Apple has further integrated Internet communications into the Mac. Mail, Safari, and iChat have become instant standards, and the iSight can't be beat for video chats showing off Junior to Mac-savvy grandparents.

Apple's Internet-based services are also all about communication. Apple revolutionized the online-music world by seamlessly integrating the iTunes Music Store into iTunes, and .Mac enhances OS X and the i-apps with features such as file sharing

via iDisk and Web photo publishing via iPhoto's HomePage button. The trend should continue, with Apple helping us manage Internet communication through easy-to-use Mac applications in place of generic Web browsers.

I'm also watching Apple's core communications technologies, such as AirPort, Bluetooth, Rendezvous, iSync, Address Book, and iCal. They make many other things possible—an AirPort Extreme-equipped Mac with iChat and an iSight is a *Jetsons*-style communications panel. Bluetooth-based cell phones provide Internet connections on a PowerBook anywhere your cell phone has service, and Rendezvous helps network devices such as the TiVo Series2 connect with iTunes and iPhoto. The integration of iSync, Address Book, and iCal hints that—someday—we may be able to share information easily between applications, devices, and people. Then perhaps activities like arranging a dinner at a conference won't require trading contact information via e-mail and cell calls asking, "Where are you?"

What's next? Identity. Apple is one of the few companies that could promote and integrate an Internet-based open-standard approach to solving the identity problem, eliminating the cacophony of e-mail addresses, phone numbers, and screen names we're saddled with today. That would be another lasting legacy for the Mac.

An AirPort Extreme-equipped Mac with iChat and an iSight makes a nice *Jetsons*-style communications panel.

1984-1988



JANUARY The landmark "1984" commercial introduces the Macintosh during Super Bowl XVIII (the Los Angeles Raiders defeat the Washington Redskins, 38 to 9).

The Mac makes its debut at Apple's annual shareholder meeting (price: \$2,495).

The first issue of *Macworld*, featuring Steve Jobs on the cover, hits newsstands (price: \$4).

Microsoft releases Word 1.0 for Mac.



JANUARY The first Macworld Expo is held at San Francisco's Moscone Center.

APRIL Apple introduces the ImageWriter II, the HD-20 hard disk, and the Apple Personal Modem.

JULY Aldus releases PageMaker, a page-layout application that ushers in the desktop-publishing era.

NOVEMBER Microsoft ships Windows 1.0, almost two years after its originally promised release date.

Following the previous year's Super Bowl success, Apple-embossed seat cushions cover Stanford Stadium, site of Super Bowl XIX. The game features a commercial titled "Lemmings"—which bombs.

Claris releases FileMaker Pro. Apple releases the Apple LaserWriter (price: \$7,000).

SEPTEMBER Following clashes with John Sculley, Steve Jobs resigns from Apple. He forms a new computer company, Next.

Microsoft introduces Excel for Mac.

1984



MACINTOSH 128K
The computer that started it all
8MHz 68000 processor,
128K RAM, 400K floppy
drive, \$2,495

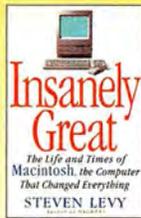
1985

MACINTOSH 128K AND IIC PHOTOGRAPHS BY PETER BELANGER

DAY ONE By Steven Levy

ON JANUARY 24, at the annual stockholders' meeting, every one of the 2,571 seats at the Flint Center at De Anza College (a mere microchip's throw away from the Apple campus) were filled, and latecomers had to settle for cyberspace seating, via a specially arranged telecast. The first four rows had long been reserved for the Macintosh team, garbed in the latest of the seemingly limitless variations of the Macintosh T-shirt. At ten o'clock, in strolled Steve Jobs, wearing a double-breasted jacket and a red bow tie. He recited a verse from Bob Dylan's "The Times They Are A-Changin'." Then, since this was the official stockholders' meeting and only unofficially a high-tech revival meeting, he brought on some Apple directors to conduct some corporate business. The trivialities of a business enjoying its first billion-dollar year disposed of, Jobs reentered and introduced himself. The mounting hysteria in the room as he spoke was reminiscent of Ed Sullivan's crescendoed introduction of the Beatles almost exactly twenty years before.

The lights dimmed and the "1984" commercial came on. After that sixty-second apoca-



This article is excerpted from Steven Levy's *Insanely Great* (Viking, 1994). Reprinted by arrangement with Penguin Group (USA), Inc.

lypse, Jobs slowed his cadence. He spoke about the amazing attributes of the product he was about to announce. Then the crowd began to come alive again, as the speakers boomed the neo-Wagnerian strains of Vangelis's score from *Chariots of Fire*. And out of a canvas bag, Steven Paul Jobs pulled out the computer that meant the future of his company, and portended something for all our futures. "I'd like to let the Macintosh speak for itself," he said.

The synthesized sound capabilities of the machine were up to the challenge. "Hello," it said, "I am Macintosh."

"It sure is great to get out of that bag."

STEVEN LEVY is a senior editor at *Newsweek*, the author of four books, and a former columnist for *Macworld*.

SIX OF OUR FAVORITE MAC APPLICATIONS

STICKIES: "I have a terrible memory. With *Stickies*, I jot down reminders whenever they occur to me, and they're always right there, on my desktop, impossible to ignore."—TERRI STONE, SENIOR EDITOR

GRAPHICCONVERTER: "I would challenge anyone to find an application, commercial or shareware, that offers a better upgrade-cost-feature-addition ratio than *GraphicConverter*."—PETER COHEN, SENIOR EDITOR, MACCENTRAL.COM

MACPAINT: "Nothing, ever, will beat *MacPaint* for me. I could draw with my mouse! I could make mirror patterns that looked like mirrors all aimed at each other! Then I could print it out on my dot-matrix *ImageWriter* until the ribbon ran out!"—JENNIFER BERGER, SENIOR EDITOR

MICROSOFT EXCEL: "The code name for version 1.0 was *Mr. Spreadsheet*, and it was an apt name—it was the best application of its class on any platform from the moment it came out. It was the second Mac application (*PageMaker* was the first) that made me realize that the Mac would be a computer I could use for the long haul."—RICK LEPAGE, PRESIDENT

ADOBE PHOTOSHOP: "I always liked the idea of a totally digital photographic workflow. Combined with a digital camera and a photo printer, I never had to wait for a poorly exposed picture to come back from the lab."—JACKIE DOVE, ASSOCIATE EDITOR

iMOVIE: "It's easy enough to make awesome movies without having any talent whatsoever."—KELLY LUNSFORD, SENIOR ASSOCIATE EDITOR

QUARKXPRESS™



MACINTOSH II
The first color Mac and the first NuBus Mac. 16MHz 68020 processor, 40MB hard drive (optional), 20MB maximum RAM. \$3,989-\$5,498

JANUARY Apple releases System 3.0.

FEBRUARY Steve Jobs invests \$10 million in Pixar, a computer division of Lucasfilm.

1986

NOVEMBER In *Star Trek IV: The Voyage Home*, James "Scotty" Doohan uses a Mac Plus to devise a formula for transparent aluminum.



JANUARY New desktop communications products include the AppleShare file-server application (price: \$799) and the AppleTalk PC Card (price: \$399).

MARCH Apple releases System 4.0.

APRIL QuarkXPress debuts.

1987

OCTOBER Apple releases System 4.2 and Finder 6.0, combining the two in System 5.0.

JULY Microsoft releases PowerPoint 1.0. The Mac version of the presentation software appears some three years before its Windows counterpart.

JANUARY Microsoft launches Windows 2.03, featuring Mac-like icons and overlapping windows.

MARCH Apple files a federal lawsuit against Microsoft claiming copyright infringement.

1988

JUNE Apple releases System 6.0.

Adobe
Illustrator 88

PETER COHEN'S EIGHT FAVORITE GAMES

MARATHON: *Bungie is still worshipped and adored for this all-time classic.*

MAELSTROM: *I offered this game to PC-using friends as an example of why shareware didn't have to suck.*

DARK CASTLE: *I can't think of any game that exemplifies "old school" Mac gaming more than this one. At a time when PC gaming was still beeps and blips on a four-color screen, this game had 512-by-384-pixel resolution, digitized sounds, and killer game play.*

WARCRAFT III: REIGN OF CHAOS: *It was released simultaneously for Mac and PC, with editing software (for once). Also, it's just a ridiculously ass-kicking strategy game.*

MYST: *The game sports achingly beautiful graphics and puzzles that took hours, sometimes weeks, to solve.*

QUAKE III ARENA: *This game represented a seminal shift in the Mac gaming market, because its existence—or rather, the existence of its core game engine—has allowed so many other Mac games to flourish.*

UNREAL, UNREAL TOURNAMENT: *It's interesting how two games that, on the surface, have many of the same features can be so totally different. Like Quake III Arena, though, UT has led to the release of countless Mac game ports that avid gamers have clamored for.*

BUGDOM: *I suspect that this game has sold more Macs for Apple than people really know. Just ask anyone who did a Demo Day for Apple at CompUSA back in the day.*

THE EVANGELIST By Guy Kawasaki

THE LIST OF MACINTOSH firsts is long, interesting, and debatable, but not even the high priests of Xerox PARC can debate one thing—the Macintosh established evangelism as a secular business technique.

The word *evangelism* is Greek (as opposed to Geek) in origin—it means “bringing the good news.” Prior to the year 1 B.M. (that is, 1983), evangelism was considered a way to spread the good news of the holy gospel and to save people from evil.

On a smaller scale, the Macintosh Division of Apple believed that it, too, was bringing good news and saving people from evil. So it applied the term *evangelist* to me and other folks who went forth and convinced software developers to write Macintosh versions of their products.

The evangelism concept spread to other Macintosh constituencies, namely user groups. These hardy souls banded together to sell, service, and support the Macintosh when Apple was unable or unwilling to.

One example of the power of evangelism occurred in 1995—yet another year when “beleaguered” Apple was supposedly about to die. Apple created an e-mail list called *Evangelist* to counter the seemingly endless supply of bad news about Apple and the Macintosh in the computer and business press.

The list provided new-product announcements from developers, tips and tricks for evangelizing, success stories, and profiles. The list quickly grew to 44,000 subscribers. In some darker moments, the list brought torrents of e-mail down upon journalists when I pointed members to news stories that unjustly criticized Apple. The *Evangelist* is gone, but the lessons of Macintosh evangelism remain.

Don't see only hardware and software innovation when you look at your Mac. It also represents innovations in sales and marketing. In so many ways, our favorite computer has changed the world.

Your Mac represents not only innovations in hardware and software, but also innovations in sales and marketing.



Former Apple Fellow GUY KAWASAKI is the CEO of Garage Technology Ventures.

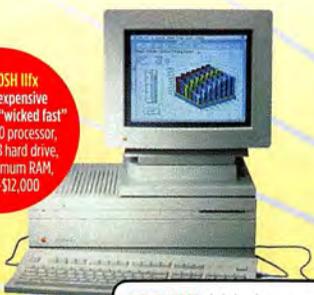
1989-1994

FEBRUARY The Beatles' Apple Corps recording company sues Apple Computer for marketing products with music-synthesizing capabilities, claiming a violation of a 1981 trademark-coexistence pact. It won't be the last legal dispute between the two Apples.

JUNE Microsoft releases Office 1.0.

1989

MACINTOSH IIx
The most expensive Mac ever was "wicked fast" 40MHz 68030 processor, 40MB-160MB hard drive, 128MB maximum RAM, \$10,000-\$12,000



FEBRUARY Adobe introduces Photoshop.

1990

NOVEMBER Michael Spindler becomes Apple's president.

Adobe Photoshop™

MARCH Low-cost laser printers, including the StyleWriter and the Personal LaserWriter LS, debut.

MAY Apple announces QuickTime, a new system-software architecture for the integration of dynamic media.

System 7.0 ships.

1991

MACINTOSH PORTABLE
The first (almost) laptop Mac 16MHz 68000 processor, 40MB hard drive (optional), 8MB maximum RAM, \$6,500



POWERBOOK 100
The first (really) laptop Mac 16MHz 68000 processor, 20MB-40MB hard drive, 8MB maximum RAM, \$2,500



MACINTOSH PHOTOGRAPHS COURTESY OF APPLE COMPUTER



THE BIRTH OF DESKTOP PUBLISHING By Pamela Pfiffner

JONATHAN SEYBOLD, founder of the influential Seybold Seminars, says that when Steve Jobs showed him the Macintosh, he was convinced it was the future of not only computing but also publishing. "It was very clear to me that the distinction between computing and information science and graphic arts would just go away," he says.

In the summer of 1984, Jobs called Seybold. "Steve wanted to see me urgently," he recalls. "He said they had a deal with Adobe, they were signing a deal with Linotype, they had real fonts. I went to Cupertino and walked into this tiny room, and there stood Jobs and [Adobe cofounder John] Warnock with a Mac and a LaserWriter. He showed me what they were up to. I turned to Steve and said, 'You've just turned publishing on its head. This is the watershed event.' When I turned to John, he had this look on his face. He was just so happy. I could tell he was thinking, 'This made the company. This is my validation.' It was a magic moment."

It was the end of 1984, and the stage was set for the introduction of the Apple LaserWriter.

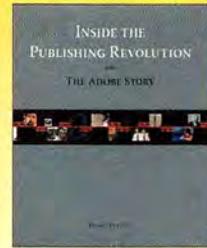
The LaserWriter debuted to great fanfare at Apple's annual stockholder meeting on January

23, 1985, where Steve Jobs's legendary showmanship was on display. On stage, the Pointer Sisters belted out "I'm So Excited." In the audience were all 27 Adobe employees who had made the trip to Cupertino's Flint Center after toasting the culmination of their two-year effort at Adobe's office the evening before. The jubilant engineers who had toiled in obscurity were seeing their product in a forum where they could gauge the public's reaction to it.

"You couldn't walk out of there not feeling you were doing something great," says Dan Puttman, Adobe employee number 2 and former senior vice president of the North American systems division.

The LaserWriter cost \$6,995—steep by today's standards, yet astoundingly cheap compared with the IBM and Xerox laser printers of the day, which cost three to ten times that. Plus, the LaserWriter had Adobe's special ingredient: PostScript. Almost immediately, analysts commented on the LaserWriter's output, praising its "near-typeset quality."

With the release of the LaserWriter, Adobe Systems was on the corporate map. The two soft-spoken scientists [cofounders Warnock and



This article is excerpted from Pamela Pfiffner's *Inside the Publishing Revolution: The Adobe Story* (Adobe Press/Peachpit Press, 2003).

Chuck Geschke] were thrust into the media spotlight, fielding interview requests to explain why the world's second-largest computer company had bet its future on an unknown startup.

When three upstart companies—Adobe Systems, Aldus Corporation, and Apple Computer—joined forces to create desktop publishing in 1985, shock waves rumbled through the publishing world. Thanks to the combination of the Apple Macintosh, Aldus PageMaker, and the Adobe PostScript-equipped LaserWriter, publishing was liberated from the confines of proprietary typesetting and printing systems.

PAMELA PFIFFNER is the editor in chief of *creativepro.com*, and was formerly the editor in chief of *MacUser* and *Publish*.



JUNE Michael Spindler becomes CEO. John Sculley continues as Apple chairman.

OCTOBER John Sculley resigns. Mike Markkula is elected chairman.

APRIL Microsoft releases Windows 3.1; it became one of the first widely used PC GUI operating systems.

MAY IBM, Motorola, and Apple team up to make the PowerPC family of single-chip, reduced instruction set computer (RISC) microprocessors.

AUGUST Apple launches the Newton MessagePad handheld.

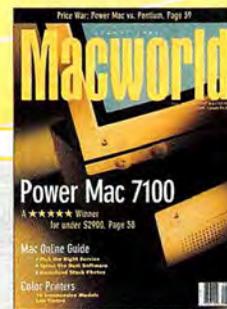
A federal judge dismisses Apple's Windows 2.03 suit against Microsoft. The decision is upheld on appeal.

POWER MAC 6100
The first PowerPC Mac
60MHz 601 processor,
500MB hard drive,
72MB maximum
RAM, \$1,700



MARCH Apple announces that Copland, its next-generation operating system, will ship in 1995 and be followed by another OS, code-named Gershwin, in 1996. It doesn't and it won't.

SEPTEMBER Apple announces its intention to support Mac clones, licensing Radius, Power Computing, and Umax.



NOVEMBER The Mac tops the 100MHz mark, with the PowerPC 601-powered Power Mac 8100.

1992

1993

1994



SEVEN REALLY BAD IDEAS

APPLE LASERWRITER SELECT 310: "Also known as the Apple LaserWriter Select 300's evil twin, this printer was slow, noisy, and costly."—JACKIE DOVE, ASSOCIATE EDITOR

POWER MAC G4 CUBE: "Beautiful, elegantly designed, and aimed at the wrong audience."—PETER COHEN, SENIOR EDITOR, MACCENTRAL.COM

PIPPIN: "A Mac-based game machine. Talk about a stinker."—JASON SNELL, EDITOR IN CHIEF

GIL AMELIO'S LAST MACWORLD EXPO KEYNOTE: "The most excruciating three hours I've spent in the Mac market."—RICK LEPAGE, PRESIDENT

POWERBOOK 5300: "A PowerBook that burst into flames seemed like a poorly executed idea."—PHILIP MICHAELS, SENIOR EDITOR

BILL GATES AT MACWORLD EXPO: "The 1997 Macworld Expo Boston keynote address where Bill Gates appeared on screen was an image straight from the '1984' commercial. It felt as if all the air got sucked out of the room. I understand why Jobs did it and what its significance was, but I just wish that Bill hadn't been on that screen."—PETER COHEN, SENIOR EDITOR, MACCENTRAL.COM

DESIGNER iMACS: "Tangerine is hard enough to accessorize. But the 'Flower Power' and 'Blue Dalmatian' iMacs didn't go with anything. In what decorator's nightmare were these iMacs supposed to find homes? These garish products are a notable exception in Apple's history of elegant design."—CHARLES PURDY, MANAGING EDITOR

LOOKS COUNT By John C. Dvorak

YES, THERE IS A CONTINUING BATTLE between the PC and the Mac. But as someone who has followed this battle for nearly two decades, I have to conclude that it's all about aesthetics—nothing more.

It must have been 20 years ago that someone first derided the IBM PC as being designed in the image of its users—bookkeepers. This implied a dull, colorless individual without much interest in the look of things. I know that not all bookkeepers are dull—but the world of the PC generally is. It's more than a little galling to many PC users that the simple good taste of the Mac seems to mock them from nearby desktops.

But consider the users of the respective machines. The Mac has corralled all the creative types—artists, writers, designers—and ease of use is supposed to be part of the reason. However, I know many artists who have souped-up Macs that would make a hacker proud. They worked hard to put together these

screamers, using accelerated chips, chains of weird drives, and tons of extra memory. The only people on the PC side who go through this much trouble are the gaming minority who have elaborate case-mod machines with blinking lights. Plunk down one of those PC hot rods in most offices, and you'd have the PC police at your desk in five minutes, demanding that you take the thing off the network and off the premises. All the while, nobody says anything to the folks in the art department about their "off-spec" Macs.

Of course, I've seen little evidence that any office PC user would have the verve to do a case modification—let alone bring it to the office.

Choosing a PC over a Mac is choosing beige over metal—or beige over anything. The PC has the big market share because it's the safe choice. If Apple produced a safe, dull-looking machine, the company would, I think, be shocked by its success. Thank goodness it doesn't.

If Apple produced a safe, dull-looking machine, the company would, I think, be shocked by its success.



JOHN C. DVORAK is a contributing editor of PC Magazine and a former MacUser columnist.

1995-2000

FEBRUARY The Supreme Court declines to review Apple's copyright-infringement case against Microsoft, ending the seven-year legal dispute.

OCTOBER The first multiprocessor Mac ships—but not from Apple. DayStar Digital's DayStar Genesis MP 528 features four 132MHz PowerPC 604 processors (price: \$10,000).

1995

NOVEMBER Following the release of *Toy Story*, Pixar goes public. The 30 million shares Steve Jobs owns are worth an estimated \$1.17 billion.



POWER MAC 9500
The first PCI-based and the most expandable Mac 132MHz 604 processor, 2GB hard drive, 1.5GB maximum RAM, six PCI slots, \$5,300

FEBRUARY Gil Amelio becomes the chairman and CEO of Apple, replacing Michael Spindler.

MAY Internet Explorer 2.0—the first Mac version of Microsoft's Web browser—ships.

JULY Jeff Goldblum uses a PowerBook 5300 to save the Earth from invading aliens in *Independence Day*.

1996

AUGUST Apple gets into the multiprocessor game with the dual-180MHz Power Mac 9500. Apple won't release another dual-processor machine for four years.



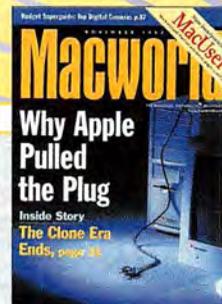
20TH ANNIVERSARY MAC
The first LCD desktop Mac 250MHz 603e processor, 2GB hard drive, 256MB maximum RAM, \$10,000

JANUARY Apple unveils plans for a new OS that incorporates NextStep; it's code-named Rhapsody.

JULY Gil Amelio resigns from Apple.

AUGUST The satellite-beamed image of Bill Gates shares the Macworld Expo stage with Jobs, as Microsoft and Apple announce a five-year technology alliance.

Mac OS 8 ships.



1997

SEPTEMBER Jobs becomes the interim CEO.

In a move to kill off the Mac clone market, Apple buys Power Computing for \$100 million.

MACINTOSH 9500 AND iMAC PHOTOGRAPHS BY PETER BELANGER; ALL OTHERS COURTESY OF APPLE COMPUTER



AHEAD OF THE CURVE

By Andy Ihnatko

WHEN APPLE FLOPS, IT FLOPS BY THINKING TOO FAR AHEAD.

In 1996, Apple attempted to get into the video-game/thin-computer market with the Pippin. The Pippin was a disaster—a complete and utter failure from both a business and a creative standpoint. It looked a lot like a \$60 VCR, but it would have cost about 13 times more. (And it would have run about as many games as a VCR.) The only truly smart move Apple made throughout the entire development of this product was to shut it down before actually shipping: if the Pippin had shipped, federal troops would have had to intervene—to protect the nation from Apple, and to protect Apple from itself.

I also seem to recall that at one stage in Apple's history, you could buy a sailboard with the Apple logo on it. But apart from the Pippin and the sailboard, Apple hasn't produced a single failed product in 20 years.

"What about the Newton?" you ask. What about it? As of September 2003, more than 30 million Palm OS devices have been sold. The Newton wasn't the first computer to use a pen, but only Apple could have invented the PDA. The company quickly understood how to make it work: make it the size of a person's palm; create a whole OS around pen gestures; and focus on intimate, personal software.

Well, then—how about the Mac Portable? Obviously, there are one or two downsides to a portable computer the size and weight of a concert accordion. But think about *why* it was so big and heavy: Apple looked at where the portable market was going and gambled that users were no longer interested in having a portable accessory to their desktop computer. They wanted a *real* Macintosh that could be used at home, in the office, in a hotel room, and along every vector in between. So the Portable had to have a real keyboard, a comfortable screen, a credible processor, ample storage, and enough battery life to make it worth the trouble. And that's exactly where notebooks are today.

Apple created the iMac, and suddenly, kitchens all over the country had food browning in brightly colored George Foreman grills.

You see where I'm going here? Apple has an idea ahead of its time, and someone else takes the hint and runs with it. And here we've just been talking about Apple's commercial failures. Apple redefined the standard for computing with the Apple II, and then did it again with the Mac. Apple created the iMac; then, all of a sudden, kitchens all over the country had food browning in brightly colored George Foreman grills.

Other technology companies can be likened to the Beatles or Elvis Presley. They might sell more records, but Apple's the modest Delta bluesman who created rock and roll in the first place. Nothin' happens until Apple strums the chords and shows everyone else where music is headed.



Contributing Editor ANDY IHNATKO is the technology columnist for the *Chicago Sun-Times* and a former columnist for *MacUser* and *Macworld*.



POWER MAC G3 (BLUE AND WHITE)
The first FireWire Mac and the most colorful pro Mac ever
300MHz, 350MHz, or 400MHz G3 processor, 6GB–12GB hard drive, 1GB maximum RAM, \$1,599–\$4,999

JANUARY The iMac adds new flavors—blueberry, tangerine, grape, lime, and strawberry, to be exact. In the next few years, Apple's consumer line will go through numerous color shifts, including indigo, sage, ruby, snow, and (inexplicably) Blue Dalmatian.

APRIL Apple releases Final Cut Pro.

JUNE Noah Wyle and Anthony Michael Hall recreate the Steve Jobs–Bill Gates contretemps in *Pirates of Silicon Valley*.



POWER MAC G4 CUBE
The best-looking Apple failure
450MHz or 500MHz G4 processor, 20GB–30GB hard drive, 1.5GB maximum RAM, \$1,799 or \$2,299

JANUARY Steve Jobs drops the "interim" tag from his CEO title and shows off OS X's Aqua interface in public for the first time.

FEBRUARY Apple reorganizes Claris into a stand-alone subsidiary called FileMaker. It also ends Newton development.

MAY Apple unveils a revised OS strategy, changing the name of its next-generation OS to OS X.

1998

JUNE Umax pulls out of the Mac-clone market.

Microsoft releases Windows 98.

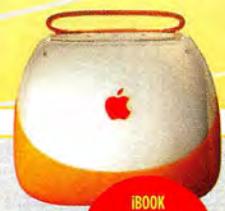


iMAC
The Mac that saved Apple and started the USB and the translucent-plastic crazes
233MHz G3 processor, 4GB hard drive, 256MB maximum RAM, \$1,299

1999

SEPTEMBER The G4 chip becomes the processor for Power Macs (price: \$1,599–\$3,499).

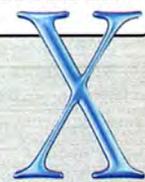
OCTOBER OS 9 ships.



iBOOK
The portable iMac
300MHz G3 processor, 3.2GB hard drive, 288MB maximum RAM, \$1,599

2000

SEPTEMBER The public gets its hands on a beta version of OS X.





MOVIEMAKER

By Roger Ebert



ROGER EBERT is a Pulitzer Prize-winning film critic for the *Chicago Sun-Times* and a cohost of the TV show *Ebert & Roeper*.

MACS TURN UP IN THE MOVIES ALL THE TIME—not so much because of product placement, but because so many movie people use them and like them. A historian of the future, counting all the on-screen computers between 1983 and today, would likely conclude that Macs represented 90 percent of the computer market.

Alas, this is not so. But since any reasonable person would choose a Mac over a PC, Apple's market share does provide us with an accurate reading of the percentage of reasonable people in our society.

Yet the Mac's role in the actual making of movies is far larger than the PC's. Macs are in editing suites, sound studios, and musicians' mixing rooms. Writers use them, agencies create ads and trailers on them, Web pages are designed on them—and movies are literally made with the Mac.

Using desktop Macs and homegrown software, a group of filmmakers in Austin, Texas, revolutionized the world of animation—taking an art form that was once painstaking and expensive, and putting it within the reach of anyone with, say, a digital-video camera, a Mac, and a lot of imagination.

As anyone can see, a movie shot on a consumer digital camera looks like, well, exactly that. The color and detail are murky, the depth is lacking, and the movie is clearly not ready for prime time. Richard Linklater's *Waking Life* (2001) is one of the most



influential of all modern films—because, first, he showed how to make, in postproduction, a consumer-camera digital film look like a commercial, theatrical-quality film, and second, he demonstrated that inexpensive feature-length animation was within the reach of ordinary filmmakers.

The movie follows its hero through Austin after a traumatic event sends him on an odyssey. He seeks truth and insight through conversations with a variety of talkative thinkers. Linklater filmed these conversations and then farmed out each encounter to a different Mac animator. Using rotoscoping-inspired software devised by Bob Sabiston, Linklater's animation director, the animators applied their personal

artistic styles to their segments, so the film is like a group show. Animation no longer requires thousands of hours of hand-drawn cels, or rooms filled with microstations. There will always be a role for those approaches, and they will remain the animation mainstream. But the Mac makes high-quality animation possible for anyone with an artistic vision to express.

Apple's market share does provide us with an accurate reading of the percentage of reasonable people in our society.

2001-2003

MARCH OS X debuts.

POWERBOOK G4
The first G4 laptop and the beginning of Apple's shiny-metal fetish
400MHz or 500MHz G4 processor, 10GB-20 GB hard drive, 1GB maximum RAM, \$2,599 or \$3,499

JULY The G4 Cube becomes Apple's best-looking failure: the company discontinues production.

SEPTEMBER The new operating system gets a needed update with OS X 10.1.

2001

OCTOBER Apple enters the portable-music business, unveiling the first iPod music player.

POWER MAC G4
The first G4 Mac
400MHz to 500MHz (originally), 350MHz to 450MHz (a few months later) G4 processor, 10GB-20GB hard drive, 2GB maximum RAM, \$1,599-\$3,499

APRIL To appeal to education customers, Apple announces the eMac, an all-in-one system with a flat CRT monitor.

MAY With the release of the Xserve, Apple makes its first push into the server market since its Network Server product line. The Xserve is the first Apple machine to include Double Data Rate (DDR) RAM (price: \$2,999-\$3,999).

2002

AUGUST The Power Mac G4 hits the gigahertz mark.

Apple releases its next major OS X update—OS X 10.2, code-named Jaguar.

X

THE FLAT-PANEL iMAC
"The CRT is officially dead."
700MHz or 800MHz G4 processor, 20GB-60GB hard drive, 1GB maximum RAM, \$1,299-\$1,799

JANUARY iLife—a suite that includes iPhoto, iDVD, iMovie, and iTunes—debuts, along with Safari, an Apple-built Web browser.

Apple claims 5 million active users of OS X. It estimates that the number will double by year's end.

APRIL Apple makes a splash in the music world, with the iTunes Music Store, an online music service where users can legally download more than 200,000 songs for as little as 99 cents each.

2003

OCTOBER The latest update to OS X—code-named Panther—brings 150 new features and enhancements to the operating system.

POWER MAC G5
The first G5 Mac
1.6GHz-dual-2GHz G5 processor, 80GB-160GB hard drive, 8GB maximum RAM, \$1,999-\$2,999

Think of them as a Mute button for the world around you.

Whether it's the engine roar on airplanes, noise of the city, bustle in the office or the blare of neighborhood yard work, these headphones let you hush them all. And they do it with the flick of a switch. You savor delicate musical nuances in places where you couldn't before. And when you're not listening to music, you can use them to quietly enjoy a little peace. Clearly, Bose QuietComfort® 2 headphones are no ordinary headphones. It's no exaggeration to say they're one of those things you have to experience to believe.

Reduce noise with Bose technology.

David Carnoy reports on CNET that our original noise-reducing headphones "set the gold standard." And according to respected columnist Rich Warren, our newest headphones "improve on perfection." They electronically identify and reduce noise while faithfully preserving the music, speech or silence that you desire. As Jonathan Takiff reports in the *Philadelphia Daily News*, "Even in the noisiest environment, wearing these phones creates a calming,

quiet zone for easy listening or just snoozing."



Enjoy your music with our best headphone sound quality ever. After trying Quiet-

Comfort® 2 headphones, audio critic Wayne Thompson reports that "Bose engineers have made major improvements." The sound is so clear, you may find yourself discovering new subtleties in your music. CNET says "All sorts of music – classical, rock, and jazz – sounded refined and natural."



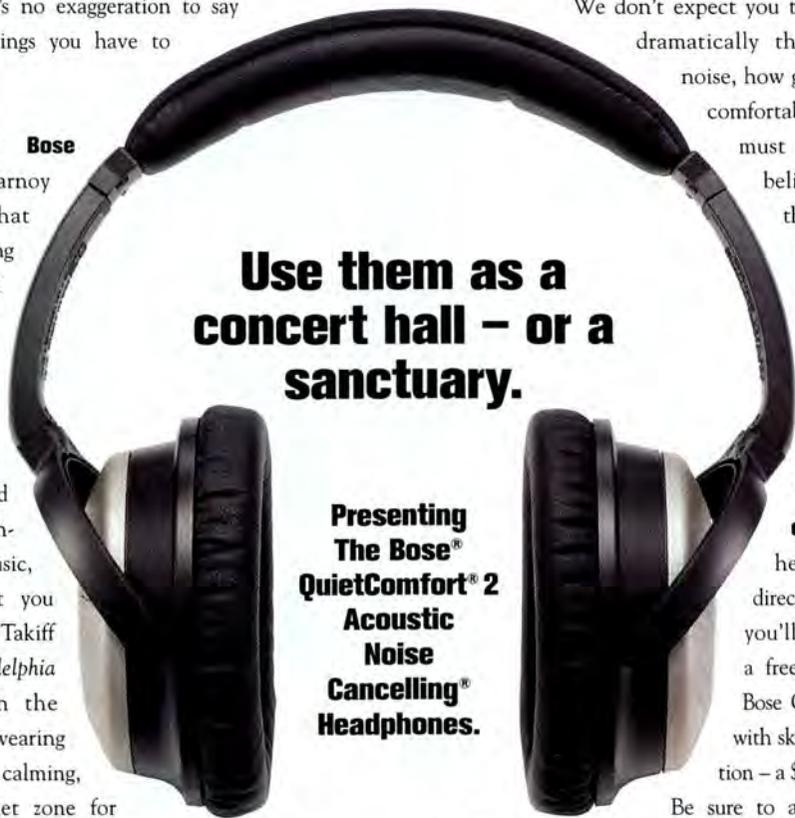
"The QuietComfort 2 lives up to its name, enveloping you in blissful sound in the utmost comfort. It's easy to forget they're on your head." That's what columnist Rich Warren says. And as Ivan Berger reports in *The New York Times*, the "QuietComfort 2

offers more conveniences than the original model." You can wear them without the audio cord to reduce noise. Or, attach the cord and connect them to a portable CD/DVD/MP3 player, home stereo, computer or in-flight entertainment system. When you're done, their convenient fold-flat design allows for easy storage in the slim carrying case.



Try the QuietComfort® 2 headphones for yourself risk free.

We don't expect you to take our word for how dramatically these headphones reduce noise, how great they sound and how comfortable they feel. You really must experience them to believe it. Call toll free to try them for 30 days in your home, at the office or on your next trip – satisfaction guaranteed. If you aren't delighted, simply return them for a full refund.



Use them as a concert hall – or a sanctuary.

Presenting The Bose® QuietComfort® 2 Acoustic Noise Cancelling® Headphones.

Call 1-800-399-2673, ext. Q2706 today. These headphones are available

direct from Bose. Order now and you'll receive a free portable Bose CD Player with skip protection – a \$50 value.

Be sure to ask about our **financing options** when you call. And discover a very different kind of headphone – Bose QuietComfort® 2 Acoustic Noise Cancelling headphones.



FREE Bose CD Player when you order by Feb. 29, 2004.

1-800-399-2673, ext. Q2706

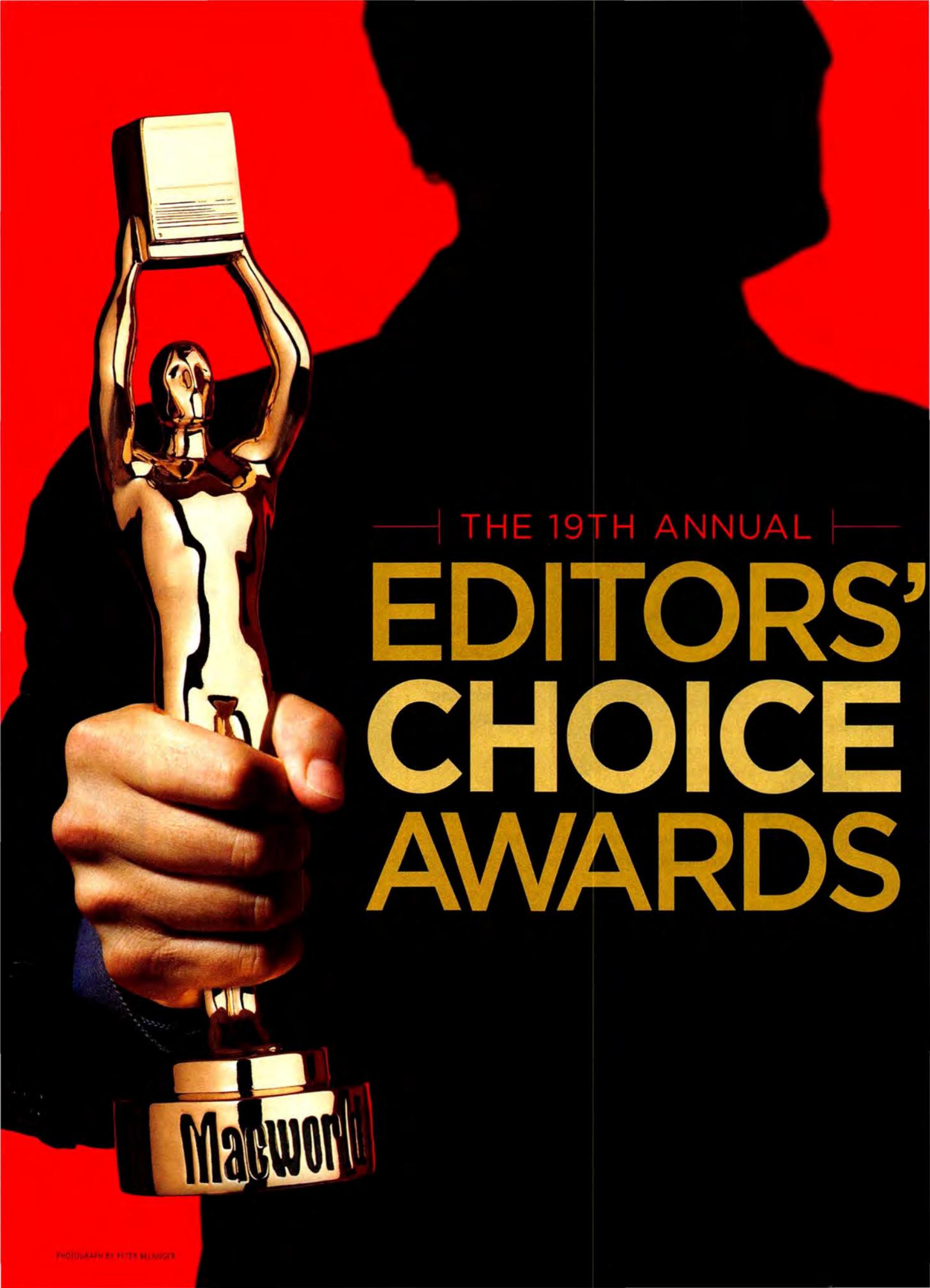
For information on all our products: www.bose.com/q2706

Name _____
Address _____
City _____ State _____ Zip _____
Day Phone _____ Eve. Phone _____
E-mail (Optional) _____

Mail to: Bose Corporation, Dept. DMG-Q2706,
The Mountain, Framingham, MA 01701-9168

BOSE®
Better sound through research®

©2004 Bose Corporation. Patent rights issued and/or pending. Financing and free CD Player offer not to be combined with any other offer or applied to previous purchases, and subject to change without notice. If QuietComfort® 2 headphones are returned, CD Player must be returned. Risk free refers to 30-day trial offer only. Delivery is subject to product availability. Quotes are reprinted with permission: David Carnoy, CNET, 5/29/03; Rich Warren, News-Gazette, 5/19/03; Jonathan Takiff, Philadelphia Daily News, 5/29/03; Wayne Thompson, Oregonian, 4/18/03; Ivan Berger, The New York Times, 5/1/03. The BEST BUY SEAL is a registered trademark of Consumer Digest Communications, LLC, used under license.



— | THE 19TH ANNUAL | —
**EDITORS'
CHOICE
AWARDS**

APPLE SET THE TONE FOR 2003 IN EARLY JANUARY,

when it announced the Year of the Notebook. And the company certainly delivered, with releases of PowerBooks in multiple sizes to appeal to a wide array of Mac users. But 2003 also saw the launch of an Apple-backed online music service that made would-be rivals dance to Apple's tune. Meanwhile, Apple was busy readying a new generation of high-end desktops that would finally muscle aside the PC competition. And to say 2003 was just about laptops ignores the great programs—from software giants, as well as from lone developers cranking out applications from their homes—that continue to support the Mac. So with all the terrific hardware and software that became available in the last 12 months, maybe 2003 should be called the Year of the Mac User. After you examine the innovative and excellent products that earned our Editors' Choice Awards this year, we're sure you'll agree. >>

OTHER TOP HARDWARE PRODUCTS

BEST ALL-AROUND PHOTO PRINTER

If you want a printer that can give you attractive, detailed photos without leaving you twiddling your thumbs, look no farther than Canon's **i960 PHOTO PRINTER** (\$200; www.usa.canon.com). This six-color printer offers an unbeatable combination of quality and speed.

BEST CONSUMER DIGITAL CAMERA

Canon's **POWERSHOT A80** (\$499; www.usa.canon.com) is a crowd-pleasing 4-megapixel camera. The swiveling LCD viewfinder makes it easy to shoot from your hip—literally—and from most other angles, indoors and out. Point-and-shoot users will like the automatic features, but there's also plenty of manual control for more-advanced users.

BEST DISPLAY

Few monitors do a better job at retaining consistent color from any angle than NEC's **MULTISYNC LCD2080UX** (\$1,700; www.necmitsubishi.com). The highly flexible 20-inch LCD monitor truly embodies the phrase "Editors' Choice": 15 MultiSync displays adorn desks at the *Macworld* offices.

BEST SERVER

Anyone involved in data-intensive work such as capturing and editing high-definition video should turn to Apple's 2.52-terabyte **XSERVE RAID** (\$10,999; www.apple.com). The impressive 2GB Fibre Channel server has awesome data-transfer rates and redundancy in most elements, so the Xserve keeps rolling if any component fails. It also offers multiplatform support at an unheard-of price.

HARDWARE

➤➤ BEST DIGITAL SLR CAMERA

Digital SLR cameras offer top-notch performance, photo quality, and expandability. But they can also be very expensive. Until recently, the least-expensive digital SLR camera cost \$1,499—out of reach for anyone but professional photographers. Canon's release of the **CANON EOS DIGITAL REBEL** (www.usa.canon.com) changed that. At \$999 (\$899 without the optional 18mm–55mm lens), this impressive 6-megapixel digital SLR camera cracks the \$1,000 barrier. The lightweight Digital Rebel accepts EF lenses and other accessories. It also offers full manual and automatic shooting modes, fast and accurate focusing, easy-to-navigate menus, and excellent picture quality.



➤➤ BEST MAC NOTEBOOK

For a long time, Apple's PowerBook philosophy was simple: The company sold one size. But in 2003, it split the PowerBook line into three models, with amazing results. Although each of Apple's new aluminum-clad PowerBooks has its own strengths, our favorite is the **1GHZ 12-INCH POWERBOOK G4** (\$1,799; www.apple.com), which is as light as an iBook but has pro features such as digital video out and a SuperDrive. For people who loved the iBook's size but desperately wanted the PowerBook's kick, the 12-inch PowerBook seriously delivered.

INNOVATION OF THE YEAR

It stands to reason that if you want to revolutionize online music, you turn to the company that pulled off the same feat with personal computers. And make no mistake—Apple's **ITUNES MUSIC STORE** (www.itunes.com) represents a revolution in how people find, buy, and share online music. Before the iTunes store launched last spring, you had two options for downloading online music—get it legally from a source that severely crippled your right to listen to music you had bought and paid for, or use an illegal music-swapping service (if you could even find a Mac-compatible way to do either). Since the iTunes Music Store's debut, competing services have aped Apple's attractive pricing (just 99 cents a song) and its less restrictive approach to rights management. The imitators merely emphasize the obvious—Apple has set the gold standard for the online music experience.



CREATIVE

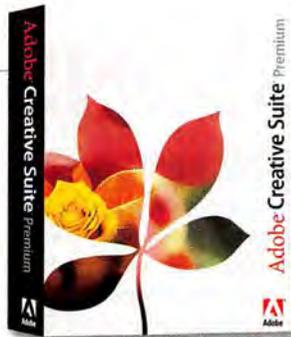
»» BEST VIDEO EDITOR

Video pros have embraced Apple's Final Cut Pro, with **FINAL CUT PRO 4** (\$999; www.apple.com) providing further reason to rejoice. The new RT Extreme feature gives you access to more real-time effects. Users can now fully customize keyboard shortcuts. Final Cut can finally capture across time-code breaks, and Apple has rebuilt the app's audio features. Version 4 includes four additional applications: Cinema Tools 2 (previously a \$999 add-on), Compressor, LiveType, and Soundtrack. Coupled with the program's improvements, these side applications make Final Cut Pro 4 an impressive update.



»» BEST MOTION-GRAPHICS APPLICATION

It was easy to embrace **AFTER EFFECTS PROFESSIONAL 6** (\$999; www.adobe.com), thanks to a \$500 price cut. But there's more to this updated animation and compositing tool than a lower price. Adobe added vector-based painting and a new text system with titling and text-animation capabilities rivaling those of Photoshop and Illustrator. The company also implemented OpenGL standards to speed up the display of 3-D effects. The Keylight keying tools were another excellent addition; before version 6, the Keylight tools were available only for \$5,000 from The Foundry.



»» SUITE OF THE YEAR

The new versions of Acrobat and Photoshop are particularly noteworthy, but the sum of Adobe's **CREATIVE SUITE PREMIUM EDITION** (\$1,229; www.adobe.com) is greater than its parts. Integration between the seven programs in the suite lets you edit Illustrator and Photoshop files placed inside InDesign and GoLive projects without resaving and reimporting the image files. The new Version Cue has some rough edges, but even its critics would concede that it's an ambitious step toward managing file iterations in group settings.

OTHER TOP CREATIVE PRODUCTS

BEST 3-D DRAWING SOFTWARE

@Last Software's **SKETCHUP 3.0** (\$475; www.sketch3d.com) puts intuitive and easy-to-master sketching tools into the hands of anyone who wants to create and visualize a 3-D structure, whether it's an 80-story high-rise or a tree house. Version 3.0's ability to export a QuickTime movie tour of any of your creations is a particularly impressive touch.

BEST DIGITAL-AUDIO AND MIDI APPLICATION

DIGITAL PERFORMER 4.1, from Mark of the Unicorn (\$795; www.motu.com), offers an attractive interface for creating music in an OS X world. Its new Freeze feature lets you mix multiple audio tracks down to two tracks to reduce processor load and to work with more tracks.

BEST LITTLE MULTIMEDIA TOOL

Granted Software's **REVISION 1.1** (\$30; www.grantedsw.com) is an easy-to-use tool for synchronizing music from Pro-Performer Software's Reason or Ableton's Live with QuickTime movies—an otherwise expensive and complicated task. It offers full transport control and a window that floats on top of your music session so you can visually match up your edits.

BEST PHOTOSHOP PLUGIN

This simple but powerful **PHOTOSHOP CAMERA RAW** plug-in, from Adobe (www.adobe.com), won raves from professional and hobbyist digital photographers for giving them a simple but powerful way to tweak the raw image data captured by some high-

SOFTWARE OF THE YEAR



When 125 of the 126 e-mail messages in your in-box are unwanted ads for products claiming to increase or reduce the size of various body parts, you may want to run screaming from your Mac. The best way to keep these obnoxious messages at bay is the heroic Michael Tsai's **SPAMSIEVE 2.0** (\$25; www.c-command.com). It uses the Bayesian filtering system to learn how to tell the difference between noxious spam and e-mails from your loved ones. And SpamSieve learns very quickly, so you see results right away. Unlike other programs, which force you to check a separate program for mismarked mail, you use SpamSieve right inside your everyday e-mail program. Forget spam about reducing body parts, and use SpamSieve to reduce something else: your spam count.

end cameras. The former plug-in is now built into Adobe Photoshop CS.

BEST NATURAL-MEDIA PROGRAM

Corel's **PAINTER 8** (\$299; www.corel.com) only gets better with age. The interface in this latest version is more intuitive, with palettes moved and replaced so it's easier to find tools.

BEST WEB-DESIGN TOOL

Macromedia's **CONTRIBUTE 2.0** (\$99; www.macromedia.com) arrived for OS X this year, and Mac users with minimal Web-design skills couldn't be happier. The Web-page editor lets nondesigners easily maintain a Web site, no matter what program the designer used in the first place. Even for Web-site administrators who keep a tight rein, Contribute is a dream—different users can receive different sets of permissions, and it supports the encrypted Secure FTP method.

OTHER TOP CONSUMER PRODUCTS

BEST GAME

MacSoft's **DUNGEON SIEGE** (\$30; www.macsoftgames.com) offers a fresh take on an old genre by mixing the character-driven elements of role-playing games with heavy doses of action that requires squad-based strategy. The game's innovative graphics engine lets you keep the action going without having to wait for levels to load.

BEST HANDHELD

At a time when most new handhelds offer only minor updates, Palm's **TUNGSTEN T3** (\$399; www.palm.com) combines great new features such as an expandable, rotating display and excellent usability changes to Palm OS.

CONSUMER



»» BEST INTERNET CLIENT

As 2002 ended, the Web-browser situation on the Mac remained static. Internet Explorer was functional, but it wasn't that far removed from its OS 9 days. What a difference a year makes. As 2003 ends, **SAFARI 1.1** (free; www.apple.com) provides Mac users with a fast, stylish, and remarkably Web-compatible browsing experience. (Some quirks with certain financial and restricted-access sites remain, but given Apple's rapid development of Safari, we expect to see these problems fixed shortly.) From its integrated Google search bar to its productivity-boosting tabbed browsing, Safari has become our default Web browser. And let's not forget WebKit, the technology underlying Safari that lets other Mac applications display Web content with the same facility as Safari itself.

PRODUCTIVITY



»» BEST MESSAGING CLIENT

Apple's **iCHAT AV** (free with OS X 10.3; www.apple.com) may look like a simple chat client, but combine it with a FireWire-enabled Web cam such as the \$149 Apple iSight, and you get a top-notch videoconferencing tool. The sound and images you receive from iChat aren't the usual jittery blurs you may expect from online sessions—iChat supports full-duplex audio, so the sound won't drop, while its H.263 codec provides full-motion video at up to 30 frames per second in true 24-bit color.

»» BEST E-MAIL CLIENT

Sometimes what separates a great program from a good one is how well it plays with others. **MAILSMITH 2.0**, from Bare Bones Software (\$99; www.barebones.com), offers plenty of features that appeal to power users—such as AppleScript-enabled customization and an improved database engine for easy message retrieval. But the e-mail client also offers tight integration with Apple's iChat and Address Book, so users can alert recipients to urgent e-mails and easily maintain one central address repository. Mailsmith also addresses concerns about privacy and junk mail: PGP and SpamSieve function seamlessly within the program.



HARDWARE OF THE YEAR

Even the most fervent Mac partisan was having a hard time arguing that the Power Mac had kept pace with increasingly faster PCs—until Apple unveiled the **DUAL-2GHZ POWER MAC G5** (\$2,999; www.apple.com). The dual-processor G5 not only fares well against Wintel rivals, but also blows away the previous speed records of the Power Mac G4. Credit Apple and IBM for teaming up to develop the PowerPC 970, which increases the Power Mac's clock speed and brings the power of 64-bit processing to the Mac. The Power Mac G5 sports a winning design, from the innovative cooling system that keeps the machine from overheating to the easily accessible USB and FireWire ports on the front panel. But most important—with even faster G5s on the horizon that promise to keep pace with the Wintel world—the Power Mac G5 makes it exciting to be a Mac user.

OTHER MAC BESTS

BEST SIMULATION OF TELEKINESIS

If you've got a Bluetooth-enabled cell phone or Palm handheld, you've got all the hardware necessary to control your Mac remotely. Instead of adding a pricey remote-control gadget, just add Salling Software's **SALLING CLICKER 2.0** (\$10 to \$15; www.salling.com). With Clicker, you can run a slide presentation, control iTunes, or do just about anything else you can think of—from afar.

BEST LABELING TOOL

Whether you're creating music compilations for the car or burning home movies to DVD, presentation counts. This year, Epson introduced an innovative line of photo printers that let you print labels directly on CDs or DVDs. Our favorite label-producing printer is the **EPSON STYLUS PHOTO R300** (\$179; www.epson.com). This six-color printer also produces attractive photos, offers individual ink cartridges, and includes media slots that let you print without involving a computer.



BEST METHOD FOR LIVENING UP THOSE LABELS

SmileOnMyMac's **DISCLABEL 1.2** (\$30; www.smileonmy.com) provides a familiar, feature-rich interface (think Apple's iTunes or iPhoto) for creating CD and DVD labels. You can create your own original designs, or download templates shared by other users and modify them for your own use. Even better, disclabel can import track lists directly from iTunes, iDVD, and

iPhoto. Add in disclabel's impressive text-manipulation abilities, as well as its support for AppleScript and a wide variety of labels, paper, and CD printers, and you get a winning package.

BEST NEWS SOURCE FOR THE DESKBOUND

Your days of aimlessly drifting among Web sites to gather up news are over, thanks to Rancho Software's **NETNEWSWIRE 1.0** (\$40; www.rancho.com/netnewswire). The headline-fetching software lets you select from an extensive—and still growing—list of Web sites with RSS feeds to collect the latest headlines. More important, NetNewsWire's preview pane lets you decide whether you really want to click on a headline. And the ability to avoid jumping to an article you don't want to read is the best news we've heard in a while.

BEST TOOL FOR GRADING ON A CURVE

If you're a teacher, Orbis Software's **EASY GRADE PRO 3.6** (single user, \$49; site license, \$249; www.orbissoft.com) offers numerous time-saving features to help get you excited about heading back to school. This easy-to-use grade-book software lets you track multiple classes in one file—a rarity for this kind of program. Easy Grade also creates custom reports of all a student's classes, and it makes trading assignments and grading options between classes a cinch.

BEST UPDATE

DVD Studio Pro debuted in 2001 with minimal ease of use and a lackluster interface. Apple improved things considerably with **DVD STUDIO PRO 2** (\$499; www.apple.com). Borrowing freely from iDVD, Apple added button and menu tem-

plates, button styles, and easy access to iTunes and iPhoto libraries. The program can now encode video, so you don't have to do that step before importing it. DVD Studio Pro



also comes with a new MPEG-2 encoder that does multipass variable-bit-rate encoding, getting better results at lower bit rates. And

it costs half the price of its predecessor—you can't find a better app for the job.

BEST USE FOR THAT OLD VHS TAPE

What would you rather keep on a one-hour videocassette—a couple of *Friends* reruns or 10GB of your Mac's data? **DV BACKUP 1.1**, from Coolatoola (\$30; www.coolatoola.com) lets you use your FireWire-equipped video camera as a tape-backup system. It works with many DV and Digital8 camcorders and provides a simple interface for backing up and restoring data.

BEST WAY TO PUT CHARACTERS IN MOTION

Making its Mac debut, Kaydara's **MOTIONBUILDER 5** (\$995; www.kaydara.com) redefines the process of animating 3-D characters. Its unique story editor provides a clean, intuitive method for mixing action, audio, and other elements into a smooth composite animation. Because the software works hand-in-hand with most other 3-D apps, it fits neatly into almost any production pipeline. □

Mac products released between November 1, 2002, and November 1, 2003, were eligible for this year's Editors' Choice Awards, which are based on a survey of *Macworld* editorial preferences, primarily focusing on new features of products released during this year's eligibility period.

OTHER TOP PRODUCTIVITY PROGRAMS

BEST DEVELOPMENT SOFTWARE

HyperCard, with its stacks metaphor, has a new heir in Runtime Revolution's **REVOLUTION STUDIO 2.1** (\$299; www.runrev.com). It's the simplest write-once, deploy-everywhere solution, and it has enhanced support for OS X interface elements. Wonderful documentation and ambitious support for Internet infrastructure top off the package.

BEST FAX SOFTWARE

We had almost lost hope while we waited for a Mac program that could send and receive faxes with a minimum of fuss. With its intuitive interface and reliability, SmileOnMyMac's **PAGE SENDER 3.0** (\$30; www.smileonmy.com) put an end to years of lackluster fax software.

BEST ORGANIZATIONAL SOFTWARE

OMNIGRAFFLE 3.0 PROFESSIONAL, from The Omni Group (\$120; www.omnigroup.com), provides nearly every tool you need in order to create a chart or diagram, including some that rival those found in illustration programs. An improved Help menu and the ability to link multiple canvases together into a slide show make this application an organizational must-have.

BEST SYNCHRONIZATION UTILITY

For synchronizing files or doing a simple backup, Weber Ventures' **EXECUTIVESYNC 1.3** (single user, \$20; www.jasonweber.com) edges out the competition with its ease of use, clear interface, and Time And State synchronization method, for an accurate backup or sync.

Corral Your Contacts

IF YOU MANAGE A BANDOLIER OF GEAR—A MACINTOSH, A mobile phone, a Palm device, and an iPod—you know how difficult it can be to bring order to the information you’ve stored on them. The following tips will help you synthesize and synchronize the contacts on your computer and your peripheral contraptions.

Make a Commitment

If your contacts are scattered across multiple programs and devices, it’s time to choose an application and stick with it. Doing so ensures that all your contacts are within easy reach. After all, once you’ve searched two or three places for your Aunt Vilma’s number, you might as well have dialed 411.

So which program will it be? Would you like your contacts to be as fully integrated with Mac OS as possible, so you can easily access them from within Apple’s Mail, iChat, and iCal? Do you have a mobile phone compatible with Apple’s synchronization utility, iSync (www.apple.com/isync)? Then OS X’s Address Book is for you. (For details, see “Apple’s Information Hub,” December 2002.)

Will Microsoft Entourage be your e-mail client until death do you part? You’ll find it easiest to use Entourage X (\$99; 800/426-9400, www.microsoft.com/mac) to also manage your contacts and synchronize with your Palm (see *Reviews*, February 2002).

Need to share your address book and calendar with colleagues? Now Software’s Now Up-to-Date & Contact (\$119; 800/344-9160, www.nowsoftware.com) includes group-sharing capabilities as well as Palm synchronization (see *Reviews*, August 2002). Creating an online contact list is another possibility, however, if you love Address Book or Entourage and want to share with coworkers (see “Online Office 411”).

Coalesce Your Contacts

To commit to one application, you’ll need to move contacts from the various places you’ve stashed them.

Address Book, Ho! If the integration of Address Book appeals to you, follow these steps to transfer contacts from Microsoft Outlook Express, Entourage, Palm Desktop, Qualcomm’s Eudora, or Netscape into it:

1. Open the AppleScripts folder inside the Applications folder at the root level of your OS X volume and double-click on the Install Script Menu Applications icon (Panther) or the Script Menu.menu icon (Jaguar). This places an AppleScript menu (represented by a small black scroll) in your menu bar.

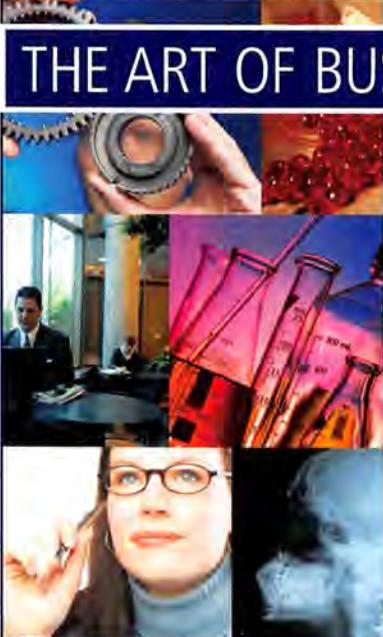
2. In Jaguar, select Mail Scripts from this menu and then the Import Addresses script from the resulting submenu. In Panther, select Address Book Scripts and then choose Import Addresses from its submenu. You’ll be asked to choose the application you’d like to import addresses from. Select one of the choices and click on OK.

3. Depending on which application you choose, you may be asked to locate a particular file—a text file that includes addresses you’ve exported from an e-mail client, for example. If so, locate that file and continue clicking on buttons as prompted until the script imports your contacts.

If you have contacts stored in more than one place, you can run this script multiple times, selecting a different application each time. Note that doing so may cause duplicates to appear in Address Book. You’ll have to remove them manually.

This script doesn’t support Now Software’s Now Contact. To move contacts from Now Contact to Address Book (or vice versa), use Now’s free utility Address Book Sync (see “Sync Now”). Download it from www.nowsoftware.com/absync.html.

THE ART OF BUSINESS



Every businessperson knows that a PowerPoint presentation just isn’t the same without some snazzy art. The same goes for quick flyers and Web pages you’re putting together yourself. Hemera’s BizArt (819/772-8200, www.hemera.com) can help. This stock-art collection includes 56,000 royalty-free images organized into business-friendly themes such as customer service, finance, government, health care, human resources, and technology (a few samples are shown here). The DVD contains photos, clip art, and photo-objects (images with their backgrounds removed).—SCHOLLE SAWYER McFARLAND

ONLINE OFFICE 411

Leaving Address Book If you'd like to export contacts from Address Book into another e-mail client or personal information manager (PIM), you'll find it easy to do as long as the intended recipient supports the vCard standard. (Entourage and Palm Desktop do, but Now Contact doesn't.) This cross-platform file format allows you to share contacts among vCard-compatible applications by copying vCards from one application to another.

To get started, just select the contacts you want to export, and choose Export vCards from Address Book's File menu. To add the vCards to Palm Desktop or Entourage, simply drag them into the program's address book window.

You also have options for moving Address Book contacts into a program that doesn't support vCards. The Address Book Sync utility takes care of issues with Now Contact. For moving into Netscape, Yahoo Mail, and Outlook Express, use David Martin's free Address Book Exporter (www.gwenhiver.net/applications/addressbookexporter/index.php).

Cross Platforms without Losing Friends

Got some contacts on a Windows PC? You've probably been using Microsoft's e-mail and PIM client, Outlook. Microsoft doesn't make it easy to move Outlook contacts to the Mac (or to other Windows applications). Fortunately, a few intrepid Windows developers have created tools that help.

For converting Outlook contacts to vCard files, my favorite is Oliver Stör's free (donations accepted) program Outpod (www.stoer.de/ipod/ipod_en.htm). It's as inexpensive as you want it to be, and it can export all your Outlook contacts in a single vCard file, which can be dragged and dropped into Address Book and Palm Desktop but not into Entourage. Outpod can also export individual contacts, which are acceptable to Entourage.

Another option, if you're moving Outlook contacts into Entourage, is Paul Berkowitz's \$20 collection of AppleScripts, Export-Import Entourage X 1.2.10 (<http://homepage.mac.com/berkowitz28/>). These can convert comma-delimited (Outlook calls it Comma Separated) Outlook files and transfer them to Entourage 2001 and Entourage X.

Moving Outlook contacts over to Now Contact requires some finesse since Contact doesn't currently support the vCard standard. Export your Outlook contacts with Outpod, import them into Palm Desktop, export them from Palm Desktop as a text file, and import that text file into Now Contact.

Avoid Mobile Madness

You really need your contacts when you're out and about with your cell phone. Apple's iSync allows

There's nothing handier than a central address book for the office. But if Now Contact isn't the right application for you—for instance, because you need vCard support or you desire Address Book's integration with the i-apps—you're not out of luck. You can create a central contact server on the Web. Do this for free by signing up for a Yahoo e-mail address and importing your address book into Yahoo. Give everyone in the office who needs access to your homemade contact server the address and password for this account. (Note that everyone who accesses the address book has the power to add and delete names, as well as to erase the entire address book in one fell swoop.)

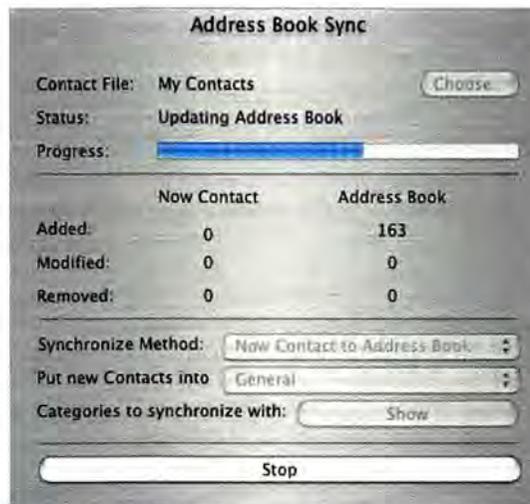
you to synchronize your Address Book contacts with a variety of mobile phones. That's great—unless your phone isn't supported by iSync, you're running OS 9 (and therefore can't use iSync), or you want to synchronize your phone with Entourage. What then?

Alexander Traud's \$10 GSM Remote (www.traud.de/gsm/remote) may be the answer if you have a GSM phone that doesn't work with iSync, or if you're running OS 9. The program—available in versions for OS 9 and OS X—lets you transfer contacts (in the form of a single vCard) to and from a compatible GSM phone.

To synchronize your contact and calendar information between your Sony Ericsson phone and Entourage, pick up Salling Software's \$25 MobileSync (<http://homepage.mac.com/jonassalling/Shareware/MobileSync>). The program bears a striking resemblance to iSync and is just as easy to use.

All Together Now

Organizing your contacts takes some time and effort, but it's worth the trouble. You need never misplace an important name, address, or phone number again. □



Sync Now Now Software's Address Book Sync lets you synchronize contacts between Now Contact and OS X's Address Book.

Contributing Editor CHRISTOPHER BREEN wrote *Secrets of the iPod*, third edition (Peachpit Press, 2003).



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

Animate Your World

SHOOTING DRAMATIC AND ENTERTAINING MOVIES DOES not always require actors. With some inexpensive software and a FireWire camcorder or Web cam, you can use the world around you to create beautiful and unique movies. Imagine capturing time-lapse footage of a brewing storm, or bringing household objects to life via stop-motion photography.

These projects are easy to do, but they require some patience. When animating with stop-motion photography, you shoot just one frame at a time, slightly moving your subject between each frame. Time-lapse movies are simpler to capture: point your camera at an interesting scene, and then go to the mall while your software snaps frames at a set interval. When you're finished, toys will spring to life, flowers will bloom, and you'll have a one-of-a-kind movie.

I recently looked at six top-notch, low-cost programs that help you easily create stop-motion and time-lapse movies (see "Software Options"). The software you choose should depend on how much you want to spend and the type of project you're doing. I'll tell you how to set up your equipment, how to avoid some common pitfalls, and what to do with your movies once you've captured them. To see sample movies I created, go to www.macilife.com/digitalhub.

The Setup

To create a time-lapse or stop-motion movie, you'll need a video camera, a sturdy tripod, and some basic software. (All the programs I looked at cost less than \$50—a couple of them are even free.)

You'll get the best video quality from a MiniDV camcorder. If you don't have a camcorder, an inexpensive USB or FireWire Web cam will do. To set up your equipment, mount the camera on a tripod and plug the camera's power adapter into a wall outlet—batteries won't last for extended animation sessions. A tripod or other stable mount is a *must* for this type of film project. If the camera moves in between any of the frames you're capturing, the scene's action will have a jarring jump. Finally, connect a FireWire cable from the camcorder to your Mac's FireWire port.

Many DV camcorders shut themselves off after a few minutes if you aren't recording to tape. You can

usually bypass this feature by taking the tape out of the camera. If your camera still insists on slumbering, try leaving its tape door open.

Stop-Motion Strategies

Some stop-motion animators create entire sets and characters out of clay. If you aren't particularly talented with Play-Doh—or if you don't have hours to spend creating characters from scratch—use objects you find around the house. For example, put some toys in motion to create a Matchbox Car 500 race or the Battle of the Beanie Babies. You can even point the camera at the backyard and have the kids take a small step between each frame. In the final movie, they'll appear to move without walking. (The Monkees, those madcap musicians from the sixties, regularly used and abused this effect in their TV show.)

Set up your animation stage somewhere that will have consistent lighting over several hours. If you're relying on light from nearby windows, try to shoot on a cloudy day. Dramatic variations from one frame to the next will ruin the illusion of seamless motion.

Move objects just a fraction of an inch between each frame. Some stop-motion programs, such as Boinx Software's iStopMotion DV, provide an *onion-skinning* feature that faintly superimposes the last few frames you captured. Onion skinning provides an at-a-glance look at how things have changed in recent frames, and it guides you in making the next adjustment.

As a bonus, iStopMotion DV (as well as its free counterpart, iStopMotion Lite) offers a useful speech-recognition feature that lets you tell your Mac to capture a new frame from across the room, so you don't have to get up from the animation stage, walk over to your Mac, and manually click on the Capture button for each frame.

Time-Lapse Videos

Anything that moves or changes shape slowly in the real world is a candidate for time-lapse photogra-

Time Goes By Capture nature in motion, with time-lapse photography.



WORKING AS A TEAM IN iMOVIE 3



If you want to collaborate with others on a video project, you can parcel out different segments of an iMovie 3 project for individual editing. But what do you do when it's time to merge the completed segments back into a single project for transfer to iDVD?

You *could* export each movie segment as a QuickTime file and then import them into the master project. But you'll lose the flexibility that lets you edit the individual clips—to fine-tune transitions, for example. There is a better—though somewhat unconventional—alternative: merge the video projects using a text editor. Since an iMovie project file is simply a text file with commands for manipulating video clips, it's ripe for textual tweekery.

To divide your editing work, first import all your footage into a single iMovie project. Split the footage into clips for each editing group. Create a new iMovie project for each group; then use the Finder to move the clips belonging to each group into the appropriate project's media folder.

Once all the editors have finished editing their portions of the footage, create a new master project in iMovie that will serve as the container for the reassembled segments. You'll need to perform a quick editing operation—such as importing a photo or adding a sound effect to the timeline—to cre-

ate a project file that will work for the following steps. When you've done this, quit iMovie. Then bring the media files for each movie segment into your master project. In the Finder, open the first segment's project folder and select all the files in its Media folder—including any additional files that iMovie generated for effects, transitions, audio, and so on. Drag these files into the Media folder for your master project. Repeat this process for each movie segment.

Next, launch a text editor, such as Apple's TextEdit, and open the project file for the first segment of your movie. (Do *not* open the .mov file.) Locate the line `AudioTrackMute: 0 0 0`. Everything that follows describes the clips and edits in the timeline and on the shelf. Select and copy all the text below this line. Then open the project file for your master project and paste the copied text below the same line of text.

Repeat this process for each segment of your movie, appending each new section of text to the bottom of the master project file. Save the file when you're done.

When you open the master project in iMovie, all of the edited segments should appear in the timeline. You can now make any final edits to the master movie, such as adding transitions between the segments.—JEFF CARLSON

phy—for example, a glass filled with ice, a dying flame, or drifting shadows. However, to avoid damaging your camera when shooting sunsets or sunrises, don't point the camera directly at the sun.

You'll need to decide how often you want your camera to capture a frame of the ongoing action. To calculate your frame interval, first determine the duration of the real event, and then decide how long you want your final clip to be. Finally, settle on a desired frame rate (20 frames per second is a good starting point).

For example, say a rosebud takes four hours to blossom and you want the time-lapse clip to play for 9 seconds. Multiply the desired video length (9 seconds) by the number of frames per second (20). In this scenario, you'll need 180 frames. Then divide the duration of the real event (240 minutes) by the number of frames you need. This reveals that you'll need to shoot a frame every 1.3 minutes, or roughly every 80 seconds. For something quicker, such as moving clouds, you'd want to shoot frames more frequently—perhaps every 15 seconds.

Postproduction

When you're done with your project, you'll export a QuickTime file of your finished movie. You can play this movie on its own, or incorporate it into a larger film project by importing it into iMovie and then adding it to the iMovie timeline. For example, you may want to use a stop-motion clip of kids scooting around your backyard as the opener to a movie of your child's birthday party.

Although you can clip the end of your time-lapse or stop-motion movies within iMovie, you won't be able to adjust individual frames. To do that, you'll need to return to the original software.

Run It Backward To put a different spin on a time-lapse clip, reverse it: see a blooming rose close itself or a glass of water turn into a glass of ice. After adding the clip to iMovie's timeline, select it and choose Reverse Clip Direction from the Advanced menu.

Add Dialogue and Sound Effects If you've created a stop-motion movie of some toy cars, why not add some traffic sounds? You'll find a huge array of free sound effects at www.findsounds.com. You can use a microphone and iMovie's Audio pane to add dialogue. However, if your movie is dialogue-intensive, consider recording the dialogue first and then timing the animation to it. Stop-Motion Studio by Loud offers audio-syncing features that can simplify this process. □

Software Options

COMPANY	PRODUCT	PRICE	CONTACT	COMMENTS
Boinx Software	iStopMotion DV	\$40	www.boinx.com	Polished interface fits into the iLife programs; includes onion skinning; supports speech recognition; creates full-screen movies.
Boinx Software	iStopMotion Lite	free	www.boinx.com	Includes all the features of iStopMotion DV, but limits movie dimensions to 320 by 240 pixels.
FrameThief	FrameThief	\$40	www.framethief.com	Includes on-screen positioning guides and support for audio tracks; unique frame-averaging feature reduces noise and improves video quality.
Gary Fielke	DVTimeLapse	free	http://users.chariot.net.au/~gazlou/	Excellent time-lapse program; doesn't support Web cams; no stop-motion features.
Loud	Stop-Motion Junior	\$35	www.loudinc.com	Simple interface; lacks onion-skinning features; no time-lapse features.
Loud	Stop-Motion Studio	\$45	www.loudinc.com	Full-featured program; supports onion skinning; lets you import audio tracks to sync action with dialogue.

Contributing Editor JIM HEID is the author of *The Macintosh iLife* (Peachpit Press/Avondale Media, 2003). He publishes additional iLife tips at www.macilife.com.



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

Playing Live

ABLETON'S LOOP-BASED SEQUENCER, THE \$399 LIVE 3.0 (www.ableton.com), is a remarkably flexible tool that musicians, DJs, and video editors use to easily create dynamic musical scores. But as can happen with any tool, you may have become accustomed to working with Live in a particular way. The following tips can help you see it in a different light.

Ambient in an Instant

Although Live is an excellent tool for creating driving dance grooves, you can also use it to produce music that's anything but beat driven. With repeating loops of different lengths, you can create the kind of ethereal soundscapes on Brian Eno's *Ambient 1: Music for Airports* and *Discreet Music*.

Eno and other musicians created such works by recording tape loops of varying lengths, playing those loops simultaneously, and capturing the results in a master recording. Because the loops were of different lengths, each time a loop played, its relationship to the simultaneously playing loops changed. You can do the same thing with Live.

1. Record Ambient Sounds into Live Record several tracks of ambient material, varying the length of each track, and loop them. Each track should be long enough that a repeating pattern won't be immediately discernible. But keep loops under a couple of minutes—playing a lot of very long loops

can give Live trouble on slower computers. Because the tracks will overlap in different places as the piece plays, record tracks that will mesh harmonically. For example, improvising around a single chord or a pentatonic scale will ensure that the music sounds right, regardless of how the loops line up.

2. Adjust the Start and End Points The transition from one end of the loop to the other should be seamless. Adding passages of silence will help, as will adding fades to the beginning and end of a track.

3. Program Panning To add another element of randomness to your piece, consider programming the panning envelope of some of your tracks so the mix constantly changes. Select a clip and click on the Waveform button at the bottom of the Live window. Click on the Envelopes editor to make it active, and choose Mixer from the Device Chooser pop-up menu. From the Modulate Control Chooser pop-up menu just below that, select Track Pan. Double-click on the Breakpoint Envelope line to create adjustment points, and drag those points up to pan the clip to the left, and down to pan it to the right.

4. Mix Your Composition (or Don't) You can mix the resulting piece as much or as little as you like. If you want to participate fully in the process, start recording, trigger one loop, trigger another and gradually fade it in, mute and activate tracks, and play with panning and volume. For a more hands-off approach, trigger all your tracks—then sit back and space out as the loops weave a musical mix.

SOUND OFF

You'll find many sound libraries out there, but at least two companies are billing their collections as tailored especially for Apple's \$999 Final Cut Pro 4 and \$299 Soundtrack applications (800/692-7753, www.apple.com).

PowerFX (www.powerfx.com) is offering two DVDs of formatted and indexed Apple Loops. PowerFX says you can search the loops on the DVDs via Soundtrack's Media Manager window, rather than having to download the material to your hard drive before searching.

The first DVD is Massive FX (\$199), a sound-effects library for film and video. Categories include sounds related to people, animals, explosions, alarms, tools, and transportation. The DV Composer's Toolkit (\$199) is made up of musical themes for movie backgrounds. The styles include Cinematic Hip Hop, Eastern Textures, Clubstances, and DV Themes and Scores. You'll get individual instrument parts and a Soundtrack .loop file that demonstrates basic arrangements.

AMG (www.amguk.co.uk) sells Apple Loops on CD. Dark Side of the Groove is a hip-hop collection of 78 loops. Or you can choose 2Step Ahead, which has more than 8,000 dance samples (see the Web site for pricing information). Because these are Apple Loops, you can quickly set the key and tempo of these files.—TERRI STONE

All Night Long

Many Live users think of the program as a tool for stringing together short bits of audio to create a composition. But a Live clip needn't be just a drumbeat, bass line, or pad. A clip can be an entire song—allowing a DJ to create sets for an entire evening of music.

To create sets of music, just drag AIFF or WAV song files into Live's clip slots (Live doesn't support the MP3 and AAC formats). To move smoothly from one song to the next, alternate tracks for each song and use Live's cross-fader to fade between one track and another.

For example, put the first song in the first clip slot of Track 1. The second song goes in the first clip slot of Track 2. Song three fits in the second clip slot

SOMETHING FROM NOTHING



Smoother Sets Create sets of music in Live.

of Track 1, and the fourth tune goes into clip slot two of Track 2. Select Crossfader from the View menu and choose the A Crossfade Assignment for Track 1 and the B Crossfade Assignment for Track 2. Before the first song begins playing, pan the cross-fade control to the left so you can hear Track 1 when it begins playing. As the song in Track 1 ends, trigger the song in Track 2 and move the cross-fade control all the way to the right to fade out of the first song and into the second. Follow the same procedure for each succeeding song.

Lighten the Load

Piling on effects and EQ and demanding that Live operate in high-quality mode can overtax your Mac's CPU. When that happens, glitches occur. If Live's CPU Load Meter routinely hovers around 75 percent or above, try these techniques:

1. Place Common Effects in Auxiliary Sends Effects in individual tracks tax the Mac's processor. Instead of inserting the same reverb effect in each track, place that reverb in a Send track and turn up each track's Send control to access the effect.

2. Turn Off EQ Bands If you're using EQ effects, switch off bands you're not using—Band 2 in the EQ Four effect, for example, if you've made no adjustment to Band 2. To do so, simply click on the corresponding numbered box in the effect (say, box 2 for Band 2) to disable it.

Robert Henke, the musical director of the German electronic-music project Monolake (www.monolake.de), has been instrumental in the development of Live. He has generously passed along this technique for creating a percussion track out of white noise in Live 3.0.

1. Clip and Loop Create a clip of white noise and loop about a second of it. Most synthesizers can generate such noise.

2. Add EQ Three You create the sound of the bass drum, snare, and hi-hat by manipulating the gain of the clip's low, mid, and high frequencies with Live 3's EQ Three effect. Click on the Live Effects button and then double-click on the EQ Three effect to add it to the Audio Effect window.

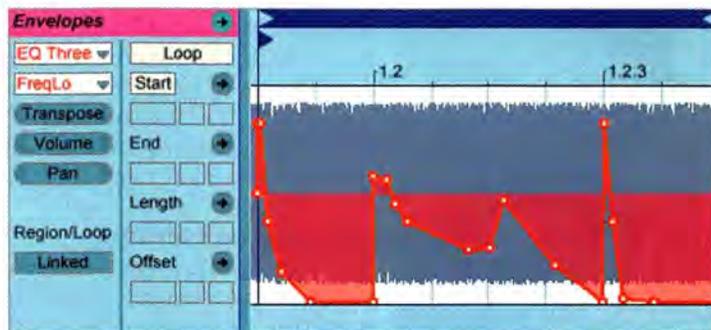
3. Manipulate Gain Switch back to clip view and, from the Envelope Editor, select EQ Three from the first pop-up menu and FreqLo from the pop-up menu below it. Add break points to increase gain at beats 1 and 3 (see "What a Kick!"). This gives you your bass drum sound.

Select GainHi from the second pop-up menu and create break points to increase gain on beats 1, 2, 3, and 4. This creates a hi-hat timbre that sounds on each beat.

To add a snare track, select GainMid from the second pop-up menu and, once again, create break points to increase gain where you'd like the snare part to fall.

4. Color the Sound Your clip is now percussive but could use some tonal color. Begin by adjusting the GainLo, GainMid, and GainHi frequency settings. Dropping the GainHi frequency to around -4.5 dB, for example, puts the hi-hat in a range typical of a 1970s drum machine. To make the clip crisper, click on the 48-dB switch.

5. Add More Effects You could stop here, but to make the track even more interesting, why not add other effects? For example, Henke placed EQ Four (a parametric EQ) before EQ Three and emphasized the middle and high frequencies to bring out the snare and hi-hat sounds. He then added a Chorus effect after EQ Three and engaged the *20 switch to add a didgeridoo quality to the clip.



What a Kick! By carving out sections of white noise and then manipulating their frequency, you can generate a drum kit.

3. Disable High-Quality Sound Select Preferences from the Live menu, click on the Defaults tab, and disable the Hi Quality option. With Hi Quality off, a less processor-intensive algorithm transposes samples more quickly. The resulting samples may be a bit distorted. If you must have the high-quality algorithm for certain clips, you can enable the Hi Quality option in the Clip View window only for those clips. □

When he's not engaged in journalistic pursuits, Contributing Editor CHRISTOPHER BREEN is a professional musician in the San Francisco Bay Area.



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

The Two-Mac E-mail Shuffle

YOU'RE IN A HOTEL ROOM IN THE MIDDLE OF NOWHERE, using a PowerBook to catch up on your work e-mail. You see a message from your manager asking about something you discussed in last week's project meeting. The nitty-gritty details you need are in an e-mail exchange you had with your company's consultant yesterday while you were using your desktop machine at work. Will you go through a long, confusing hunt for the e-mail messages, or will you be able to access them immediately? The answer depends on your level of e-mail savvy.

We'll show you some techniques for keeping track of all your e-mail when you're gone from your usual Mac for more than a few days, and then show you how to bring it all home. (If you use IMAP-based e-mail, you won't have these issues. But most people still rely on POP-based e-mail accounts. We'll give directions for organizing POP-based e-mail in Apple's Mail and Microsoft Entourage in OS X, but the settings are easily translatable to other programs; see "Mail Strategies" for guidance.) If you need to switch Macs more frequently, we have some tips for that situation, too.

Set Up E-mail on Both Macs

First things first: to prevent confusion, designate one computer as your primary Mac (the one you use most of the

time, probably your desktop machine or the one you use at your workplace) and the other (the one you use on the road or at home) as your secondary Mac.

Now make sure you can send and receive mail on both Macs using the accounts you'll want to read on both computers. You'll need to know your settings for each account: you can find them in your e-mail program (under Accounts in Entourage's Tools menu or in Mail's Accounts preference pane). Enter the settings in your primary Mac if they're not already there. Next, set up e-mail access on your secondary Mac, using the same settings. You'll probably need to enter a different SMTP, or outgoing mail, server for the secondary Mac—that of your ISP at home, for example.

On the secondary Mac, select the option that removes messages from the server when you check your e-mail (this may mean deselecting an option named Leave Messages On Server or something similar). Now, mail you receive on the secondary Mac won't be downloaded to the primary Mac upon your return. When you return, be sure the primary Mac is set to remove copies from the server, too. (In Mail, the option appears under the Advanced tab in the Accounts section; in Entourage, it appears under the Options tab in the Edit Accounts dialog box, which is accessible through the Accounts command.) There is an exception to this practice. It's always possible that mail will be lost or damaged. If that possibility concerns you, leave messages on the server until you back them up.

Put It All in One Place

If you're traveling and will be away from your primary Mac for a couple of days or longer, you can ensure that you'll be able to access all your e-mail messages and addresses by copying them to your secondary Mac via removable media, such as CDs, or your network.

It's much easier to move your mail between the two machines if you use the same e-mail program for each, because you can be sure the file formats don't conflict. To move your e-mail and address book wholesale in Mail, copy and move `Users/username/Library/Mail/` and `Users/username/Library/Preferences/com.apple.AddressBook.plist` to their corresponding places on your secondary Mac.



MICE FOR THE ROAD

Let's face it: sometimes your iBook's or PowerBook's conveniently located trackpad isn't so comfortable, but a full-size mouse will eat up a lot of space in your laptop bag. If you're looking for an alternative, one of a new crop of tiny mice may suit you perfectly.

The Kensington PocketMouse SE (\$40; www.kensington.com) is a stylish and small USB mouse with two buttons and a scroll wheel.

Macally and Logitech also make cable-clutter-free (read: wireless) mice with a transmitter that plugs into a USB port. The Macally rfMouseJr (\$49; www.macally.com) has an ingenious docking station you use with an AC adapter; you can leave the docking station at home and instead use the included rechargeable batteries, which last for two to three weeks on a charge. The Logitech Cordless Optical Mouse for Notebooks (\$40; www.logitech.com) uses regular AA batteries. The Kensington and Logitech mice come with their own tiny carrying cases. (Cordless mice for laptops are also available from Kensington.)—JENNIFER BERGER

'BOOK BAG OF THE MONTH: MARWARE

For the on-the-go Web surfer, nothing beats a spongy neoprene bag with real surfer appeal. The SportFolio II (\$40) has a tidy body (it just fits 12-inch iBooks), a full-size inside pocket, zippered and open outer pockets, plastic-reinforced sides, a cushioned handle, and a detachable strap. We like it because its shoulder strap is bouncy, reducing that pack-animal feeling. Marware (954/927-6031, www.marware.com) offers larger SportFolio bags (\$40 to \$58) with more pockets, and an even slimmer pocketless, handleless, strapless slipcase, the SportFolio Sleeve (\$30 to \$40). Marware bags fit the 12- and 14-inch iBook, the 12-, 15-, and 17-inch PowerBook G4, and the iPod, and range in price from \$20 to \$58. They're available from Apple's online store and various other retailers (see the company's Web site for listings).—FRITH GOWAN



RICK RIZNER

The downside to this method is that you'll overwrite your mail and addresses on the secondary Mac. If you have e-mail on that Mac that you want to keep, save the relevant e-mail boxes to another part of your hard drive, and then incorporate them into your mail program after you've overwritten the mail folder.

Moving your mail around in this piecemeal way is a little more difficult in Entourage because addresses and e-mail are stored in one large file called the Entourage database. So you'll want to drag and drop individual mail folders to your desktop or another place, then drag them to the secondary Mac's Entourage mail folder list. Then, export your contacts as text and import them into Entourage on the secondary Mac.

If, for whatever reason, you use two different e-mail programs, you'll need to import your mail into your secondary Mac's e-mail client, rather than simply copying mail from one place to another. The best mail-import features belong to Mail and Entourage, both of which can bring in messages from Eudora, Netscape, Microsoft Outlook Express, and Claris Emailer, among others. If you use another client, visit www.emailman.com/conversion/ to find utilities for importing e-mail from various programs. Just keep in mind that importing e-mail is a pain—not something easy to do at the end of every trip.

Moving mailboxes works best when you plan to be away from your primary Mac for some time. Your PowerBook or home Mac can function as your main e-mail machine until you return to the primary Mac and reverse the process.

Which Protocol?

All this is fine if you'll be away from your primary Mac for a while, but it's probably too much trouble if you just work at home a couple of days per week. In that case, you may want to change e-mail methods. POP, a commonly used protocol, copies or moves messages from a server to your computer. It isn't the best choice all the time for e-mailers on the go because, as we've shown, it takes some time and effort to move mailboxes between two Macs.

If you need quick access to your e-mail all the time, you might want to use IMAP, which stores your messages on a server that you connect to when you want

to access your mailboxes. Since messages don't reside on your computer as they do with POP, you can view them from any Mac or e-mail client, download them to your Mac if you want, or leave them on the server for later access. The downsides are that many IMAP servers let you store only 5MB to 15MB of e-mail, so you have to keep an eye on how much space you're using; IMAP isn't available from all companies and ISPs; and if you store your mail on the IMAP server, you must be connected to the Internet to read it.

If you have to suddenly leave town or are unexpectedly home sick (but not too sick to check e-mail), another method, Web mail, can be a truly convenient fix. Many ISPs let you access your account via the Web, but the drawbacks are that you can't use any of the filters, rules, or spam catchers you use with your mail application; the interfaces are often poorly designed; you can't import either your existing mail or your address book; and you must be connected to the Internet to see your e-mail. □

Mail Strategies

Base your multi-Mac e-mail strategy on three criteria: how long you'll be away from your Mac, how much of your e-mail you need to work with while away, and which e-mail client you'll use.

YOUR E-MAIL CLIENT	IF YOU WANT TO . . .	
	... use your e-mail on an iBook or PowerBook for an extended period of time, and transfer everything to your main Mac when you get home:	... access all your e-mail on both machines a couple of days a week or with little notice:
Entourage	Use POP, deselect Leave A Copy Of Each Message On Server in Accounts, and import messages.	Use IMAP or Web mail.
Mail	Use POP, select Remove Copy From Server After Retrieving A Message in the Accounts section of the Preferences pane, and copy and move <code>Users/username/Library/Mail/</code> and <code>Users/username/Library/Preferences/com.apple.AddressBook.plist</code> .	Use IMAP or Web mail.
Eudora	Use POP, deselect Leave On Server in the Checking Mail or Personality Extras section of Settings, and copy and move contents of <code>Users/username/Documents/Eudora Folder/</code> .	Use IMAP or Web mail.
Mailsmith	Use POP, deselect Leave Mail On Server in the Checking tab of the E-mail Accounts pane, copy <code>Users/username/Mail/Mailsmith User Data</code> , or use the Export Mail command.	Use Web mail (Mailsmith does not support IMAP).

SHELLY BRISBIN is the author of *Build Your Own Wi-Fi Network* (Osborne/McGraw-Hill, 2002). She juggles four e-mail accounts on three Macs in Austin, Texas.



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

Terminal's New Twist

PANTHER BRINGS PLENTY OF CHANGES TO KEEP USERS ON their toes. And command-line users found a major one: Apple switched the default shell used with Mac OS X from `tcsh` to `bash`. This change affects new accounts created in Panther. (If you upgrade from Jaguar and you were using `tcsh` as your shell, you won't see any difference.)

The shell switch won't affect you if you use Terminal to navigate your file system or issue the occasional command. But if you use the command line regularly, and especially if you've customized `tcsh` with shell variable settings and shell aliases, you'll need to change these settings—`bash` stores them in different files, and the way you modify the items is different as well.

Sound like a pain? You can easily continue using `tcsh` (see "Swap Your Shell"), but there *are* advantages to `bash`. For example, it offers editing modes that use commands similar to the main Unix text editors (`emacs` and `vi`), as well as the ability to edit commands in your command history. Also, if you plan to do shell scripting, `bash` is a much better choice than `tcsh`: it's a more common standard, and you'll find plenty of shell scripts for `bash` on the Web. First, you need to get up-to-speed with `bash` basics.

Which Files bash Reads

Every shell reads a certain set of files for setup and configuration information. (This is somewhat akin to regular applications reading preference files.) The `bash` shell reads the following files in this order:

`/etc/profile`: This file contains systemwide environment and startup commands and variables, including the default `PATH` variable. In OS X 10.3 (Panther), this file contains the following:

```
# System-wide .profile for sh(1)
PATH="/bin:/sbin:/usr/bin:/usr/sbin"
export PATH
[ -r /etc/bashrc ] && source /etc/bashrc
```

This tells the `bash` shell what default search path to use when looking for commands, and then tells it to `source`, or read, the `/etc/bashrc` file.

`/etc/bashrc`: This file contains systemwide functions and aliases, including the shell prompt. Under Panther, this file contains the following:

```
# System-wide .bashrc file for interactive bash(1) shells.
```

```
PS1='\h:\w \u\$ '
```

```
# Make bash check its window size after a process completes
```

```
shopt -s checkwinsize
```

This sets the prompt and tells `bash` to check its window size after processes complete.

The `bash` shell then reads one of the three following files: `~/.bash_profile`, `~/.bash_login`, or `~/.profile`.

The `bash` shell reads *only one* of these files, and it looks for them in that order. Once it has found one of these files, it reads the contents and then skips the remaining files in the list. You can use any of these files to define environment and configuration settings, but make sure you use only one of them. For this reason, `~/.bash_profile` is safest to use, since it's the first file `bash` looks for. This is where you should put your aliases and variables. It's the equivalent of the `~/.tcshrc` file under the `tcsh` shell.

`Bash` reads `~/.bashrc` if you launch it as a non-login shell (if you type `bash` at a Terminal prompt, for example, and launch a `bash` session in that manner). If you plan to use it as a non-login shell, consider duplicating any aliases or variable settings here.

The Handy PATH Variable

Apple includes a `PATH` variable setting in the `/etc/profile` file: `PATH="/bin:/sbin:/usr/bin:/usr/sbin"`. It tells the shell where to look for commands you type in Terminal.

You can add as many directories (separated by colons) as you want to this variable by adding the following line to your `.bash_profile` file: `PATH=$PATH:directory1:directory2:directory3"`.

Why would you want to? This is a handy shortcut if you have command-line tools in other locations or if you have your own shell scripts in your Home



SWAP YOUR SHELL

While Apple has chosen `bash` as the default shell for new accounts under Panther, you can use any shell you want. Keep `tcsh`, or use `ksh`, `zsh`, or others. There are two ways to do this. The easy way to do it is to change your Terminal preferences.

You can change your shell more permanently by using the `chsh` command. Run the command as follows:

```
chsh -s /bin/tcsh username
```

This changes the shell directly in the NetInfo database, and the next time you open a new Terminal window, Panther uses this new shell. You don't need to quit Terminal for the change to take effect.

MORE INFO ABOUT BASH

directory. For example, I have a bin directory in my Home directory, so I add it to the PATH variable by including the following: `PATH=$PATH "~/bin"`.

You can check your PATH variable when you start up a new bash session by typing the following: `echo $PATH`. This returns a line showing all the directories in the PATH variable.

Shell and Environment Variables

Shell and environment variables let you set certain options, such as protecting files against overwriting, or turning on the spelling checker when you type directory names.

The bash shell uses the `set` and `shopt` commands to turn variables on and off and to set their values. If you run the `set` command alone, bash returns a list of all variables that have been set for you. Some of these come from bash and its configuration files; others come from different parts of OS X (such as your user name, home directory, user ID, and so forth). To see which options you can change with the `set` command, run the following: `set -o`. To set one of these options, use the following: `set -o option name`. To unset one of these options, run this: `set +o option name`.

The options available with the `set` command allow you to customize the shell environment. One useful option is the `noclobber` variable. It tells the shell not to overwrite existing files when redirecting output to a file. You can turn this on by running the following: `set -o noclobber`.

The bash shell offers another group of options that you can set and unset using the `shopt` command. To see a list of these options and their status, run `shopt -p`. Options with `-s` before their names are turned on, and options with `-u` before their names are turned off.

To set one of these options, run this command: `shopt -s option name`. And to unset an option, run `shopt -u option name`.

One useful option you can turn on in this way is the `cdspell` option. If you turn this on, the shell tries to correct spelling errors when you run the `cd` (change directory) command followed by the name of a directory. Set this option as follows: `shopt -s cdspell`.

Finally, bash offers a group of environment variables, which you can set using the `export` command. You've already seen one example, in the `/etc/profile` file, when I set the PATH variable. You can either use the form in that example, or you can set environment variables such as this one: `export variable=value`.

The Ultimate Shortcut: Shell Aliases

Shell aliases are shortcuts for commands you run in Terminal. You can set aliases for any commands, whether they're short and simple or long and com-

- > Type `man bash` in Terminal to see the program's `man` (manual) page.
- > Check out the bash shell's home page (www.gnu.org/software/bash/bash.html).
- > *Learning the bash Shell*, by Cameron Newham and Bill Rosenblatt (O'Reilly, 1998), is the only book that focuses entirely on bash.

plex. Aliases are like keyboard shortcuts. At any time, you can see which ones you've set by running the `alias` command with no arguments.

With bash, you set aliases as follows:

```
alias ls=ls
alias ls='ls -lF'
```

These two examples set aliases for the `ls` command, which lists files in a directory. In the first example, no quotes are necessary since the command you're aliasing has no options or arguments. But if you want to alias a longer command, such as the second example (which creates a detailed list of files that includes file types), you need to use single quotation marks around it.

If you're ready to switch from `tsh` to bash, now you've got the basics. Transfer all your settings and aliases to the appropriate files, and get a grip on bash in just a few minutes. □

GEEK FAVORITES

If you love gadgets, get your daily fix at Gizmodo (www.gizmodo.com). This Weblog gathers news, commentary, and analysis about all things gadget-related and organizes it neatly into categories.—SCHOLLE SAWYER MCFARLAND



KIRK MCELHEARN is a freelance writer and journalist who lives in the French Alps. He is also a coauthor of *Mastering Mac OS X* (Sybex, 2003).



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

Mac OS X Hints

THIS MONTH, FIND OUT HOW TO CHANGE THE LENGTH OF time that Apple's Mail keeps your sent messages, tweak Safari with the debug menu, discover hidden keyboard shortcuts, banish the Dock, and more.

Learn Keyboard Shortcuts

Do you ever feel that there must be a ton of keyboard shortcuts you're not aware of? Fortunately, Apple has finally put together a relatively complete listing of all known keyboard shortcuts. You can find it at <http://docs.info.apple.com/article.html?artnum=75459>.

Of course, OS X 10.3 lets you assign your own keyboard shortcuts, via the Keyboard & Mouse preference pane, so you can take care of missing favorites yourself.

Pick How Long to Store Sent Mail Messages

In the Accounts section of Mail's preferences, you can narrowly specify when the program erases your sent messages—never; after one day, one week, or one month; or when you quit Mail. But here's how you can keep your sent messages for as long as you want.

Quit Mail, and then navigate to Library: Preferences in your user folder. Open `com.apple.mail.plist`

with a text editor such as BBEdit or TextEdit. Now find the section that looks like this:

```
<key>NumberOfDaysToKeepSentMessages</key>
<string>-1</string>
```

The number you'll see on the `<string>` line will vary based on your settings (-1 means "never delete"). To change the length of time Mail keeps your sent messages, just replace the number with the length of time (in days)—180 for six months, for example. Save the file, and Mail will keep your sent items for the time period you specified.

Recover a Deleted Stickies Note

In most Mac applications, closing a window without saving changes means that the changes are gone for good. In Stickies, closing a note is equivalent to deleting it, so the program asks whether you're sure you want to. If you accidentally delete a note—and you're still running OS X 10.2—just press `⌘-Z` to undo the

UNIX TIP OF THE MONTH

You may clean out your Mail folders regularly, deleting old sent and received messages, but Mail's indexing feature can still cause you to waste disk space. Each mail folder is indexed, which allows for fast searches of thousands of e-mail messages. But indexes can bloat over time, as they aren't reduced in size when you delete messages from your mailboxes. Periodically allowing Mail to re-create these files will reduce the size of the index files.

Mail hides its index files inside package files, so you can't search for them in the Finder. But you can find and remove them easily in Terminal. In 10.2, launch Terminal and type `cd ~/Library/Mail`. Press enter to change to the proper directory, and then type `du -kc "find . -name *mbox.SKindex" -print"`.

Apple renamed the index files in 10.3, so there are two small changes for Panther users. To find and list all your index files, change to the Mail folder (`cd ~/Library/Mail`), and then type `% du -hc "find . -name *content_index" -print"`.

Now that you've found the index files (see "Overstuffed Mailboxes," which shows the number of kilobytes for each mailbox), it's time to get rid of them. As with any potentially destructive task, you should back up your Mail folder before performing the next step—which should be completely harmless, but it's always better to be safe than sorry. Just copy your Mail folder to another spot on your system in case you have to restore it. Now type the following in Terminal:

```
Terminal — tcsh (ttyt1)
Last login: Tue Nov 11 22:13:41 on ttty1
Welcome to Darwin!
[gee3book:~] rob% cd ~/Library/Mail/
[gee3book:~/Library/Mail] rob% du -k "find . -name *mbox.SKindex" -print"
416  ./Mailboxes/macintoshhints/ to do.mbox.mbox.SKindex
40   ./Mailboxes/macintoshhints/beta-feedback.mbox.mbox.SKindex
60   ./Mailboxes/macintoshhints/beta-testers.mbox.mbox.SKindex
20   ./Mailboxes/macintoshhints/osx guidebook/french.mbox.mbox.SKindex
16   ./Mailboxes/macintoshhints/osx guidebook/german.mbox.mbox.SKindex
16   ./Mailboxes/macintoshhints/osx guidebook/greek.mbox.mbox.SKindex
8    ./Mailboxes/macintoshhints/osx guidebook/italian.mbox.mbox.SKindex
12   ./Mailboxes/macintoshhints/osx guidebook/japanese.mbox.mbox.SKindex
32   ./Mailboxes/macintoshhints/osx guidebook/site licenses.mbox.mbox.SKindex
24   ./Mailboxes/macintoshhints/osx guidebook/spanish.mbox.mbox.SKindex
24   ./Mailboxes/macintoshhints/osx guidebook/swedish.mbox.mbox.SKindex
12   ./Mailboxes/macintoshhints/osx guidebook.mbox.mbox.SKindex
36   ./Mailboxes/macintoshhints/osxhints book/errors.mbox.mbox.SKindex
532  ./Mailboxes/macintoshhints/osxhints book.mbox.mbox.SKindex
72   ./Mailboxes/macintoshhints/osxhints info.mbox.mbox.SKindex
1824 ./Mailboxes/macintoshhints/osxhints pr.mbox.mbox.SKindex
552  ./Mailboxes/macintoshhints/osxhints saved.mbox.mbox.SKindex
416  ./Mailboxes/macintoshhints/osxhints site stuff.mbox.mbox.SKindex
72   ./Mailboxes/macintoshhints/osxhints unix.mbox.mbox.SKindex
1768 ./Mailboxes/macintoshhints/registrants.mbox.mbox.SKindex
8    ./Mailboxes/macintoshhints.mbox.mbox.SKindex
```

Overstuffed Mailboxes A few Unix commands make it easy to index your Mail mailboxes—and save a lot of space as a result.

```
(for 10.2 users) find . -name *mbox.SKindex" -delete
(for 10.3 users) find . -name *content_index" -delete
```

Launch Mail, and as you access each mailbox, the app will rebuild its index file. You can expedite the process by selecting all your mailboxes at once in the Mailboxes pane.

If you quit Mail and rerun the commands to list the size of your index files, you'll be pleasantly surprised at how much space you've saved—if you're an active e-mail user, you could recover 100MB of drive space.

KILLING THE DOCK

If you've installed a third-party utility such as PathFinder or DragThing, you may no longer need to use the Dock, and you may want to banish it for good. You've tried force-quitting the Dock, only to find that it automatically restarts. There are a couple of different ways around this problem.

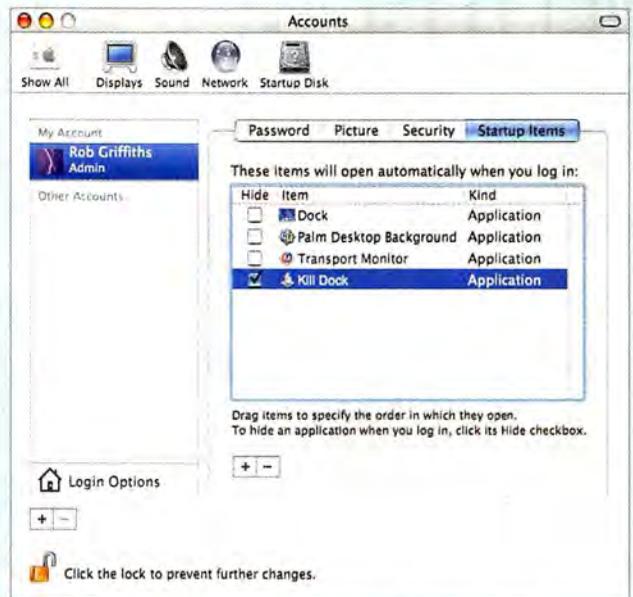
The easiest solution is to reposition the Dock to a location where you're unlikely to activate it—at the top of the screen. While Apple lets you place the Dock on either side or the bottom of your screen, there's no obvious way to move it to the top. You can use TinkerTool, or type the following command in Terminal: `defaults write com.apple.dock orientation top`.

If you're running 10.3, just type `killall Dock` to restart the Dock and have your changes take effect. In 10.2, you can use Process Viewer (in Applications: Utilities) to accomplish the same thing. After the Dock restarts, type `⌘-option-D` to hide it, and you'll find it's now nearly impossible to activate the Dock—you have to very precisely hold your mouse just below the menu bar in order to activate it.

Although the above solution works, the Dock is still running, taking up some of your valuable RAM and CPU cycles. If you'd like to kill it for good, you'll have to do a bit more work. Keep in mind that the following solution also affects the Dock for all users on your machine.

To quit the Dock for good, you need to make the system unable to restart it after you quit it. If you simply rename or move the Dock application, OS X will have no idea where to find it. Since the Dock is owned by the System, the easiest way to move it is with root privileges in Terminal. Open Terminal and type `cd /System/Library/CoreServices`, press enter, and then type `sudo mv Dock.app /Applications/Dock.app`.

This will move the actual Dock application into the global Applications folder, so the next time you quit the Dock, it will be unable to restart. There's more to do, though: the Dock has one other critical function—it "activates" the desktop the first time it's launched. If you never launch the Dock, you won't have a functional desktop. So the final step is to trick the system into launching the Dock once and then quitting it. To do this, you'll need a very simple AppleScript. Launch Script Editor (in Applications: AppleScript) and enter the following text:



Start Me Up With a little Unix, a simple AppleScript, and OS X's Startup Items feature, you can rid yourself of the Dock forever.

```
tell application "Dock"
    quit
end tell
```

Select File: Save As, give the script a name (in this example, Kill Dock), and save it as an Application.

Now go to System Preferences, open Login Items (in 10.2) or open Accounts and click on the Startup Items tab (in 10.3), and add two new items. As the first item to load at login, add the Dock you moved. As the last item to load at login, add the Kill Dock script you created (see "Start Me Up").

Now log out and log back in. If you've done everything right, you'll see the Dock appear and then vanish. If you wish to get the Dock back, remove the startup items, and then move `Dock.app` back to its original location.

close operation. In most cases, your note will pop back into existence. Sadly, this very useful feature has been removed from the 10.3 version of Stickies.

Enable Safari's Debug Menu

During the development cycle, programmers use debug menus, which provide an easy way to test compatibility and other issues. Most of the time, these debug menus are removed before the product's final release. But in some cases, they're left in the final release but hidden from normal view. This is the case with Safari, and it takes just one simple Terminal command to enable its Debug menu. Quit Safari, launch Terminal, and type `defaults write com.apple.Safari IncludeDebugMenu 1`. You can also use the free TinkerTool, (www.bresink.com/osx/TinkerTool.html) to enable this menu.

When you relaunch Safari, you'll see the new Debug menu after Safari's Help menu. The Debug menu has many uses, but two are particularly useful. You can use

the User Agent menu item to make Web sites believe that you're coming from the latest version of Microsoft Internet Explorer (IE) on Windows. Though this won't help you with sites that have coded Windows-specific features, it may very well help you with sites that simply check to see whether you're using IE on Windows before they let you in. You may find that sites you previously couldn't view work perfectly fine in Safari with the User Agent set to Windows MSIE 6.0.

The second useful trick is the Keyboard And Mouse Shortcuts menu item. Choose this, and you'll see a Web page listing a ton of shortcuts that will help you work more efficiently in Safari.

You probably won't be interested in the other Debug menu items, but give them a look if you'd like to see some of what goes into developing and testing a new Web browser. □

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



Mac OS X Hints offers tips and tricks for using hidden features in OS X. We want to hear from you! If you've got suggestions for column topics or want to tell us what you think of Mac OS X Hints, e-mail us at macosxhints@macworld.com. For more hints, go to www.macosxhints.com.

Mac 911

SURE, APPLE'S MARKETING AND GRAPHICS DEPARTMENTS break out in spots when they're faced with the prospect of a "Mac OS Eleven." ("Roman numerals? Arabic numbers? Time to switch from felines to a member of the family Mustelidae?") But Panther—the code name for Mac OS X 10.3—has earned its .3 appendage, not as a corporate convenience but for its evolutionary nature. Skeptical? Join me as we contrast Apple's Mail, pre- and post-Panther.

The Attachments Methods

I receive many e-mails with large attachments, and after saving the attachments elsewhere, I remove them to save space. But unlike every other e-mail application I've used, Jaguar's Mail doesn't provide an option for removing attachments.

Larry Klein, Cullman, Alabama

I'll start by stating this column's main theme: What can't be done easily (or done at all) in Jaguar may be a cinch in Panther. Nowhere is this more apparent than in Mail—an application that was more than a little limited in Jaguar. Here's proof:

UNSOLICITED ADVICE

Panther changes Mac OS in a lot of beneficial ways. Schoun Regan of The Mac Trainers (www.themactrainers.com) has passed along information indicating that Panther can also, in the wrong hands, be a dangerous cat.

For the first five minutes you're logged on as an administrator in Panther, you have expanded privileges in the Finder. Specifically, unlike with Jaguar, during those five minutes you're free to throw away any file or folder you like.

This includes the System Folder, the Library folder, or a user folder. If you toss one of these folders, you risk data loss and could, quite possibly, end up with a Mac that has a completely corrupted operating system.

You are also free to change the permissions of folders on your Mac. So if User A logs on, she can change the permissions of the folders in User B's Home folder and have access to documents that, under normal circumstances, are inaccessible to User A.

After those five minutes have elapsed, you're asked for your administrator's password before you're allowed to toss such a file or folder. Enter that password and toss at will. In Jaguar, you're forbidden from performing such actions unless you're logged in as root or you've mucked around in Terminal with the `sudo` command.

Although some people may contend that this shouldn't be a problem because administrators can be trusted with this kind of power (and shouldn't be administrators if they don't know what they're doing), keep this in mind: anyone who fires up that new iMac loaded with Panther is an administrator. Novices need to learn that they should not, under any circumstances, trash files they don't understand the purpose of.

If you'd like more information on this subject, keep an eye on Regan's Web site, where he explains the situation in greater detail.

To remove an attachment in the Panther version of Mail, select the message that contains the attachment you want to toss, and choose Remove Attachments from the Message menu. Easy, yes?

Now let's look at the Jaguar method.

Quit Mail. Navigate to your Library: Mail folder and then to the mailbox folder from which you want to strip the attachments (POP-*nobody*@mail.*nobody.org*, for example). Control-click on the mailbox file within that folder (INBOX.mbox, for instance), and select View Package Contents from the resulting contextual menu. Double-click on the .mbox file in the window that appears; this opens the file in TextEdit. Scroll through the text file until you see page after page of gibberish that's preceded by a line of text that reads something like —B_3120297041_53885. This is an attachment. From the message that precedes the gibberish, you should get a hint as to the contents of the attachment.

Highlight and delete the attachments you don't want (beginning with that —B_3120297041_53885 entry and ending with a similar entry), and save the file. When you next open Mail, you'll find the attachment you removed in TextEdit is likewise excised from Mail.

Font Follies

I use a Power Mac G4 running OS X 10.2.8, with the HP LaserJet 4050 and Epson Stylus Photo 1280. Most Mail message text prints in 7- or 8-point size. Can I control the printer font size?

Warren E. Aut, Laguna Beach, California

In Jaguar's Mail, you must make changes in the Fonts & Colors preference pane. Although the default message font is 12-point Helvetica, the font doesn't print at that size. To make the printed text larger, select a higher point size for the Message font: 14- or 16-point, for example. Regrettably, doing so also increases the text size of the messages on your monitor.

This isn't a problem in Panther's Mail. Although the newest Mail uses the same default settings in the Fonts & Colors preference pane, messages viewed in 12-point type actually print at that point size.

A Sign of the Times

In e-mail clients such as Microsoft Outlook Express and Entourage, my signature is at the end of my replies. In

TIP OF THE MONTH

On some Web sites, you can't distinguish links from regular text. To better differentiate the links in the Safari Web browser, you can take advantage of Safari's Advanced preference pane to use another style sheet for Safari.

Using Text Edit, create a document that reads:

```
focus { outline: 1px dotted invert }
a:link { color: #CC0000; text-decoration: none; }
a:link:active { color: #CC0099; outline: gray 1px dotted; }
a:visited { color: #000099; text-decoration: none; }
a:visited:active { color: #006699; outline: gray 1px dotted; }
```

Save the document in plain-text format as Colors.css, and then choose this style sheet in the Advanced tab of Safari's preferences.

Now links are no longer underlined, unvisited links are red, and they turn violet as you click on them. The visited links are blue and, when you click on them, change to teal.

Judith Epstein, Highland Park, Illinois

Apple's Mail, my signature is at the end of all content, regardless of how many messages and replies there are. Can I place a signature at the end of a reply without having to scroll to the bottom of the message window and cut and paste my signature?

Tim Smith, Cincinnati, Ohio

In Jaguar's Mail, no. In Panther's Mail, kind of.

In Jaguar's Mail, your signature is jammed at the bottom of the message. I suggest that you use the free version of Michael Kamprath's macro application, Keyboard Maestro (www.keyboardmaestro.com), to create boilerplate text of your signature, assign that text to a keyboard combination, and use that combination to easily insert the text where you want it to go.

The Signature preference pane in Panther's Mail is more flexible, allowing you to place your signature at the end of the message or above any quoted text. If, like me, you sometimes like to insert your signature at the location of the cursor, keep Keyboard Maestro in mind.

Blind Leading the Blind

There's no Bcc (blind carbon copy) header in the version of Mail that ships with Jaguar. Does Bcc appear in Panther's Mail?

David Markowitz, Mountain View, California

Both Jaguar's Mail and Panther's Mail offer Bcc headers, but neither displays that header by default. To add it in Jaguar's Mail, create a new message and select Add Bcc Header (⌘-shift-B) from the Edit menu. In Panther, choose Bcc Header (⌘-option-B) from the View menu.

All Junked Up

How do you empty Mail's Junk folder?

Larry Grossberg, Hillsborough, North Carolina

In Panther, control-click on the Junk folder and select Erase Junk Mail from the contextual menu (or select Erase Junk Mail from the Mailbox menu).

There is no such command in Jaguar's Mail, so you must employ either the manual or the automatic method. The manual method entails opening the Junk folder, selecting all the messages in it, and pressing the delete key. To automatically delete mail in the Junk folder, open the Accounts preference pane, select your account, click on the Edit button, and click on the Special Mailboxes tab. In the Junk portion of the window, choose an option for automatically deleting the contents of your Junk folder: when messages are one day, one week, or one month old, or when you quit Mail.

Dating Rules

I want to archive my business-related e-mail. Unfortunately, I can't find a way to enter date-based rules in Mail's Rules

preferences. I'd hate to return to Microsoft Entourage just because it handled dates better.

George Cancel, Taunton, Massachusetts

In Jaguar's Mail you can create a meager date rule by following these steps:

Create a new rule in Mail's Rules preference pane. In the If section of the window, select Edit Header List from the first pop-up menu. In the Panel window that subsequently appears, enter Date in the Header field, click on Add Header, and then click on OK.

In the Rules section, configure the top row of pop-up menus to read: Date Contains Month (where Month is the abbreviation for the month of messages you want to monkey with—Feb, for instance). In the Actions portion of the rule, select Transfer Message from the first pop-up menu and then choose a folder for storing your messages. Apply this rule to your messages, and those that meet the date criterion will be moved.

In Panther, Mail includes an expanded set of rules—including Date Sent and Date Received with the Is Less Than and Is Greater Than conditions (see "The Dating Game").

The Dating Game

Panther's Mail lets you create rules based on the date messages were sent or received.

Description: Archive Last Week's Messages

If any of the following conditions are met:

Date Received Is Less Than 7 days old

Perform the following actions:

Copy Message to mailbox: February Messages

Cancel OK

Contributing Editor CHRISTOPHER BREEN is the author of *Secrets of the iPod*, fourth edition (Peachpit Press, 2004), and a regular on TechTV's *Call for Help*.



Visit the Mac 911 Weblog (www.macworld.com/weblogs/mac911), or 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.

ADVERTISERS AND PRODUCT INDEX

Interact with the companies whose products and services are advertised in **Macworld**

ADVERTISER	INTERACT	PAGE NO.
Alsoft	800-257-6381	42-43
American Power Conversion	888-289-APCC	25
Anthro	anthro.com	11
Apple Computer	-	C2-1
Aspyr Media	aspyr.com	52,56
Avid Technology	avid.com/xpresspro	61
B & H Photo	bandhp.com	101-103
Bose Corporation	bose.com	73
Broadway Photo	800-361-3436	95
Brother International Corp.	brother.com	13
CDW	800-509-4239	19
ClubMac	800-217-9153	105
Extensis	extensis.com/X1	8
Geek Cruise	geekcruises.com	6-7
Griffin Technology	griffintechology.com	100
Insider Software	insidersoftware.com	41
J&R Computer World	800-221-8180	104
Kensington	kensington.com	C4
La Cie	lacie.com	23
Legacy Electronics	legacyelectronics.com	10
MacConnection	macconnection.com	98-99
MacMall	800-222-2808	96-97
MacSoft	macsoftgames.com	39,55
MicroMat	800-829-6227	21
MYOB	myob.com/us	C3
Nikon Electronic Imaging	nikon.com	2-3
Now Software	nowsoftware.com	34
Otherworld Computing	macsales.com	106-109
Primera Technology	primera2.com	58
Real Software	realsw.com	33
Small Dog Electronics	smalldog.com	35
Wacom	tabletphotofun.com	15

PAGE NO.	ADVERTISER	GET-INFO
A C C E S S O R I E S		
FURNITURE		
11	Anthro	-
H A R D W A R E		
COMPUTER SYSTEMS		
C2-1	Apple Computer	-
MISCELLANEOUS		
25	American Power Conversion	73
61	Avid Technology	39
73	Bose Corporation	-
13	Brother International Corp.	119
19	CDW	2
100	Griffin Technology	-
C4	Kensington	1
23	La Cie	-
10	Legacy Electronics	38
C3	MYOB	144
35	Small Dog Electronics	-
MONITORS/ GRAPHICS BOARDS		
15	Wacom	-
PRINTERS		
58	Primera Technology	-
SCANNERS & DIGITAL CAMERAS		
2-3	Nikon Electronic Imaging	-
S O F T W A R E		
BUSINESS/PRODUCTIVITY		
8	Extensis	68
34	Now Software	-
CLIP ART & FONTS		
41	Insider Software	-
ENTERTAINMENT		
52,56	Aspyr Media	91
39,55	MacSoft	30
UTILITIES		
42-43	Alsoft	141
21	MicroMat	37
33	Real Software	-
M A I L O R D E R		
101-103	B & H Photo	-
95	Broadway Photo	-
105	ClubMac	98
104	J&R Computer World	57
98-99	MacConnection	-
96-97	MacMall	132
106-109	Otherworld Computing	-
S E R V I C E S		
TRADESHOWS/CONFERENCES		
6-7	Geek Cruise	-

Broadway Photo

2922 Ave. L, Brooklyn, NY 11210

1-800-361-3436

Store Hours: Mon-Thurs: 9am-9pm • Fri: 9am-4pm • Sun: 9am-5pm • Sat: CLOSED

Visit our website at: www.bwayphoto.com

Customer Service: 718-338-3028
Local & International: 718-338-1800
24 Hour Fax Hotline: 718-338-3029
Email: info@bwayphoto.com

We specialize in Overnight Delivery. Place Your Order by 7:00 PM EST and Receive Your Order by the Next Business Day! For an Additional \$29.95



- 21 Day Satisfaction
- Next Day Air Available
- Worldwide Shipping
- No Surcharge on Credit Cards
- Government & School PO's Accepted

DIGITAL CAMERAS

NIKON Coolpix SQ
• 3.11 MegaPixels
• 3x Opt.
\$249⁹⁹



NIKON Coolpix 4300
• 4.0 MegaPixels
• 3x Opt. Zoom/Dig. Zoom
• USB
Coolpix 2100 \$149.99
Coolpix 3100 \$219.99



NIKON Coolpix 5400
• 5.1 MegaPixels
• 4x Digital Zoom
\$509⁹⁹



NEW! Nikon Coolpix 3700 CALL
NIKON D1X
• 5.47 MegaPixels
• SLR Type Dig. Camera
• Uses Nikon AF-D/1/5 Lenses
\$2849⁹⁹



NEW! D2H \$2499.99
OLYMPUS C-5000
• 5.0 MegaPixels
• 3x Optical Zoom
• 4x Digital Zoom
\$339⁹⁹



NEW! Stylus 400 Digital \$299.99
NEW! Stylus 300 Digital \$259.99
PENTAX Optio 555
• 5.0 MegaPixel CCD
• 4x Dig./5x Opt. Zoom
\$409⁹⁹



NEW! Stylus S4 \$284.99
IST-Digital \$1699.99
SONY DSC-P10
• 5.0 MegaPixels
• 3x Optical Zoom
\$339⁹⁹



DSC-P9 \$264.99
DSC-P2 \$164.99
DSC-P52 \$209.99
DSC-P72 \$234.99
DSC-P92 \$299.99
CANON EOS 10S
• 11MegaPixels
• 2" LCD Screen
• IEEE 1394
\$6009⁹⁹



Special! 1D \$2599.99
DS18/DS100 CALL
KODAK DX6490
• 13.85 MegaPixels
• 3x Optical Zoom
• IEEE 1394
\$384⁹⁹



NEW! DX6440 \$309.99
NEW! DCS-Pro 14N \$3549.99
DX6340 \$239.99
FUJIFINEPIX F700
• 6.2 MegaPixels
• 3x Optical Zoom
• 1.8" LCD
\$349⁹⁹



NEW! Finepix A210 \$154.99
NEW! Finepix A310 \$189.99
SIGMA SD-10
• 10.2 MegaPixels
• IEEE 1394
• USB
\$1079⁹⁹



NIKON Coolpix 5700
• 5.24 MegaPixels CCD
• 4x Optical Zoom
• 2/3" CCD
\$639⁹⁹



OLYMPUS E-20
• 5.24 MegaPixels
• 2/3" CCD Screen
• USB
\$869⁹⁹



OLYMPUS C-5060
• 5.1 Million Pixels
• 4x Optical Zoom
\$509⁹⁹



SONY DSC-F828
• 1.8" LCD Screen
• 4x Digital Zoom
• 7x Optical Zoom
\$829⁹⁹



DSC-F717 \$604.99
NEW! DSC-F77A \$329.99
SONY DSC-V1
• 5.0 MegaPixels
• 4x Digital Zoom
• 4x Optical Zoom
\$439⁹⁹



DSC-U60 \$219.99
DSC-T1 CALL
CANON PowerShot G5
• 5.0 MegaPixels
• 4x Optical Zoom
• 1.8" LCD Screen
\$489⁹⁹



A60 \$174.99
A70 \$234.99
NEW! A80 \$289.99
FUJIFINEPIX S5000
• 3.11 MegaPixels
• 10x Optical Zoom
\$274⁹⁹



NEW! Finepix S3000 \$214.99
NEW! Finepix S7000 \$514.99
MINOLTA Dimage A1
• 5.24 MegaPixels
• 7x Optical Zoom
• 1.8" LCD
\$619⁹⁹



NIKON D100
• 6.1 MegaPixels
• 1.8" LCD Screen
• USB
\$1149⁹⁹



OLYMPUS C-5000
• 5.4 MegaPixels CCD
• 4x Dig./5x Opt. Zoom
\$324⁹⁹



D-390 \$189.99
NEW! D-560 \$259.99
NEW! D-565 \$259.99
OLYMPUS C750
• 5.0 MegaPixels
• 10x Optical Zoom
• 4x Digital Zoom
\$404⁹⁹



C-740 \$319.99
NEW! E-1 \$1369.99
SONY Mavica CD-500
• 4.0 MegaPixels
• 2.5" LCD Screen
• 1/1.8" CCD
\$449⁹⁹



NEW! CD350 \$309.99
CANON DIGITAL REBEL KIT
• 6.3 MegaPixel CCD
• 1x Opt./1x Digital Zoom
\$799⁹⁹



Digital Rebel \$699.99
EOS 10D \$1179.99
CANON PowerShot S50
• 5.0 MegaPixels
• 3x Opt./4.1x Digital Zoom
• USB
\$359⁹⁹



NEW! S400 \$339.99
NEW! A300 \$164.99
NEW! SD10 \$279.99
NEW! SD100 \$249.99
FUJIFINEPIX S2
• 3024x2016 Resolution
• USB
\$1299⁹⁹



NEW! Finepix S3 CALL
MINOLTA Dimage Z1
• 3.2 MegaPixels
• 10x Optical Zoom
• 4x Digital Zoom
\$299⁹⁹



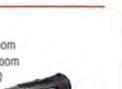
NEW! Dimage X20 \$149.99
NEW! Dimage G506 \$269.99
NEW! Dimage G406 \$249.99

DIGITAL VIDEO

CANON GL-2
• IEEE 1394
• 20x Optical Zoom
• 100x Digital Zoom
• 2.5" LCD Screen
\$1809⁹⁹



JVC GR-D90
• 16x Optical Zoom
• 700x Digital Zoom
• 3.5" Color LCD
\$329⁹⁹



NEW! GR-DVP9 \$719.99
SR-V380 \$699.99
HR-DV33 \$619.99
NEW! JY-HD10U \$2349.99
NEW! GRD200 \$399.99
GR-D30 \$294.99
GR-D70 \$304.99

SONY DCR-VX2100
• 48x Digital Zoom
• 12x Optical Zoom
• 2.5" LCD Screen
\$2099⁹⁹



DCR-VX2000 \$1949.99
NEW! DHR-1000 \$2979.99
GVD1000 \$929.99
GVD800 \$619.99
NEW! DCR-DVD100 \$639.99
NEW! DCR-DVD200 \$699.99
NEW! DCR-DVD300 \$779.99

SONY DCR-PC330
• Mini DV Format
• Smallest DV Camera
• 2.5" LCD Screen
• BLUETOOTH
\$1129⁹⁹



NEW! DCR-PCI05 \$649.99

CANON OPTURA 300MC
• 2.0 MegaPixels
• 2.5" LCD Screen
• IEEE 1394
\$849⁹⁹



Optura 10 \$429.99
Optura 20 \$519.99
NEW! Optura XI \$979.99

JVC GR-DV800
• 1.33 MegaPixels
• 10x Opt. Zoom
• 2.5" Color LCD
• USB
\$424⁹⁹



GR-DV3000 \$609.99
NEW! GR-DV4000 \$799.99
GR-DX75 \$429.99
Special! GR-DX95 \$479.99
NEW! GR-DX300 \$569.99
GR-DV500 \$389.99
NEW! GR-HD1 \$1829.99
Special! GY-DV5000 \$3699.99
Special! GY-DV300 \$1879.99

SONY DSR-PD170
• 2.5" LCD Screen
• 12x Optical Zoom
• 1.0 MegaPixels
\$2999⁹⁹



Special! DSR-PDX10 \$1669.99
DSR-PD150 \$2499.99

PANASONIC PV-DV953
• USB
• 3.5" LCD Screen
• 700xDigital Zoom
• 10x Optical Zoom
\$869⁹⁹



PV-GS505 \$414.99
NEW! PV-GS70 \$604.99
PV-DV53 \$309.99
Special! PV-DV73 \$559.99
PV-DV103 \$344.99
PV-DV203 \$364.99
NEW! SV-AV20 \$229.99
NEW! SV-AV30 \$269.99
NEW! SV-AV100 \$639.99

CANON XL-1S
• 3 CCD
• 7" Color LCD
\$2849⁹⁹



ZR-60 \$314.99
ZR-65 MC \$339.99
ZR-70 MC \$389.99

SONY DCR-TRV950
• 12x Optical Zoom
• 150x Digital Zoom
• 3.5" LCD
\$1409⁹⁹



DCR-TRV250 \$324.99
DCR-TRV350 \$404.99

SONY DCR-IP-220 BT
• 10x Optical Zoom
• BLUETOOTH
• 2.5" LCD
• 2.11 Mega Pixels
\$1099⁹⁹



NEW! DCR-IP1 \$819.99
DCR-IP55 \$879.99
DCR-TRV19 \$449.99
DCR-TRV22 \$494.99
DCR-TRV33 \$564.99
DCR-TRV38 \$609.99
DCR-TRV39 \$609.99
Special! DCR-TRV70 \$839.99
Special! DCR-TRV80 \$979.99

PANASONIC AG-DVX100
• 3-CCD Imaging
• Super VHS
• 12x Optical Zoom
• IEEE-1394
\$2399⁹⁹



NEW! AG-DVX100 Advanced CALL
NEW! SV-AV100 \$649.99
NEW! AG-DV1DC \$709.99
NEW! AG-DVC80 \$1849.99
NEW! AG-DVC7 \$789.99
NEW! AG-DV2500 \$1279.99
AG-DV200 \$3449.99
NEW! AG-EZ500 \$1099.99
NEW! PV-VDRM30 \$579.99

SCANNERS

CANON FS4000
• 5888 x 4000 pixels
• 4000 DPI Optical Resolution
• USB
\$469⁹⁹



NIKON LS50
• High Quality CCD Sensor
• 4000 DPI Optical Resolution
CALL



LS-40 \$409.99

NIKON Super Coolscan LS-5000
• 4,000 dpi Optical Res.
• 2x-linear CCD
• Multiple film format
CALL



LS-8000 \$799.99
LS-4000 \$599.99

PRINTERS

EPSON Stylus 2200P
• USB/Serial Port
• PC or Mac
• 6 Color Small Archival Links
\$539⁹⁹



EPSON Stylus 1280
• Smudge Free Inks
• PC or Mac
\$399⁹⁹



Stylus 3000 \$1179.99

OLYMPUS P400
• Dye-Sublimation
• 314 dpi Res.
• LCD Panel for Previewing
\$299⁹⁹



Policy: Visa, Mastercard, Discover, American Express, Diners Club, Money Orders, Certified Check. (Personal Checks up to 14,000.00 with name and address imprinted on check). C.O.D. orders are also accepted. Orders by mail please print name address and phone number clearly. Shipping methods - in the Continental U.S.A. will be via FedEx, UPS, or Air Mail. Over size items via truck. Shipping and Handling are additional. 21 days for return or exchange (video & digital 7 days) with prior authorization only. (Call customer service for authorization number). Shipping and Handling are not refundable. All returns are subject to a minimum restocking fee of 5%. Prices may reflect mail-in rebate. All returned merchandise must be in new condition and must include all packaging and printed material in original, unaltered condition. Broadway Photo is not responsible for typographical errors. All items are covered by USA, International or Broadway Photo and Video Warranty. Prices subject to change. Please check our website for current prices. All our merchandise is brand new and factory fresh. Quantities are limited. Thank you and enjoy your order.

Free shipping on all orders over

The NEW iMac® G4—now offers up to a 20" widescreen display!

Designed to be the digital centerpiece of your home & the fastest way to the Internet, the new 20" widescreen iMac can show more than two full pages of text & graphics side by side.

- Up to 1.25GHz PowerPC G4 processor
- 256MB of PC2700 (333MHz) DDR SDRAM
- 80GB Ultra ATA/100 hard drive (7200RPM)
- NVIDIA GeForce FX 5200 video card
- Built-in Apple Pro Speakers (7 watts each)

Apple iMac G4 Series

#134966	15"/800MHz/256MB RAM/80GB HD/Combo	\$1,094
#282697	15"/1GHz G4/256MB RAM/80GB HD/DVD/CD-RW	\$1,294
#134978	17"/1GHz/256MB RAM/80GB HD/SuperDrive	\$1,594
#282699	17"/1.25GHz G4/256MB RAM/80GB HD/SuperDrive	\$1,794
#336762	20"/1.25GHz/256MB RAM/80GB HD/SuperDrive	\$2,194



starting at **\$1,094!**
FREE up to 512MB Extra RAM!

The NEW Power Mac® G5!

The Apple Power Mac G5 is the world's fastest personal computer and the first system to feature a 64-bit processor—which means it breaks the 4 gigabyte barrier and can use up to 8 gigabytes of main memory!

- Up to Dual 2GHz PowerPC G5 processors
- Up to 512MB DDR SDRAM (expandable to 8GB)
- 8X AGP Pro Graphics NVIDIA GeForce FX 5200 Ultra or ATI RADEON 9600 Pro Graphics
- Three 133MHz open full-length PCI-X slots



starting at **\$1,794!**
FREE up to 512MB Extra RAM!

Apple Power Mac G5

#283205	1.6GHz G5/256MB RAM/80GB HD/SuperDrive	\$1,794
#283206	1.8GHz G5/512MB RAM/160GB HD/SuperDrive	\$2,094
#326044	1.8GHz G5 Dual/512MB RAM/160GB HD/SuperDrive	\$2,494
#283207	2.0GHz G5 Dual/512MB RAM/160GB HD/SuperDrive	\$2,994

Also Available—Apple Power Mac G4!
#242081 1.25GHz G4/256MB RAM/80GB HD/Combo \$1,294

The iBook® G4—the most affordable G4 notebook ever!

Perfect for everything from doing homework, to playing games and watching DVD



movies, the 4.9-pound iBook G4 fits snugly in your backpack—and your life.

- Up to 1GHz PPC G4
- 256MB RAM
- Up to 60GB hard drive
- 12.1" or 14" display
- Slot-loading Combo Drive (DVD/CD-RW)

starting at **\$1,094!**
FREE up to 384MB Extra RAM!

Apple iBook G4 Series

#301675	800MHz G4/12"/256MB/30GB HD/DVD-CDRW Combo	\$1,094
#301818	933MHz G4/14"/256MB/40GB HD/DVD-CDRW Combo	\$1,294
#301812	1GHz G4/14"/256MB/60GB/DVD-CDRW Combo	\$1,494

All NEW Creative Suite from Adobe®! Plus... must have add-ons!

Adobe® Creative Suite

Photoshop, InDesign, GoLive and Illustrator!

#285425

upgrade from Photoshop **\$749!**
Free Total Training for Adobe Creative Suite!

†Free limited time offer. Call for details.

Adobe® Photoshop® CS

The professional standard for desktop digital imaging!

#283190

upgrade **\$169!**

Call for details.

Toast 6 Titanium

#265457

as low as **\$64^{94!}**

Price after \$20 mfr. upgrade rebate. Price before rebate is \$84.94.

TurboTax Deluxe 2003 for Mac

#298286

Intuit only **\$49^{95!}**

†Save \$30 when purchased with Quicken 2004 (#246356). Call for details.

DVD Studio Pro 2

FREE DMTS: Inside DVD Studio Pro

#267474

upgrade **\$194!**
Call for details.

#194919 Final Cut Pro 4.1 *994!

Adobe® Illustrator® CS

The industry-standard vector graphics software!

#283188

upgrade **\$169!**
Call for details.

Adobe® InDesign® CS

Setting new standards for professional layout & design!

#283186

upgrade **\$169!**
Call for details.

Stuffit Deluxe 8.0 and SystemWorks 3.0

Save \$100 by rebate!

#319578

as low as **\$94^{98!}**
After \$100 mfr. mail-in rebates. Price before rebates is \$194.98. Expires 3/31/04. Call for details.

NEW! TechTool Pro 4

The next generation of diagnostics & repair for your Mac!

#115163

as low as **\$99!**
Call for details.

Microsoft® Office v. X Student and Teacher Edition

#248327

Microsoft only **\$139^{99!}**
Call for details.

*FREE RAM OFFER—An additional \$39.95 MacMall installation fee applies to all models. A \$49.95 MacMall mail-in rebate is required for iMac G4 and PowerBook models. A \$99 MacMall mail-in rebate is required for Power Mac G5 and iBook G4 models. A \$119 MacMall mail-in rebate is required for PowerBook models. **Save up to \$300 on Final Cut Pro and DVD Studio Pro—Save \$300 when you buy both Final Cut Pro 4 and DVD Studio Pro with any Apple computer purchase. Save \$150 when both are purchased without Apple computer. After mfr. mail-in rebates. Expires 2/28/04. ***FREE Carrying Case OFFER—Carrying Case is FREE after redemption of \$29.95 MacMall mail-in rebate. Price before rebate is \$29.95. While supplies last. †FREE SHIPPING OFFER—After MacMall mail-in rebate. Certain restrictions apply. Offer applies to all orders over \$99 Limited time offer. ††FREE Printer-Printer is free after MacMall/mfr. mail-in rebates. Printer may be different than shown. †††FREE SOFTWARE OFFER—Free MYOB FirstEdge requires an additional \$9.95 processing charge. Free Total Training for Mac OS X requires an additional \$9.99 processing charge. Requires AirPort Extreme (AEX) Ready System—AirPort Extreme ready systems are those with mini-PCI support form factor. AirPort Extreme cards cannot be used in older AirPort card bays (PCMCIA form factor slot). All offers valid while supplies last.

Mac OS X v10.3!

New "Panther"—now shipping!

only **\$108⁹⁹!**

#296382

99!†

 Authorized Reseller



MacMall Exclusives!



up to 512MB RAM FREE!
(Up to a \$300 value!)

Available with purchase of select Apple® computer models. MacMall mail-in rebate may apply on select models (\$39.99 installation fee applies to all models).



Save up to \$300 on Final Cut Pro & DVD Studio Pro!

After mfr. mail-in rebate through 2/28/04. See below for details.



FREE Carrying Case!™ (\$29⁹⁹ value!)

With any iBook or 12.1" or 15.2" PowerBook purchase after MacMall rebate. While supplies last. #154909



FREE Printer!™

With purchase of any Apple Computer. After mfr./MacMall mail-in rebates.



FREE Software!†

Free Total Training for Mac OS X #139546 with any MacMall order while supplies last. Free MYOB FirstEdge #638065 with purchase of any Apple computer. Additional processing fee applies to each title.

180 Days Same as Cash!
Call for details.



3 New Models!

Save up to \$565!
On previous PowerBook G4 models! Call today!

NEW PowerBook G4 starting at \$1,594!

Holds up to 10,000 songs!

- Apple iPod!**
- For Mac and PC!
 - Carries up to 10,000 of your favorite songs
 - Holds contacts, text notes and calendars
 - 8-hour li-ion battery
 - An ultra-portable 10, 20 or 40GB HD



FREE Speakers!™

starting at **\$294!**

Apple iPod™ Series

#158577	10GB iPod	\$294
#279745	20GB iPod with FREE Dock and Carry Case	\$394
#279747	40GB iPod with FREE Dock and Carry Case	\$494

Dock shown is sold separately with 10GB Apple iPod model (ask for item #158568). ††A 9.95 processing fee applies.

The NEW Apple PowerBook® G4 gives you the speed of a desktop in a stylish notebook!

Make a statement with the new Apple PowerBook! Carrying a powerful G4 processor, housed in a sleek (1.0" thin) aluminum alloy enclosure and starting at just 4.6 pounds, the PowerBook G4 is one of the strongest and most stylish portable computers around!

Choose from three new ultrafast models—small, medium or epic!

Whether you prefer the ultra-compact 12.1" model, the 15.2" powerhouse or the stunning 17" beauty, every PowerBook G4 is loaded with advanced capabilities like turbocharged PPC G4 processors, up to 1.33GHz, cutting-edge graphics & the DVD-burning SuperDrive™.

Revolutionary design!

- Up to 1.33GHz PowerPC G4 processor
- Up to 512MB PC2700 DDR333 SDRAM
- Slot-loading SuperDrive (DVD-R/CD-RW) or Combo Drive (DVD-ROM/CD-RW)
- Up to 17" Widescreen Active-Matrix Display with a 1440 x 900 maximum resolution

New PowerBook G4 Series

#285765	12.1"/1GHz/256MB/40GB HD/Combo	\$1,594
#285764	12.1"/1GHz/256MB/40GB HD/SuperDrive	\$1,794
#285397	15.2"/1GHz/256MB/60GB HD/Combo	\$1,994
#285399	15.2"/1.25GHz/512MB/80GB HD/SuperDrive/AEX	\$2,594
#285401	17"/1.33GHz/512MB/80GB HD/SuperDrive/AEX	\$2,994

Mention Code: **MACWORLD**

Call 1-800-MACMALL (1-800-622-6255) or visit macmall.com

SEE THE NEW **MACWORLD**
ANNOUNCEMENTS AT
www.macconnection.com/macworld



IMAGINE FUN TOOLS FOR THE



Apple
Authorized
Reseller

Apple iPod with **FREE** 3-pk. of iPod skins

- 10GB model
- Stores up to 2,500 songs

ONLY \$294
#471306



SONY

Sony DCR-DVD 100 Handycam Camcorder

Record straight to DVD

- 10X Optical
- 210X Digital

ONLY \$895
#457720



MINOLTA

Minolta Magicolor 2350EN Laser Printer

- 17ppm Black/4ppm Color
- 9600 x 600dpi

ONLY \$999
#422070

MacConnection®

A PC CONNECTION, INC. COMPANY

the right tools for the right brain™

www.macconnection.com

800.800.3333

CREATIVE MIND

YOUR MIND...OUR TOOLS



Apple iBook 900MHz G3 with **FREE*** Epson C84 Printer

- 900MHz G3 • 256MB RAM • 14.1" TFT
- CD-RW/DVD combo drive
- Mac OS X v10.3 "Panther"

*After mail-in rebates. A \$79 value.

\$999

#441399



Adobe Creative Suite Standard Upgrade

- Photoshop CS • Illustrator CS
- In-Design CS • Version Cue

ONLY **\$549**

#460131

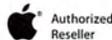


NEW HP ScanJet 4670 Vertical Scanner

- See-thru
- 48-bit Color

ONLY **\$199.95**

#461346



Apple Power Mac G5

- 1.6GHz SuperDrive
- **FREE** 512MB RAM*

ONLY **\$1794**

#453235

*After \$100 mail-in rebate.



SONY

NEW Sony Cyber-shot DSC-F828 Digital Camera

- 8.0 Megapixels
- 7X Optical Zoom
- Carl Zeiss Lens

ONLY **\$999**

#466098

We make the coolest Mac stuff on the planet - period.

For over ten years **Griffin Technology** has created smart, beautiful and original accessories for the Mac and now iPod. Every day we are dreaming up new ways of making you say "Wow."

Here are a few of our ground-breaking accessories to add to your Griffin wish list. From the drop dead beautiful PowerMate to the classic iMic, we set the standard for the coolest Mac stuff in the world.



PowerMate \$45 USB MultiMedia Controller Knob

- Now in Brushed Aluminum and Black
- Great control for iTunes or iMovie
- Programmable for any application
- Replaces repetitive keystrokes



iTrip \$35 FM Transmitter for iPod

- Play your iPod through any empty FM radio station from 87.9 to 107.9
- iPod powered - no battery necessary
- Fits beautifully to top of iPod - no messy cables or hanging dangles



iMic \$39⁹⁹ USB External Sound Card

- Adds stereo audio inputs & output to any USB equipped Mac or PC computer
- Includes everything needed to record albums and tapes to make MP3s & CDs
- Plug-and-Play simple, no install required



iCurve \$39⁹⁹ PowerBook & iBook Stand

- Raises laptop screen to a more comfortable eye-level height
- Creates room on the desktop for an external keyboard and mouse
- Keeps laptop cool with complete 360 degree air circulation

GRIFFIN TECHNOLOGY
www.griffintechology.com

**You read Macworld for the best advice on Mac products...
now visit Macworld Product Finder
for the best prices on the coolest stuff!**

macworldproductfinder.com

**Macworld Product Finder, just one click away
from Macworld.com's trusted product reviews,
features a list of competitive prices
from a variety of online retailers.**

**Finding the right product at the right price
has never been easier!**

**Don't spend hours searching Mac product Web sites.
Shop like an expert!**



Macworld
PRODUCT FINDER



Happy XX Birthday, Mac!

G5
The world's fastest 64-bit personal Computer
G5 1.8 GHz Special!
\$1999

PowerMac G5

- 1.6GHz**
• 800MHz bus & 512K L2 cache • 80GB Serial ATA
• 5256MB DDR333 128-bit SDRAM • 3 PCI Slots
• NVIDIA GeForce FX 5200 Ultra
• SuperDrive (DVD-RW/CD-RW) **\$1,749.95**
- Dual 1.8GHz**
• 900MHz bus & 512K L2 cache • 160GB Serial ATA
• 512MB DDR400 128-bit SDRAM • 3 PCI-X Slots
• NVIDIA GeForce FX 5200 Ultra
• SuperDrive (DVD-RW/CD-RW) **\$2,489.95**
- Dual 2GHz**
• 1GHz bus & 512K L2 cache • 160GB Serial ATA
• 512MB DDR400 128-bit SDRAM • 3 PCI-X Slots
• ATI Radeon 9600 Pro
• SuperDrive (DVD-RW/CD-RW) **\$2,989.95**

LCD Monitors

17" Studio Display
\$689.95

20" Cinema Display
• Widescreen Format
\$1,289.95

23" Cinema HD Display
• Widescreen Format
• High-definition
\$1,979.95

PowerBook G4

12.1" TFT Display 1GHz
• 256MB DDR266 SDRAM • 40GB Ultra ATA
• ComboDrive DVD-Rom/CD-RW **\$1,589.95**
• SuperDrive DVD-R/CD-RW **\$1,789.95**

15.2" Widescreen Display 1GHz
• 256MB DDR333 SDRAM • 60GB Ultra ATA
• DVD-Rom/CD-RW **\$1,989.95**
• ComboDrive

Mac OS X 10.3

All PowerMac G5, PowerBooks, iMacs and iBooks ships with Mac OS X 10.3 Panther installed
Also available separately for **\$129.95**

Visit Our Booth #2345 Ask for our Macworld Expo Specials

- 15.2" Widescreen Display 1.25GHz**
• 512MB DDR333 SDRAM • Backlit keyboard
• 80GB Ultra ATA • AirPort Extreme built-in **\$2,589.95**
• SuperDrive DV-RW/CD-RW
- 17" Widescreen Display 1.33GHz**
• 512MB DDR333 SDRAM • Backlit keyboard
• 80GB Ultra ATA • AirPort Extreme built-in **\$2,949.95**
• SuperDrive DV-RW/CD-RW

Final Cut Pro 4
\$899.95

DVD Studio Pro 2
\$479.95

Soundtrack
\$294.95

We Carry a Full Line of Apple Software!

Keynote
New generation of presentation software that has the ability to create stunning, professional-quality presentations to everyone. **\$95.95**

Final Cut Express
Designed for video enthusiasts working with miniDV, Final Cut Express is a versatile, approachable, & affordable non-linear editing application for expressive video content creation. **\$289.95**

iLife
Software for Digital Music, Photography, Moviemaking and DVD Creation. **\$48.95**

AppleWorks 6
Combines word processing, painting, page layout spreadsheet, database, and presentations. **\$78.95**

.mac
Revolutionize the way you use the internet and your mac. **\$98.95**

<p>Canon EOS Digital Rebel</p>  <p>with 18-55mm EF Lens • 6.3 MegaPixel • 1.6x Factor • CF Type I or II \$999.95</p>	<p>Canon PowerShot G5</p>  <p>• 5 MegaPixel • CF Type I & II</p>	<p>Olympus C-5060</p>  <p>• 5.1 MegaPixel • xD & CF Type I & II</p>	<p>Nikon Coolpix 5700</p>  <p>• 5 MegaPixel • CF Type I & II & Microdrive</p>	<p>Canon PowerShot S400</p>  <p>• 4 MegaPixel • CF Type I</p>	<p>Sony Cybershot DSC-P10</p>  <p>• 5 MegaPixel • MS Media</p>
<p>Wacom Intuos2 Tablets</p>  <p>Graphic Tablets 4x5" \$189.95 6x8" \$299.95</p>	<p>Epson Stylus Photo 7200</p>  <p>• 7 Color UltraChrome Inks • 2880x1140 dpi \$649.95</p>	<p>Canon i9200</p>  <p>• 6 Color Printing • 4800x1200 dpi \$449.95</p>	<p>Microtek ScanMaker 6800</p>  <p>• Flatbed • w/4x5 Slide Adapter • 2400x4800 dpi \$349.95</p>	<p>ColorVision Spyder Pro</p>  <p>with PrintFix Color Calibration \$429.95</p>	<p>Gretag Eye-One Display</p>  <p>LCD & CRT Monitor Calibration \$249.95</p>

420 Ninth Avenue (corner 34th Street) New York, N.Y. 10001

www.bhmac.com

800-926-6372 • 212-444-6790

We Ship Worldwide



Authorized Reseller



iMac G4



15" LCD 1GHz

- 256MB RAM
- Combo Drive
- 80GB Hard drive
- AirPort Extreme Ready
- Bluetooth Ready

\$1,289.95

17" Widescreen LCD 1.25GHz

- 256MB RAM • 80GB Ultra ATA hard drive
- Pro Speakers • 10/100BASE-T Ethernet
- Bluetooth Ready • 4x SuperDrive
- 56K V.92 modem
- AirPort Extreme Ready

\$1,798.95

20" Widescreen LCD 1.25GHz

- 256MB SDRAM • 80GB Ultra ATA hard drive
- Pro Speakers • AirPort Extreme Ready
- Bluetooth Ready • 4x SuperDrive

\$2,189.95

iPod up to 40GB!

10GB iPod

(2,500 songs)

Includes rechargeable battery, AC Adapter
\$294.95

20GB iPod

(5,000 songs)

Includes Remote, Carrying Case with belt clip and Dock
\$389.00

40GB iPod

(10,000 songs)

Includes Remote, Carrying Case with belt clip and Dock
\$489.00



HOT!

iPod Accessories
Belkin Voice Recorder

Belkin Media Reader

- World Travel Adapter Kit.....38.95
- Belkin TuneCast FM Transmitter for iPod.....39.95
- Belkin Battery Pack for iPod (15 Hours).....57.95
- Belkin Auto Charger with Audio Control.....38.95
- Griffin iTrip.....34.95
- Belkin Car Cassette Adapter.....24.95

iSight



High Quality WebCam
The eyes and ears of iChat. Delivers instant, clear live video and audio over the internet.

\$144.95

Wireless Networking
Surf the Internet from almost anywhere in your home or office.

- AirPort Extreme Base Station w/o Modem.....\$199.00
- Base Station w/Modem & Antenna Port.....\$249.00
- AirPort Extreme Card.....\$99.00
- AirPort Card.....\$79.00

Airport Extreme



iBook G4

12" TFT Display 800MHz

- 256MB SDRAM
- 30GB Ultra ATA Hard Drive
- Combo Drive

\$1,089.00

14" TFT Display 933MHz

- 256MB SDRAM
- 40GB Ultra ATA Drive
- Combo Drive

\$1,289.00

14" TFT Display 1GHz

- 256MB SDRAM
- 60GB Ultra ATA drive
- Combo Drive

\$1,489.00



- M8956G/A iBook Battery.....128.00
- iBook Messenger Case.....74.95
- Apple Care 3 Year Extended Warranty Protection Plan.....239.00

Wireless Keyboard & Mouse



Uses Bluetooth wireless technology

- Apple Wireless Keyboard.....\$69.00
- Apple Wireless Mouse.....\$69.00

Adobe Creative Suite

Premium Includes:
Photoshop CS,
Illustrator CS,
InDesign CS,
GoLive CS,
Acrobat 6.0 Professional
Version Cue™

\$1,199.95

Standard Includes:
Photoshop CS, Illustrator CS,
InDesign CS, Version Cue

\$999.95

Photoshop CS

The standard in professional desktop digital imaging
You're in control with features that help Web designers, photographers, and video pros.

\$599.95

upgrade from 7 to CS.....149.95

Extensis

Photo Imaging Suite

Includes:
Portfolio 6
Mask Pro
PhotoFrame
Intelligence Pro



\$499.95



Color Efex Pro!

The complete collection of award-winning, digital photographic filters for making color and light enhancements to any photo.

\$249.95

Avid Authorized Reseller

Xpress DV

Realtime Editing Software with over 100 realtime effects and auto color correction



\$649.95

Sony DCR-TRV33/38



DCR-TRV33 1 Mega Pixel CCD
DCR-TRV38 3.5" Touch Panel LCD

Canon Elura 50MC



Mini-DV Camcorder **\$549.95**

Canon Optura 10/20



Optura 10 2.5" LCD **\$509.95**
Optura 20 3.5" LCD **\$599.95**

JVC GR-D30/70/90



GR-D30 **\$319.95** GR-D70 **\$369.95** GR-D90 **\$399.95**

Canon ZR60/65MC/75MC



ZR60 **\$349.95** ZR65MC **\$399.95** ZR75MC **\$445.95**

Sony DCR-DVD200/300



DCR-DVD200 1 MegaPixel CCD
DCR-DVD300 3.5" Swivel LCD

Formac DVD Writer



External 4x DVD±R Writer
FireWire connection **\$259.95**

LaCie FireWire 800 Drives



External FireWire 800 Drives
Lowest Prices

Maxtor OneTouch Drives



External FireWire Drives up to 250GB
Lowest Prices

Canopus ADVC-100



Analog to Digital Video Converter
\$259.95

Steinberg Nuendo 2.0



Music Production Software

JBL Computer Speakers



Due to Creature
\$54.95 Invader **\$120.00**
\$174.95

Store & Mail Order Hours: Sunday 10-5 • Monday - Thursday 9-7 • Friday 9-1 • Saturday Closed

Digital Cameras

Nikon D2H

Digital SLR Camera Body

- 4.1 megapixels •Up to 2464 x 1632 pixels •Instant on •Continuous shooting up to 8 fps •Accepts CompactFlash™ card or Microdrive™ •2.5" LCD •Voice memo-up to 60 sec. •TTL full-aperture exposure metering •AE bracketing •Shutter speed: 30-sec. to 1/8000th. sec. •USB 2.0

\$3199⁹⁹ (NKN D2H)

Pentax ist D Digital SLR Camera Body

- 6.1 megapixels •Accepts Pentax KAF2-, KAF- & KA-mount lenses •1.8" LCD •Continuous shooting at 2.6 fps •Ultra-small & lightweight body •Accepts CompactFlash™ & Microdrive™ ... (PEN ISTD).....

\$1399.99

Canon EOS-1DS Pro Digital AF/AE SLR Camera Body

- 11.1 megapixels •Up to 4096 x 2704 pixels res. •45-pt. area AF •High-res. CMOS sensor •2" color LCD •IEEE 1394 •Ni-MH battery, charger & DC coupler kit... (CAN EOS1DS).....

\$7195.99



800-559-5504



www.JR.com

J&R EXCLUSIVE!
DOUBLE YOUR MEMORY!
PURCHASE ANY APPLE COMPUTER LISTED BELOW AT J&R & WE WILL DOUBLE YOUR MEMORY FREE!**
**Installation Is Extra.

Digital Camcorders

Sony DCR-VX2100

MiniDV Digital Handycam™ Camcorder

- 3-CCD imaging (1/3" 380,000 pixels each) •Up to 530-line res. •12x-optical/48x-digital zoom •2.5" SwivelScreen™ LCD •i.LINK™ •8MB Memory Stick™ •Manual-zoom ring/shutter speed/exposure dial •Super SteadyShot™ •PCM dig. stereo audio •Wireless remote

\$2499⁹⁹ (SON DCRVX2100)

Samsung SC-D5000 DuoCam™ MiniDV Digital Camcorder

- 4.13 megapixels •Video mode: 10x-optical/800x-digital zoom; Still mode: 3x-optical/6x-digital •Schneider optics •2" LCD •Digital image stabilizer •MPEG4 video clip recording •i.Link... (SAM SC5000).....

\$899.99

Canon XL1S 3CCD Mini DV Digital Video Camcorder

- 1.6x-optical/32x-digital zoom lens •Interchangeable lens system (XL mount) •Color viewfinder •7.2mm filter diameter •3 shooting modes •Programmed AE •PCM digital audio •Rechargeable battery... (CAN XL1S).....

\$3539.00



Apple® MP3 Players

Get \$50 Off Any Apple® Macintosh iPod™

When you sign up for an Audible annual membership for only \$14.95/month. With Audible, you can listen to best-selling novels & newspapers like The New York Times or The Wall Street Journal, plus a whole lot more!



Apple® iPod™

Portable Digital Music Players

- Audio formats: For Mac®: AAC/MP3/MP3 VBR/WAV/AIFF/Audible; For Windows: MP3/MP3 VBR/WAV •Download songs for 99¢ each from the iTunes® Music Store •FireWire™ •For Windows/Mac® 10GB HD, holds 2,500+ songs in AAC format (APP M8974LL/A).....

\$294⁹⁹

20GB HD, holds 5,000+ songs in AAC format (APP M9244LL/A).....

\$394⁹⁹

40GB HD, holds 10,000+ songs in AAC format (APP M9245LL/A).....

\$494⁹⁹

AppleCare® Protection Plan For iPod™ (APP M9404LL/A).....

\$159.99

PNY Memory Cards

128MB CompactFlash™

\$44⁹⁹ (PNY PCF128RF)

128MB SmartMedia™

\$44⁹⁹ (PNY PSF3128RF)



128MB Secure Digital

\$54⁹⁹ (PNY PSD128RF)

256MB CompactFlash™

\$59⁹⁹ (PNY PCF256RF)

Apple® PowerBook® Computers

Apple® Power Mac™ G4/1.25GHz

256/80GB/Combo Drive/GigE

- 1.25GHz PowerPC™ G4 processor •256MB DDR SDRAM •80GB HD •DVD-ROM/CD-RW Combo •10/100/1000BASE-T •v.92 modem •Mac OS® 9/OS X •Monitor sold separately

\$1294⁹⁹ (APP M9145LL/A) + (PNY D256MPC270P)

AppleCare® 3-Year Extended Service Protection Plan For PowerMac® Computers (APP M895LL/A) **\$249.99**



Apple® iMac™ G4/1.25GHz

256/80GB/SuperDrive™ All-in-One Compact Computer

- 20" widescreen TFT LCD •1.25GHz PowerPC™ G4 processor •256MB SDRAM •80GB HD •DVD-R/CD-RW SuperDrive™ •10/100 Ethernet •v.90 modem •Mac OS® X v10.3 Panther™

\$2194⁹⁹ (APP M9290LL/A) + (PNY N256D270PT)

AppleCare® 3-Year Extended Service Protection Plan For iMac® Computers (APP M885LL/A) **\$169.99**

Apple® PowerBook® G4/1GHz

256/60GB/Combo Drive/GigE

- 15.2" TFT •1GHz PowerPC™ G4 •256MB SDRAM •60GB HD •DVD-ROM/CD-RW •10/100/1000 LAN •v.92 modem •Bluetooth™ •Mac OS® X v10.2 Jaguar

\$1994⁹⁹ (APP M8980LL/A) + (PNY N256D270PT)

Apple® PowerBook® G4/1.33GHz

512/80GB/SuperDrive™/GigE

- 17" TFT •1.33GHz PowerPC™ G4 processor •512MB SDRAM •80GB HD •DVD-R/CD-RW •v.92 modem •10/100/1000 LAN •AirPort® Extreme •Bluetooth™ •Mac OS® X v10.2 Jaguar

\$2994⁹⁹ (APP M9110LL/A) + (PNY N256D270PT)

AppleCare® 3-Year Extended Service Protection Plan For PowerBook® Computers (APP M885LL/A) **\$349.99**

©2003 Apple Computer, Inc. All rights reserved. Apple, Apple logo, Macintosh, Power Macintosh & iMac are registered trademarks of Apple Computer, Inc. All other trademarks are the property of their respective owners. All Apple products designed to be accessible to individuals with disabilities. Prices & promotions may not be combined with any other prices & promotions. Offers good while supplies last. PowerPC & the PowerPC logo are trademarks of International Business Machines Corporation used under license therefrom.

Software for Mac®

Adobe® Photoshop® CS

- Get superior results faster with industry-standard Adobe® Photoshop® CS software & its integrated Web production application, Adobe ImageReady™ CS software •Improved file browser •Match color command •Windows/Mac CD

\$594⁹⁹ (ADM PHOTOS) Adobe

Photoshop® CS Upgrade **\$169⁹⁹** (ADM PHOTOS)



HP Laser Printer

Hewlett-Packard LaserJet 4200n

Workgroup Network-Ready Laser Printer

- Ultra-fast •Up to 35 ppm /1200 dpi •300MHz processor •64MB RAM •10/100 print server card •2 paper trays: 600 sheet total •Parallel port •For Windows/Mac

\$1349⁹⁹ (HP Q2426A)



LaCie Hard Drives

LaCie F. A. Porsche Design

- World-class style & performance •The ideal way to back up valuable information, save photos MP3s, video & more •7200 rpm •2MB buffer •Save photos, MP3s & data files •Back up valuable information interface •Stackable



ALL For MAC/PC!

External FireWire® 2.0 Hard Drives

- 10ms average access time •FireWire® (IEEE 1394) interface

80GB Hard Drive..... (LAC 300699U) **\$138.99**

160GB Hard Drives..... (LAC 300702U) **\$189.99**

250GB Hard Drives..... (LAC 300703U) **\$288.99**

External USB 2.0 Hard Drives

- 11ms average seek time •USB 2.0 (1.1 compatible) •USB cable

80GB..... (LAC 300697U) **\$98.99**

40GB..... (LAC 300698U) **\$128.99**

160GB..... (LAC 300700U) **\$188.99**

LaCie Multimedia Drives

LaCie 300722

External FireWire® Dual DVD±RW Drive

- Max.: 4x-write/2x-rewrite/12x-read for DVD, 16x-write/10x-rewrite/32x-read for CD •Chapter feature to jump to favorite scenes •Create custom DVDs in minutes •2MB buffer •Full-featured Toast 6 Titanium recording software •For Mac

\$268⁹⁹ (LAC 300722)

LaCie 300705U External USB 2.0 CD-RW Drive

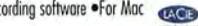
- Designed by F. A. Porsche •Max.: 52x-write/32x-rewrite/52x-read •2MB buffer •80ms access time •USB 2.0 (1.1 compatible) interface •Includes software suite •For Windows/Mac..... (LAC 300705U).....

\$88.99

LaCie 300706U External FireWire® CD-RW Drive

- Designed by F. A. Porsche •Max.: 52x-write/32x-rewrite/52x-read •2MB buffer •80ms access time •FireWire® (IEEE 1394) interface •Includes software suite •For Windows/Mac..... (LAC 300706U).....

\$98.99



Monitors

Sony SDM-HS93

19" TFT Flat Panel LCD Monitor

- 1280 x 1024 pixel native resolution •0.294mm pixel pitch •700:1 contrast ratio •250 cd/m2 brightness •170° viewing angle •Analog connector •25ms response time •Floating frame design •For Windows/Mac •Gray finish

\$749⁹⁹ (SON SDM-HS93/H)



Sharp LL-119D1-B 19" LCD TFT Digital/Analog Monitor

- SXGA 1280 x 1024 max. res. •0.294mm pixel pitch •700:1 contrast ratio •300cd/m2 brightness •Black •For PC/Mac... (SIA LL-119D1-B).....

\$679.99

Formac Gallery 2010 20.1" TFT LCD Flat-Panel Digital Display (ADC/DVI)

- 1600 x 1200 max. res. •ADC for Apple® Power Mac® G4/DVI for Mac/PCs •While Supplies Last... (IFM: 602010-1).....

\$1169.99

Scanners

Hewlett-Packard Scanjet 8250

Digital Flatbed Scanner

- 48-bit color •4800 dpi optical resolution •Auto document feeder for unattended multi-page scanning up to 15 ppm •Scans legal size documents •Built-in transparency adapter •Approx. 4 sec. previews •USB 2.0 •For Windows/Mac

\$779⁹⁹ (HP C9932A)



EPSON Perfection™ 3200 PRO Flatbed Color Scanner

- 48-bit •Up to 3200 x 6400 dpi with Micro Step Drive™ technology •4" x 9" transparency adapter •USB 2.0/FireWire™ •Software... (EPS 3200PRO).....

CALL

Canon CanoScan™ 9900F 48-Bit Color Image Scanner

- Up to 3200 x 6400 dpi •35mm film adapter to batch scan 24 negative frames •FARE™ 2.0 (Film Auto Retouching & Enhancement) •Fast FireWire™ & USB 2.0 •For Windows/Mac... (CAN 9900F).....

CALL

Call
7 Days
Anywhere
In The USA

To Order Toll Free & Receive Our Free Catalogue:

800-559-5504

Park Row • New York, NY 10038 • Fax: 800-232-4432



All Major Credit Cards Accepted
Overnight Delivery Available!

Order Code: MWM 0204

(Prices Effective Thru 2/15/2004)

Not responsible for typographical or pictorial errors. Merchandise is brand-new, factory-fresh & 100% guaranteed! ♦ Except where noted! Some quantities may be limited. Choose 57 at www.macworld.com/getinfo

Blowout Deal on iBook G3 800MHz Only \$799

The iBook G4!

Now with Panther Installed

Up to

1GHz!

G3 iBooks Starting at

\$799!



#156611

The PowerBook

G4-Family

Up to

1.33GHz

Starting At

\$1594



Authorized Reseller

Plus These Great Offers!

FREE!

Up to 512MB RAM

FREE!

EPSON Stylus Color Printer



FREE!

Carrying Case or USB Floppy Drive



on **SAVE!** Up to Final Cut Pro 4 & DVD Studio Pro 2 **\$300**



*Offers available with system purchase and after mail-in rebate(s). Not all offers available on with all systems. See website for details.

The Fastest Desktop On The Planet!

PowerMac G5

Up to

Dual 2GHz!

Starting at

\$1994



The eMac G4

Up to

1GHz!

17.1" Flat CRT Display

Now with Panther Installed

eMacs Starting at

\$794



Apple Panther Mac OS X 10.3

Only **\$108.99**

#296382

Intuit Quicken for Mac 2004

Only **\$69.95**

#246356

Intuit TurboTax Deluxe 2003

Only **\$49.95**

#298286

Adobe Creative Suite

All of the industry's top applications in one!

Upgrades Starting at **\$549**

#285509

GVP XP 800 Series

Aluminum Enclosure!

120GB Only **\$199**

Combo FireWire 800, FireWire 400, and USB 2.0

#291215

HP Deskjet 5150 Inkjets

Only **\$99.99**

#265631

#278103	Epson Stylus CX5400	\$50.00
#265645	Epson Stylus Color C84	FREE*
#131424	Epson Stylus Color Photo 1280	\$379.00
#283654	HP Deskjet 5850	\$249.00
#744192	HP Deskjet 6127	\$249.00

*After Mail-in Rebate and Purchase of an Apple CPU. Ends 2/29/04.

Nikon CoolPix \$399

#644220

Canon EOS Digital Rebel SLR

Lens Not Included **\$899**

#277456

Digital Cameras and Camcorder

#133472	Canon ZR60 Mini DV Camcorder	\$369.00
#132740	Canon ZR70MC Mini DV Camcorder	\$499.00
#537667	Canon GL2 Mini DV Camcorder	\$2,299.00
#137952	Nikon Coolpix 2100 2.1MP 3X/4X USB	\$199.99
#137965	Nikon Coolpix 3100 3.1MP 3X/4X USB	\$299.99

Apple Cinema Display 20" Displays

Only **\$1294**

#130652

#960097	Apple 17" LCD Studio Display	\$694.00
#970382	Apple 23" LCD Cinema HD Display	\$1,944.00
#259776	Sony SDM-593 19" LCD	\$649.00
#363235	Sony Multiscan G520 21" 24mm	\$699.00
#967667	Cornea MP704 17" LCD	\$399.00
#767511	LaCie Electronblue 19" IV 1600X1200 76Hz	\$379.00
#319862	Sceptre X9G 19" LCD	\$529.00
#663867	Formac Gallery 2010 20" LCD	\$1379.00

GVP 120GB External FireWire Hard Drive

Only **\$159**

#505565

Storage

#641667	GVP 200GB External FireWire HD 7200	\$249.00
#105067	GVP 52X/24X/52X External FireWire CDRW	\$109.00
#23446	GVP 100pk 1x DVD-R Media	\$109.95
#138841	LaCie 200GB FireWire 7200rpm	\$279.00
#965972	Equest Cobra FireWire 7200 Ext HD 120GB	\$169.00
#973389	MicroNet Advantage 80GB 7200 RPM HD FW/USB	\$142.99
#153744	Phantom Drives 120GB HD Ext FireWire 7200RPM	\$169.95

Apple DVD Studio Pro 2.0 Upgrade and Full Version

Upgrade **\$194**

Full Version **\$447.29**

Software-Utilities

#283190	Adobe Photoshop CS Upgrade	\$169.00
#279956	Adobe Illustrator CS Upgrade	\$169.00
#283185	Adobe InDesign CS Upgrade	\$169.00
#149570	Apple Final Cut Pro 4	\$994.00

Apple Panther Mac OS X 10.3

Only **\$108.99**

#296382

Software-Utilities/Business

#246356	Quicken 2004 for Mac	\$69.95
#154631	Symantec Norton Antivirus 9.0	\$34.99†
#180519	Symantec Norton Utilities 8.0	\$44.89†
#206067	QuarkXpress 6.0	\$858.99
#180518	Symantec Norton Systemworks 3.0	\$69.89*
#208616	Microsoft Office V. X For Mac Upgrade	\$214.94

*Price After Rebate. †After \$30 Mail-in Rebate.

1-800-260-8549

NO SURCHARGE

ClubMac

WWW.CLUBMAC.COM

E-Mail: cmsales@clubmac.com

Local & International Sales (949) 768-8130

24-Hour Fax (949) 768-9354

ALL PRODUCT INFORMATION AND PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE. NOT RESPONSIBLE FOR TYPOGRAPHICAL ERRORS. WARRANTIES: All items manufactured by ClubMac should be returned to ClubMac for warranty repair. Refer to manufacturer's warranty for Non-ClubMac products. MONEY BACK GUARANTEE: All products manufactured by ClubMac carry a 30 day money back guarantee. RETURNS: ClubMac extends all other manufacturer's return policies to its customers. Call for a Return Authorization (RA) number! Any product that is returned WITHOUT an RA will be refused. NOTE: Non-ClubMac products may be returned for replacement only. Apple Branded Products are not returnable. If you experience problems with your Apple purchase contact Apple 1-800-500-7078.

Source Code: ZMWC402

Choose 98 at www.macworld.com/getinfo



Other World Computing

Serving the Mac Universe since 1988

Excellent service / Competitive prices / Quality products / Expert tech staff

2233
MacWorld
Jan 6-9th 2004

visit macsales.com
800.275.4576

Get more memory to run more of your applications faster! Top quality memory from OWC makes the difference!

PowerMac G5/2.0GHz Dual, G5/1.8GHz, G5/1.6GHz*

You can max your memory to 8GB on the PowerMac G5 1.8 and Dual 2.0!

SPECS: 6 layer low noise, 184pin PC3200 DDR 400MHz, CAS = 3.0

512MB upgrade set \$99
(2 x 256MB matched modules)

1GB upgrade set \$175
(2 x 512MB matched modules)

2GB upgrade set \$599
(2 x 1GB matched modules)

* G5/1.6GHz may also use PC2700 DDR333 DIMMs

PowerMac G4 'Mirrored Drive Door' 867MHz - 1.42GHz

256MB \$39.95 512MB \$84.95

SPECS: 6 layer low noise, 184pin PC2700 DDR 333MHz, CAS = 2.5

* Also for G5/1.6GHz model

Don't see your model listed? Call 800.275.4576 or visit www.macsales.com/memory OWC stocks memory for nearly two decades of Apple Macintosh models! Be it a PowerBook or a PowerMac or a Quadra or a Apple III!

ATA/IDE 3.5" hard drives



for your desktop and towers

- 40GB Maxtor DiamondMax 9 \$59.99**
ATA/133, 7200RPM, 2MB buffer, 1yr warranty
- 80GB IBM/Hitachi Deskstar 7K250 \$74.99**
ATA/6, 7200RPM, 2MB buffer, 1yr warranty
- 120GB IBM/Hitachi Deskstar 180XP \$99.99**
ATA/6, 7200RPM, 2MB buffer, 1yr warranty
- 200GB Maxtor Maxline Plus \$199.99**
ATA/133, 7200RPM, 8MB buffer, 3yr warranty
- 250GB Maxtor Maxline Plus II \$249.99**
ATA/133, 7200RPM, 8MB buffer, 3yr warranty

ATA/133 PCI cards

Add fast ATA/133 technology to your PowerMac! These PCI cards let you add up to 4 drives!

SIIG, Inc. Plug and Play, 5 year warranty

SIIG ATA/133 Mac PCI controller only \$74.99!

SIIG Dual Channel ATA/133 RAID PCI controller \$139.99!

Hardware RAID card for HIGH performance, 5 year warranty

Sonnet Tempo Trio ATA/133 FWUSB Mac PCI controller \$87.95
Plug and Play, 3 year warranty

Sonnet Tempo Trio ATA/133 FWUSB Mac all-in-one PCI \$179.95
Trio adds 3 interfaces using only one PCI slot

OWC takes the guesswork out of upgrading

Need memory?

Make your Mac run faster with a memory upgrade from OWC!

- Lifetime Advance Replacement Warranty
- Fully meets or even exceeds Apple specs
- UPS/FedEx AIR Delivery from \$4

PowerBook G4 15" Titanium; iBook (all models); iMac G4 700MHz & 800MHz; PowerBook G3 FireWire (aka Pismo/00)

128MB \$32.99 256MB \$49.95
512MB \$109.95* 512MB LP \$119.99

* for iMac G4 & PowerBook G3 FireWire

SPECS: PC133/100 operation, 144pin SO-DIMM

PowerBook Aluminum 12/15/17" Models(all); iMac G4/1.0GHz-1.25GHz

256MB \$57.99 512MB \$119.99
1GB PC2100 \$469.99; PC2700 \$599.95

1GB modules let you max your PowerBook G4 up to 2GBs!

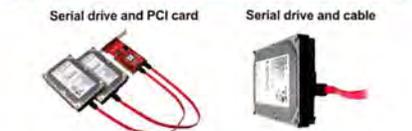
SPECS: 6 layer low noise, 200pin PC2700 DDR 333MHz, CAS = 2.5

Serial ATA/150 drives

- Faster data transfers and true plug n' play!
- 80GB Seagate Barracuda-7 \$99.95**
SATA/150, 8MB buffer, 1yr warranty
 - 120GB Hitachi 7K250 \$125.99**
SATA/150, 8.5ms, 8MB buffer, 1yr warranty
 - 160GB Seagate Barracuda-7 \$169.95**
SATA/150, 8MB buffer, 1yr warranty
 - 250GB Maxtor MaxLine Plus II \$289.99**
SATA/150, 8MB buffer, 3yr warranty

Serial ATA/150 PCI cards

No jumpers. No bulky cables. Just plug and play Serial ATA simplicity & any PCI Mac can have it!



Add up to TWO Serial ATA drives:

FirmTek Serial ATA/150 Mac PCI card \$67.95
Sonnet Tempo Serial ATA/150 Mac PCI card \$97.95

Two channels for high performance RAID or non-RAID operation. Compatible with ANY Apple model with an available PCI slot!

PowerMac G4 AGP Graphics (Sawtooth), Gigabit Ethernet, Digital Audio, QuickSilver 2001 & 2002; iMac G3/350-700MHz, eMac(all)

PC100 CL2 & PC133 CL3
256MB \$49.95 512MB \$109.95
Hi-Performance PC133 CL2
256MB \$59.95 512MB \$124.99

SPECS: PC133 / PC100 SDRAM 168pin DIMMs

PowerMac G3 Beige, G3 Blue and White, G4 'Yikes'

128MB \$34.95
256MB \$49.95 **SPECIAL**

SPECS: PC66/PC100 CL2 168pin SDRAM

Make movies & music

Just add a SuperDrive! From only \$139.99!



Burn DVDs & CDs with Apple iDVD, iTunes, iPhoto, DiscBurner, Roxio Toast, etc! Plug and Play! Available for PowerMac G4s; G4 Cube; PowerBook G4 models

2.5" drives for Apple laptops!

Upgrade to a bigger, faster, quieter drive today!



60GB IBM/Hitachi 7K60 7200RPM \$279.99
7200RPM, 8MB buffer, 3yr warranty

The fastest 2.5" drive ever! Also uses less power and runs quieter than many older model 4200rpm and 5400rpm drives too. More speed and more efficiency!

20GB IBM/Hitachi TravelStar 5K80 \$119.95
5400RPM, 8MB buffer, 3yr warranty

40GB IBM/Hitachi TravelStar 5K80 \$159.95
5400RPM, 8MB buffer, 3yr warranty

60GB Toshiba MK6022GAX \$209.95
5400RPM, LARGE 16MB buffer, 3yr warranty

80GB IBM / Hitachi 80GN \$229.99
4200RPM, LARGE 8MB buffer, 3yr warranty

80GB IBM / Hitachi 5K80 \$289.99
5400RPM, LARGE 8MB buffer, 3yr warranty

School / University / Government / Corporate Purchase Orders gladly accepted. (Subject to credit approval)



Other World Computing

Serving the Mac Universe since 1988

Excellent service / Competitive prices / Quality products / Expert tech staff



VISA MasterCard American Express Discover C.O.D. P.O.
visit macsales.com
800.275.4576

Make your Mac 2x, 3x, 4x, 5x, even 7x faster!

- See real world benchmarks at www.macsales.com/upgrades
- \$\$\$ OWC gives cash back for your old processor too! \$\$\$



Factory Apple G4 performance

Install OWC Mercury Extreme and restart

Get OWC Mercury G4 Extreme performance up to 1.467GHz!

Macworld Oct '03

MacHome Oct '03

MyMac 4 out of 5

MacAddict - 'Solid'

- Plug and play with all PowerMac G4 models 100/133 bus 350MHz to 1GHz (except Cube)
- Large 2MB cache means even more speed!
- Pre-installed cross-air heatsink means cool running and easy installation
- 100% Compatible w/ all Apple Software & OSs!
- 30 day 100% money back guarantee & 3 year warranty lets you buy with confidence!

OWC Mercury G4 Extreme

G4/700-750MHz \$199.99 2MB L3 SD cache	G4/1.25-1.4GHz \$439.99 2MB L3 DDR cache
G4/800MHz \$249.99 2MB L3 SD cache	G4/1.33GHz \$479.99 2MB L3 DDR cache
G4/1-1.2GHz \$369.99 2MB L3 SD cache	G4/1.4-1.467GHz \$539.99 2MB L3 DDR cache

Call for Dual G4 & Cube G4 processor upgrades!

Upgrade your PowerBook G3 to G4

- NuPower Lombard G4/500MHz 1MB 2:1 **\$289.99**
- NuPower Pismo G4/500MHz 1MB 2:1 **\$289.99**
- Crescendo WS G4/500MHz with 1MB 2:1 **\$348.99**
 SIMPLY FAST

OWC XpostFacto
The Power of OS X on Macs NOT Supported by Apple!

macsales.com/OSXCenter

Faster video makes for a faster Mac!

ATI 9000
 ATI 7000

- ATI Radeon 9000 Pro MacEdition AGP w/64MB DDR for PowerMac G4/G5 \$165.99**
More Video Ram = More Performance! ADC/DVI/VGA w/Dual Display Support up to 2048x1536
- ATI Radeon 9800 Pro MacEdition AGP w/128MB DDR for PowerMac G4/G5 \$386.95**
The Latest & The Greatest! ADC/DVI/VGA w/Dual Display Support up to 2048x1536
- ATI Radeon 7000 Pro MacEdition PCI w/32MB DDR for any Mac w/PCI \$119.99**
The Fastest Mac PCI Video Card Available! ADC/DVI/VGA Display Support for up to 2048x1536

NVIDIA
 ATI
 Perfect for Apple OS X and Quartz Extreme

G3 & G4 PCI PowerMac upgrades

Work faster, browse faster, play faster - even run OS X!
* For most PCI PowerMac models, does not use a PCI slot
 * Plug and Play upgrades for 73/75/76/85/86/95/96, UMAX S900/700, compatible PowerComputings

- Crescendo G3/500MHz 1MB L2 \$169.95**
- Crescendo G4/700MHz 1MB L3 \$267.95**
- Crescendo G4/800MHz 1MB L3 \$348.99**

We have upgrades for just about every Mac out there!

<http://www.macsales.com/MyOWC>
Our online guide shows what we have just for your Mac!

Get OS X from only \$19.99!

You are not left behind - ZIF up to 1GHz!

For PowerMac G3 Beige, G3 Blue and White

G3/900MHz \$247.99	G4/700MHz \$347	OWC
G3/1GHz \$CALL	G4/1GHz \$489	G4/450-500MHz \$169.99
	G4/500MHz \$199.99	

School / University / Government / Corporate Purchase Orders gladly accepted. (Subject to credit approval)



Other World Computing

Serving the Mac Universe since 1988

Excellent service / Competitive prices / Quality products / Expert tech staff



VISA MasterCard American Express Discover C.O.D. P.O.
 visit macsales.com
800.275.4576

www.FasterMac.net

High-Speed nationwide Internet

\$8 PER MONTH
 If your paying more, your paying to much.

Get Mac Internet access today - It's easy!
 Visit www.fastermac.net or call 800.275.4576

Accounts include: 5 email addresses,
 10MB web space, and more.



Protect your screen!

The OWC LSPs are precision cut, glove soft leather protectors that prevent potentially permanent marks which can occur from the trackpad and keyboard while your laptop is closed.



Stops marks!

OWC LSP products:

PowerBook G4 17" **\$17.99**



PowerBook G4 15" **\$15.99**



PowerBook G3s **\$14.99**



PowerBook G4 12" / iBooks **\$12.99**



OWC Mobility Bundle #4 for G4 15" PowerBook \$54.95
 LSP for TiG4, LapBottom, and RoadTools Podium Coolpad - Save 25%!

Other bundles available

OWC Mobility Bundle #6 for iBook \$49.95
 OWC LSP for the iBook, LapBottom, and RoadTools Podium CoolPad

High-Capacity PowerBook Batteries

Up to 37.5% more than Apple's!



Wallstreet G3 4500MAH \$139.99



Lombard/Pismo G3 6600MAH \$159.99



\$139.99 G4 'Titanium' 65 watt hour

www.macsales.com/music

Get a wide selection of Mac music tools & use the online discussion forums



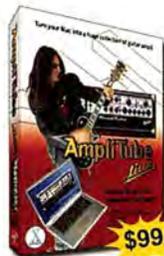
REASON

"Making music has never been easier!"
Reason 2.5 \$379

"Mac to Musical Instrument"



Edirol USB to Midi \$38.99



AmpliTube Live
 Guitar Amp & FX Modeling Software

acally
 Optical 3 Button + Scroll Mouse **\$17.99**

Best Of Show
FOURMANS 2002
 Unreal UT2003 **\$19.99**

acally
 MacAlly iShock2 with force feedback **\$19.99**

GRIFFIN TECHNOLOGY

1G, 2G, 3G iPod iTrip **\$34.99**



ShuttlePRO
 Contour Design Shuttle v2 15 button USB controller for video editing and more **\$119.99**

Keyboard / Monitor switches \$49.95
 Use one keyboard / mouse / display to control multiple Macs!

iSkin keeps stuff out. Many colors to choose from. For iPods from **\$18.99!**
 For PowerBooks and iBook **\$19.99!**



Instant DVD USB \$199.99

From any video source to DVD video



Clean your Apple LCD the right way!

Klear Screen Cleaner



Apple Polish 2 Stage iKlear, 10 for \$7.50
Power Klean LCD 1500 cleanings kit \$23.99

3.6v Mac P-RAM Battery \$5.99

4.5v Mac P-RAM Battery \$7.99



Apple OS X from \$19.99
Apple OS 9.1 from \$34.99

School / University / Government / Corporate Purchase Orders gladly accepted. (Subject to credit approval)



Other World Computing

Serving the Mac Universe since 1988

Excellent service / Competitive prices / Quality products / Expert tech staff



VISA M.C. C.O.D. P.O.
 visit macsales.com
800.275.4576

Top-Rated FireWire 400/800 & USB solutions by OWC



Sits great for vertical placement

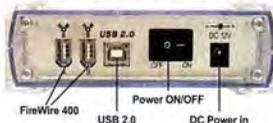


Compact and stacks easy

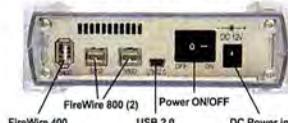
OWC Mercury Elite Pro storage solutions

For all your high-speed storage needs!
www.macsales.com/firewire

BACK PANEL: FireWire 400 + USB 1.1/2.0 model



BACK PANEL: FireWire 800/400 + USB 1.1/2.0 model



OWC Neptune FireWire 400 Solutions

OWC Neptune
 Value done right.

Features the same Oxford911 bridge as our highly acclaimed Elite Pro for all the performance and a value that can't be beat!



60GB 7200RPM 2MB	\$109.99
80GB 7200RPM 2MB	\$119.99
120GB 7200RPM 2MB	\$159.99
160GB 7200RPM 2MB	\$189.99
200GB 7200RPM 2MB	\$239.99
250GB 7200RPM 2MB	\$299.99

Neptune FW Solutions include Dantz Retrospect Express backup software (Mac & PC), Intech Speedtools (Mac), all cables, 1yr OWC Warranty

Awards:



Photoshop User

	Elite FW400 + USB 2.0/1.1	Elite FW800 + USB 2.0/1.1
60GB 7200RPM 2MB	\$139.99	\$NA
80GB 7200RPM 2MB	\$159.99	\$189.99
120GB 7200RPM 2MB	\$179.99	\$219.99
120GB 7200RPM 8MB	\$189.99	\$229.99
160GB 7200RPM 8MB	\$225.99	\$289.99
180GB 7200RPM 8MB	\$269.99	\$299.99
200GB 7200RPM 8MB	\$279.99	\$309.99
250GB 7200RPM 8MB	\$329.99	\$379.99
250GB 5400RPM 2MB	\$299.99	\$329.99
320GB 5400RPM 2MB	\$389.99	\$419.99

All Mercury Elite solutions include: Dantz Retrospect Express (Mac/PC) Intech Speedtools (Mac), all cables & 2 year OWC warranty

Read/Write/Burn CDs and DVDs fast - Plug n' Play Mercury FireWire/USB



Make your own Tune CDs, backup, Audio, Video, & More - 100% iTunes/Discburner Compatible. Plug n' Play with any Apple (or PC) with an available FireWire, USB 1.1, or USB 2 port!



OWC Mercury Pro FW + USB (2.0 & 1.1) CD-R/RW **\$119.99**

52x CD-R write / 32x CD-RW re-writable / 52x CD read **FAST!**
 DragonBurn full featured authoring software, Dantz Retrospect Backup Software, 25 Pieces 80 Minute CD-R, All Cables, 1yr OWC Warranty included



OWC Mercury Pro FW + USB (2.0 & 1.1) SuperDrive PLUS **\$229.99**

4x DVD-R write speed; 2.4x DVD+RW rewrite speed; 2x DVD-RW; rewrite speed; 12x DVD-ROM read speed; 16x CD-R write speed; 10x CD-RW rewrite speed; 32x CD-ROM read speed; 2MB cache buffer

DragonBurn full featured authoring software, Dantz Retrospect Backup Software, 5 Pieces DVD-R 4X Media, 25 Pieces 80 Minute CD-R, All Cables, 1yr OWC Warranty included

Call or Visit www.MacSales.com for our full FireWire/USB line which also includes:



Connect to thousands of new USB and FireWire Products!

FEATURE PRODUCT



Orange Micro OrangeLink **\$49.99**
 2-port FW 400 & 2-port USB 2.0/1.1 PCI

Add FireWire and USB to your legacy PowerMac today! Compatible with 8.6 - 9.2.x and all version of Apple OS X. New with 1yr Orange Micro warranty.



SPECIAL!
 OWC 3-port FW 400 Mac PCI **\$19.99**
 OWC 3-port FW 800/400 Mac PCI **\$69.95**

Plug and Play with any Mac that has an available PCI Slot. Requires Mac OS 8.6 - 9.2.2 or OS X. OS X 10.2.3 or higher required for FireWire 800 operation.



Sonnet Tango **\$75.99**
 2-port FW 400 & 2-port USB 2.0/1.1 PCI

The Tango 2.0 easily installs into an available PCI slot of your computer and features hot-pluggable and hot-swappable device connection with automatic device configuration; no termination or device ID's required.



Century 2-port PCMCIA FireWire Card **\$29.97**
 Add FireWire to any PowerBook G3 WallStreet or Lombard Model. Plug and Play compatible with OS 8.6-9.2.x, Apple OS X.



MacAlly 2-port USB 1.1 PCI Card **\$24.95**
 Add USB to ANY Mac with a PCI slot, Plug and Play compatible with Apple OS 8.5.1 - 9.2.x and OS X.

Build your own FW/USB drive

Case kits include all connecting cables and driving mounting screws



3.5" ATA solution using Elite cases:
 Combo FW400/USB case **\$89.99**



Combo FW400/800 & USB 1.1/2.0 case **\$139.99**



2.5" ATA solution using Express cases:
 Express USB 1.1/2.0 Kit **\$29.95**
 Express FireWire Kit **\$39.99**

Tell us about your Mac...



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

And that's just the beginning! Join the Macworld Reader Panel and participate in surveys for a chance to win cool prizes and get free gifts. Participation is open to all eligible Macworld readers, from beginners to computer experts, and requires only a small amount of time.

To participate and enter our drawing for a Power Mac G5 1.6 GHz*, please visit:

www.macworld.com/surveys/panel/

NO PURCHASE NECESSARY TO ENTER OR WIN. Void where prohibited by law. Drawing is open to all eligible Macworld readers who complete the survey. We must hear from you by 3/29/2004 to be included in the drawing. Winner will be notified by email approximately one week after survey close on or about 4/4/2004. For Official Rules, please visit www.macworld.com/surveys/panel/rules.htm. All information provided will be kept completely confidential and only used in combination with other respondents. Personal information will not be sold, shared or used in any way outside the scope of this research. For more on privacy, visit www.macworld.com/panel/privacy.htm.

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

Macworld

Macworld Showcase Featured Advertisers

OSX Showcase

CodeTek	codetek.com
iProof	iproofsystems.com
Omnipilot	omnipilot.com
Jiiva	jiiva.com

Developer Showcase

Orange Micro	orangemicro.com
Eovia	eovia.com
Data Video Corp	datavideo-tek.com
CValley	cvalley.com
Biomorph Interactive Desk	biomorph.com
Rain Design	igo4mac.com
BackJack	backjack.com/macworld.html
Marathon Computer	marathoncomputer.com
Lind Electronics	lindelectronics.com
Granite Digital	granitedigital.com

Orange Micro	orangemicro.com
Photo Control	photo-control.com
Engineered Audio	engineeredaudio.com
JL Cooper Electronics	jlcooper.com
Gefen	gefen.com
Applelocks	applelocks.com
RadTech	radtech.us/mw
Musitek	musitek.com
Tropical Software	tropic4.com
iSkin	xskn.com
Axio	axio-usa.com
BooqBags	booqbags.com
AstroAge	astro-age.com
Acme Made	acmemade.com
MarkSpace	markspace.com
WiebeTech	wiebetech.com
One Raid	oneraid.com

Trans International	transintl.com
Shreve	shrevesystems.com
Ultralingua	ultralingua.com
Yazsoft	yazsoft.com
Granite Digital	granitedigital.com

Services Showcase

Pressnet Express	pressnetexpress.com
Creative Juices	bigposters.com
Global Print Runner	globalprinrunner.com
Lazarus	lazarus.com
Drive Savers	drivesavers.com
inkfarm	inkfarm.com
Copy Craft	copycraft.com
Postcard Press	postcardpress.com
Zoo Printing	zooprinting.com
Sharpdots	sharpdots.com
Your Mac Life	yourmaclife.com
Wizard Graphics	wizardgraphics.com

AmericasPrinter.com	americasprinter.com
Presentation Services	imagers.com

Direct Showcase

Journey Educational	journeyed.com
MacSupportExperts	macsupportexperts.com
FatCow	fatcow.com
GoGamer.com	gogamer.com
Academic Superstore	academicsuperstore.com
PowerMax	powermax.com
1-800-4-Memory	18004memory.com
Mac Pro	mac-pro.com
Mac Solutions	macsolutions.com
Mac of all Trades	macofalltrades.com
MacResQ	macresq.com
PowerOn Computers	poweron.com
POS Direct	posdirect.com
SeafoodByNet	seafoodbynet.com
MegaMacs	megamacs.com

For more information, contact Niki Stranz or Carol Johnstone at (800) 597-1594.



www.codetek.com

The Best Just Got Better

CodeTek

VirtualDesktop™
 3.0 (Pro or Lite)

The way multitasking is meant to be.

CodeTek Studios and CodeTek VirtualDesktop (pat. pending) are trademarks of CodeTek Studios, Inc., and are registered in some jurisdictions.

OMNIPILOT
AGENCY



★ *Management Software for*
 Ad Agencies • Design Firms • In-House Studios

FREE DEMO & SPECIAL OFFER FOR MACWORLD
 READERS: VISIT WWW.OMNIPILOT.COM/MW
 OR CALL 954.315.0780

OMNIPILOT
 SOFTWARE
 Guiding The Way Creative Companies Work

QuickBooks is a registered trademark and service mark of Intuit Inc. OmniPilot Agency is designed for use with the U.S. versions of QuickBooks Pro Edition 2002 & 2003

**OSX needs PowerRIP X
 for PostScript printing**



Needs it

Has it

PowerRIP X provides 10.3 Panther or 10.2 Jaguar users with accurate color PostScript printing, from Quark 6, InDesign, Illustrator, Photoshop, and FreeHand on 63 different Epson printers or 10 HP printers. The list includes the Stylus Color 3000, Stylus Photo 2200, and in January the new Stylus Pro 4000. More printers than we can list here. *Check our website today for your printer.*

www.iproofsystems.com
 Tel: 321-777-3910

iProof
 SYSTEMS

Got New Hardware?

Permanently remove data from your old Mac with SuperScrubber's military-strength disk sanitization.

And now use AutoScrubber to protect the data on your new Mac every day.

Erase the Risk
SuperScrubber.com



©2003 Jiiva, Inc. All rights reserved.

It's a bird!
It's a plane!

No, it's
iBOT™
FireWire® WebCam



WINNER
LAPTOP
US
ultimate
choice



Faster than a speeding bullet!

Able to capture 640 X 480 pixels at 30 frames per second!

The iBOT plugs into any FireWire® port on your Macintosh and offers you the highest quality video conferencing and video creation. The iBOT, using FireWire® technology, runs up to 10 times faster than current USB1.x webcams. The iBOT works on Mac OS 9 and OS X, and works with Apple's iChat.™

AVAILABLE AT:



shiptoforyou.com

Fry's Electronics

www.orangemicro.com

CARRARA 3™

STUDIO 3D FOR WEB, PRINT AND VIDEO

THE SMART, AFFORDABLE AND TURNKEY 3D SOLUTION

NEW USER: **\$399**
UPG START AT: **\$169**

To Obtain More Info or Download a Trial Version, Go To: www.eovia.com
Call Toll Free: 1.866.856.3775
Email Eovia: info@eovia.com



www.eovia.com **eovia**

See us at Macworld Expo, Booth #2538

Events, Training, Webcasting

Mix 4 Sources

DV, Component
Composite & S-Video

Output

DV, SDI,
Component, Composite
& S-Video

SE-800 VIDEO MIXER



datavideo®

Find a dealer at 562-696-2324
www.datavideo-tek.com

Amazing new Adobe Illustrator® plug-in that lets you grab anywhere on a path!

Draw faster, more naturally! See progress in real time! Reshape paths simply by pulling on them! Here's an example of a leaf made from 2 lines with Xstream Path.

① Begin by pulling out curves.

② Tools show your progress as you go.



③ Pull on segments to make leaf serrations.

④ Create realistic detail by pulling points inward.



Xstream Path's powerful path editing tools will save you time, steps, and help put the focus back on creativity. You might just say goodbye to Bezier handles FOREVER!

Xstream Path
beyond the bounds of Illustrator!

Try all 33 of Xstream Path's powerful tools today!
Get your **FREE DEMO** at: www.cvalley.com



adjustable!

biomorphi
ergonomic desks

free catalog 888 302-DESK
see more at biomorph.com

Choose 161 at www.macworld.com/getinfo



iGo
Your iMac's other half.
Now \$399

Award-winning desk • Halo lamp for showcasing or typing in the dark • Available in both sitting and standing models • Suitable for living rooms, galleries, labs, offices and exhibitions • www.igo4mac.com rain design

Available at major **COMPUSA** stores. Sales / reseller enquiries: Rain Design, San Francisco. Tel: 415 863 3826. Fax: 415 863 3829. sales@igo4mac.com

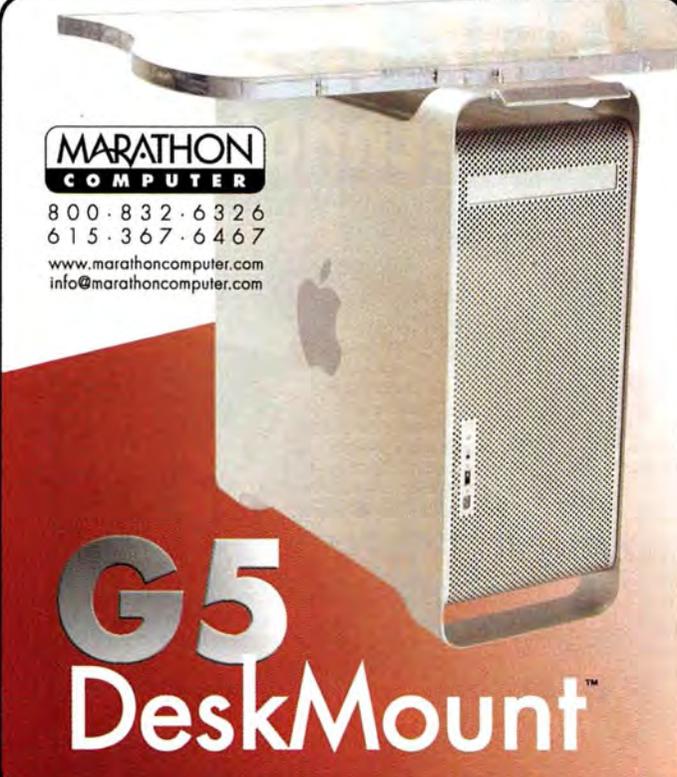
FREE Backups!

BackJack

Online Backup Service

As the leading online backup service for Macintosh, BackJack provides secure, offsite backup of your critical Mac files with unparalleled convenience and reliability.

www.backjack.com/macworld.html
for complete details on 3 months of free subscription fees!

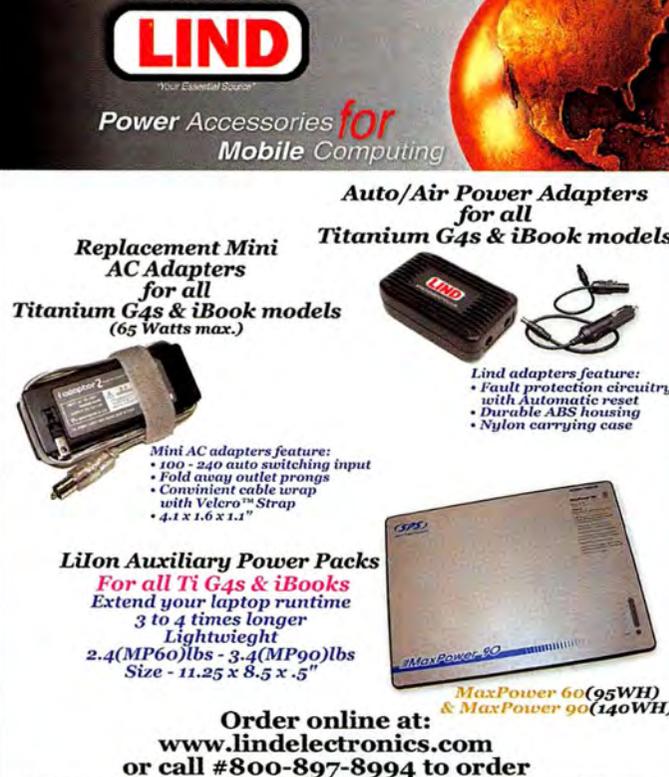


MARATHON
COMPUTER

800-832-6326
615-367-6467
www.marathoncomputer.com
info@marathoncomputer.com

G5 DeskMount™

Choose 164 at www.macworld.com/getinfo



LIND
Your Essential Source

Power Accessories for Mobile Computing

Auto/Air Power Adapters for all Titanium G4s & iBook models

Replacement Mini AC Adapters for all Titanium G4s & iBook models (65 Watts max.)

LiIon Auxiliary Power Packs For all Ti G4s & iBooks
Extend your laptop runtime 3 to 4 times longer
Lightweight
2.4(MP60)lbs - 3.4(MP90)lbs
Size - 11.25 x 8.5 x .5"

MaxPower 60(95WH) & MaxPower 90(140WH)

Order online at:
www.lindelectronics.com
or call #800-897-8994 to order

Lind Electronics, Inc. 6414 Cambridge Street, Minneapolis, MN 55426 #952-927-6303

FireWire, SCSI & USB Drive Systems, Cables, Terminators, Adapters, Testers, Cases and More

FireWire 800 1394-B Hot-Swap Storage



80MB/s Fast Hot-Swap
from **\$259**

FireWire 3 Port Repeater HUBS



40 MB/s and 80MB/s Models Available
from **\$49**

DV - AV - Backup Unlimited Storage



Hot-Swap FireWire / IDE
\$179

SMART FireWire 120 Gigabyte Drive



Safe Reliable Storage
\$269

FireWire 800 1394-B Hard Drives



from **\$279**
80 MB/s Ultra Fast Performance Potential

Gold FireWire 800 1394-B Cables



Ultra High Quality Guarantees Reliability
from **\$17.95**

USB 2.0 Case Kits



480 Megabit/second FAST Data Transfer Rate
from **\$49.95**

SMART FireWire Hot-Swap Backup



Dual Bay System For Easy Drive Backup or Duplication
\$499

FireWire 800 1394-B PCI Host



Uses TI Technology For Speed and Compatibility
\$99

FireWire 120 Gig



7200 IBM 2-Fans Granite Cable
\$199
Fastest Drive

Gold Diagnostic SCSI Cables



SAVE **20%** with Built-in Diagnostics

SCSI RAID Case



Just Add Cables and Drives
8 Bay Save \$50
\$229

SCSI Repeaters Doubles Cable Length



Save **25%**

SCSI Terminator SALE - 50% off



from **\$19.95**
Built-In Diagnostic Monitoring

7200 RPM IBM / Hitachi IDE Drives



\$129
Includes Installation Burn-in and Testing

Granite
D.O.G.I.O.T.A.O.L.
Providing Data Storage Integrity



Whatever your storage needs, Granite has the solution. We offer a complete line of drive systems or all the components for do-it-yourselfers. Go online and see what we mean.

Get our catalog online at www.granitedigital.com

Granite Digital • 3101 Whipple Rd., Union City, CA. 94587 • 510-471-6442-tel • 510-471-6267-fax

Choose 186 at www.macworld.com/getinfo

Upgrade Your Mac with New FireWire 800 Technology

FireWire 800 & USB 2.0

Both Technologies in a single drive!



- 23 Years in Business
- Lifetime Guarantee
- Unlimited Telephone Support

Available at:
www.shipitforyou.com/orangemicro/
www.amazon.com

Notebook 2 port

OrangeLink FireWire 800 for Notebooks

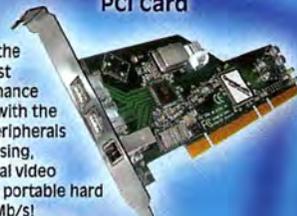
Double the speed of your connection. Add FireWire to your laptop. World's fastest external connection; FireWire 800 outperforms standard FireWire, USB 1.1 and USB 2.0.



Desktop 3 port

OrangeLink FireWire 800 PCI Card

Add the highest performance possible with the FireWire peripherals of your choosing, including digital video camcorders and portable hard drives. Up to 800 Mb/s!



FireWire 800 Cables

Extend or replace your cable reach up to 15 feet! Premium quality cables from Orange Micro are available in 9, 6 and 4 pin connections, 15 ft and 6 ft lengths. A FireWire 800 9-pin to 6-pin adapter also available.



Orange Micro inc.
www.orangemicro.com

BookEndz

DOCKING STATIONS

Convert your PowerBook or iBook to a desktop system in seconds without misplacing cables or damaging connectors.

NEW
15" - G4
PowerBook
Docking Station
Now Available

15" - G4 PowerBook Docking Station

\$244⁹⁵ titanium
\$229⁹⁵ black



iBookEndz Docking Station

\$159⁹⁵ white
\$144⁹⁵ black



- Eliminates cable confusion and damage to connectors.
- New release levers for easier docking and undocking.
- Adds only 3" to rear when docked.
- Also available for G3 PowerBooks.

12" - G4 PowerBook Docking Station \$179

- Aluminum look to match your PowerBook.
- Eliminates cable confusion and damage to connectors.
- All connectors are routed to the rear of the Dock.
- The Dock converts RGB to standard VGA connector.
- Streamlined design complements your PowerBook.
- Use internal or external speakers.
- Easy to use ejection system.



See us at Macworld booth 3927

Check our Web Site for latest product announcements.

BookEndz - Manufactured by Photo Control Corporation
4800 Quebec Ave. N, Minneapolis, MN 55428
Phone: (763) 537-3601 • Fax: (763) 537-2852 • www.photo-control.com

www.bookendzdocks.com



www.engineeredaudio.com

Aurius

USB Audio with FM transmitter



now \$50



\$40

RemoteRemote

Wireless remote control for your iPod

Available Now!

Take control of your money.



Budget

www.snowmintcs.com

Use coupon code CPN9514399118
for **10% off** your order of
any Snowmint product
through eSellerate.
Coupon valid through Feb 29, 2004.

CS-32

MiniDesk USB



- Compact Control for ProTools, DP4 & most MIDI/Audio Software
- 32 Fader Channels
- Compact 9" x 9" x 1"
- OS X and OS 9



Order
Now
\$399.95

www.jlcooper.com

ADC • DVI • CAT-5 • USB • Firewire • HDTV • HDMI
Extenders • Converters • Switchers • Distribution • Adapters • Cables

extend it firewire extender

IEEE1394 Optical Repeater



Extends any
firewire device
using a pair of fiber optic cables
up to 1500 feet away.

extend your world



GEFEN INC.

800-545-6900

818-884-6294

www.gefen.com

APPLELOCKS.COM

High Security for all your Mac needs.
VISIT US @ SF EXPO #724



Innovative Solutions for Today's Digital Lifestyle

PodSleevz™ Form-Fitting iPod Sleeve Case!

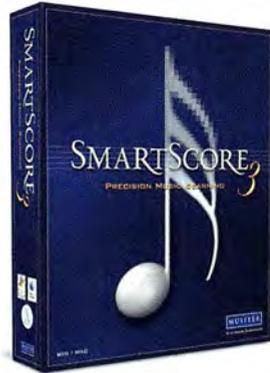
With Optex™—Super Soft, Ultra Tough

- Full wrap-around protection, no display cutouts
- Top-grade, super-clear vinyl display window
- Control your iPod directly through case.

Fits Apple Clip-Case

Macworld **RADTECH™**

6 Colors! **www.radtech.us/mw**



SMARTSCORE 3
PRECISION MUSIC SCANNING

 **Phonebook**
Compact, full-featured contact management

- ✓ Full contact database with free-form notes fields and custom field support
- ✓ Support for up to 8 phone numbers per contact with integrated phone dialing
- ✓ Small footprint – very handy for PowerBooks, iBooks, and small screens
- ✓ Organize contacts by color-coded categories that can be displayed or printed
- ✓ Print envelopes or contact sheets with various styles

1-888-tropic4
www.tropic4.com

Tropical Software
YOUR NEW SOURCE FOR CLASSIC MAC SOFTWARE

SHOWCASE
YOUR PRODUCTS
TO OVER 2 MILLION READERS
*SOURCE: INTELLIQUEST CIMS v. 8.0

Macworld
1.800.597.1594

SMARTSCORE 3
PRECISION MUSIC SCANNING

**The Complete Music Scanning Solution...
Not just half of it.**

"... an indispensable tool for playback, transposing, re-printing and exporting of printed sheet music."

www.musitek.com
800-676-8055

MUSITEK
Music Imaging Technologies®

MacWorld S.F. - Booth #1247



Skn.com

eXo, eXo2, eXo3 are designed and manufactured by Lajo exclusively for Xskn



AXIO
AXIO BY HARO DESIGN

Fuse Networks | 760-557-0123 | ordpack@AXIO-USA.COM
booth 1246_macworld_04



Introducing Boa.XL.
The Fusion of Comfort
and Toughness for
Widescreen PowerBooks.

Boa.XL



Designed with the most demanding PowerBook user in mind, constructed from some of the toughest ballistic nylons, the all-new Boa.XL widescreen backpack offers superb protection for your 15-inch or 17-inch PowerBook and iPod. It offers room for folders, books and all those accessories you'll need on your next urban excursion. With its custom-molded back padding, contoured shoulder strap design and detachable seatbelt-nylon hip belt, Boa.XL fuses toughness and comfort unlike anything you have never experienced before.

Buy it now at www.booqbags.com.
Dealer inquiries welcome.



Designed by Boog in California. ©2003 by Booq. All Rights Reserved. For more information, please visit www.booqbags.com or call 800-446-3966.

MAKE YOUR MAC MOBILE

The essential addition to your G5 or G4 tower

ASTROAGE

www.astro-age.com

patents pending

ACME
MADE
MANUFACTURING
SAN FRANCISCO
EST. 2003 USA

Designed Protection **Acme Made**
order now at www.acmemade.com

The Missing Sync for Pocket PC™



- ▶ **Sync with Mac OS X** Synchronize iCal and Address Book via iSync
- ▶ **Desktop Mounting** Mount your Pocket PC on the OS X Desktop
- ▶ **iPhoto Plug-In** Import/Export Images with your Pocket PC
- ▶ **iTunes Plug-In** Use your Pocket PC as an iTunes Source

also available for Sony CLIE, Garmin iQue 3600 and Samsung I330

visit booth SIP2 at Macworld Expo San Francisco January 6-9, 2004



www.markspace.com

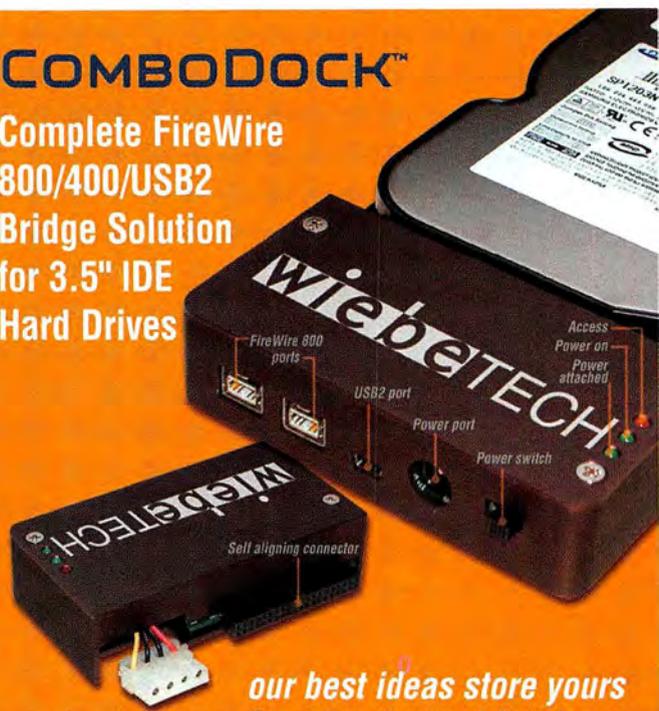


MarkSpace and Missing Sync are trademarks of MarkSpace, Inc. All other product names are trademarks or registered trademarks of their respective holders. Copyright © 2003. All Rights Reserved Worldwide.

Choose 214 at www.macworld.com/getinfo

COMBODOCK™

Complete FireWire
800/400/USB2
Bridge Solution
for 3.5" IDE
Hard Drives



our best ideas store yours

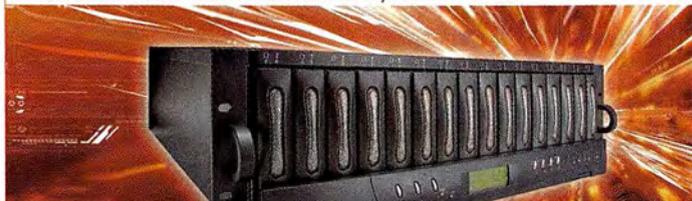
Buy online at www.wiebetech.com

Toll free 1-866-744-8722

ComboDock is a trademark of WiebeTech LLC.

4.8 TERABYTES

OneRaid 1600 - IDE to SCSI 160/320



- 16 Removable Bays
- Dual SCSI 160 or 320 Interface
- Raid Level 0,1,0+1,3,5,6
- Faster than Fibre Channel
- Hot Spare and Hot Rebuild
- Multiple Drive Failure Recovery
- Browser-based Raid Manager
- OS 9 and OS X Compatible

FAULT TOLERANT

The OneRaid 1600 features an array of fault tolerant features including triple redundant 300W power supplies, dual cooling chambers, removable 64-bit RISC powered controller, and recovers from simultaneous multiple drive failures automatically.



866.724.3111

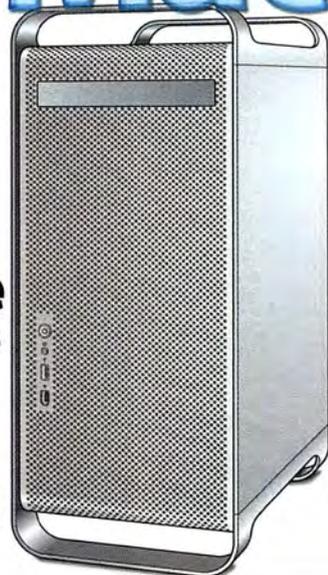
www.oneraid.com

Maximize your Mac

Memory
& Storage
Solutions



transintl.com
Anaheim, CA (800) 783-2120



Over 25 years in business!!

MACS WANTED!!!

We buy, sell & trade macs & mac parts.

800-227-3971

1200 Marshall St., Shreveport LA 71119

ShreveSystems.com



Ultralingua®

Bringing you the
Power of words

Dictionaries
& Grammar
Checkers

www.ultralingua.com



SPEED DOWNLOAD 2

- FIVE STAR award winning utility
- Optimized for Mac OS X Panther
- MacShareware.net integration
- Browse & Search your downloads
- Priority settings, Dock feedback
- ...dozens of other new features

DOWNLOAD YOUR TRIAL COPY NOW!

Over 500,000 copies downloaded and growing!

www.yazsoft.com

YAZSOFT



SAFE and SMART Backup Storage

SMART Hot-Swap Systems Features and Benefits:

- FAST FireWire 1394 40MB/s Data Transfer Rate
- Inexpensive, removable drive trays provide low incremental cost per drive.
- Convenient swapping of drives is perfect for backing up and for managing large projects.
- Supports ATA-6 drives up to 2 TeraBytes.
- S.M.A.R.T. support can predict drive failures before losing data.
- Built in LCD display for reliability monitoring - no host software needed.
- Our patent pending technology guarantees you state-of-the-art products.
- Uses standard IDE/ATA drives; allows you to choose a drive based on size, speed or cost

The new Granite Hot-Swap Drive is the most versatile storage systems on the market. With the low cost of IDE hard drives you can now affordably use hard drives to backup your computer, transport large amounts of data, dedicate drives for projects, and completely eliminate the need for tape drives and other archival systems. It's the ideal solution for your removable storage needs and it is faster than all other types of archival systems.

SMART Hot-Swap RAID / JBOD Systems offer unsurpassed value and reliability

Our RAID / JBOD Systems can be configured with any size drives and are truly Hot-Swappable. Now no matter what your storage or backup needs entail Granite Digital has the affordable solution that fits the bill.



Granite

D·I·G·I·T·A·L

Providing Data Storage Integrity



Standard Tray



SMART Tray

Granite Gold Cables, Adapters, SCSI Terminators, and Components offer the ultimate in quality and reliability



SCSI Cables



FireWire Cables



Adapters



Bridge Boards



Host Adapters

Get our catalog online at www.granitedigital.com

Granite Digital • 3101 Whipple Rd., Union City, CA. 94587 • 510-471-6442-tel • 510-471-6267-fax

Choose 186 at www.macworld.com/getinfo

Postcards and Mailing

Free UV Coating • Printing at 200 LPI
Printing Prices For 4.25" x 6" 12 pt. C1S

Quantity	4/1
500	\$93
1,000	\$109
2,000	\$149
5,000	\$269

PRESSNET EXPRESS

www.pressnetexpress.com
For other printing quotes and mailing services call

858-694-0070

Prices are subject to change without notice.

BIG POSTERS & HUGE DISCOUNTS

FROM YOUR COMPUTER FILES

HIGHEST QUALITY PRINTS AT THE BEST VALUE ANYWHERE • STATE OF THE ART EQUIPMENT • UP TO 80% OFF

24" x 36"	36" x 48"	48" x 72"
Full color print on 7 mil high or low gloss paper	Full color print on 7 mil high or low gloss paper	Full color print on 7 mil high or low gloss paper
\$25	\$50	\$125
NO MINIMUMS VOLUME DISCOUNTS	NO MINIMUMS VOLUME DISCOUNTS	NO MINIMUMS VOLUME DISCOUNTS

FOR MORE INFO & PRICING VISIT OUR WEBSITE
www.BIGPOSTERS.com
CREATIVE JUICES PRINTING & GRAPHICS INC.
100 New York Ave. #104-020333 Fax: (818) 509-4584 • 14 Woodside Rd., Linderoth, NY 11756
1-888-880-HUGE

Choose 177 at www.macworld.com/getinfo

Data Recovery in hours.

Over 16 years of experience with clients worldwide including Apple, NASA, HP, and FedEx.

We've recovered more than 1 million gigabytes of Mac Data alone.

You only pay when there's a recovery.

Express One-Day Service is available.

www.lazarus.com

415-485-3266 • FAX 415-495-5553 • RESTRICTIONS MAY APPLY
379 Clarendon Street • San Francisco, California 94103



LAZARUS
DATA RECOVERY

Working at the speed of business.

800-341-DATA

Full Color Business Cards

2"x3.5" 4/0 or 4/1 14 Pt. C2S UV Coated	2"x3.5" 4/4 14 Pt. C2S UV Coated Both sides
1,000 \$59	1,000 \$89
2,000 \$89	2,000 \$119

Postcards

4"x6" 4/0 or 4/1 14 Pt. C2S UV Coated	4"x6" 4/4 14 Pt. C2S UV Coated Both Sides
1,000 \$129	1,000 \$219
2,000 \$189	2,000 \$249
5,000 \$379	5,000 \$419

Brochures

8.5"x11" 4/4 100# Gloss Book	11"x17" folded to 8.5"x11" 4/4 100# Gloss Book
1,000 \$379	1,000 \$599
2,500 \$399	2,500 \$699
5,000 \$499	5,000 \$799

We Do It All!

Full Color Letterheads • Envelopes • Brochures
Business Cards • Catalogs • Posters • Postcards
Presentation Folders & Much More

Call Us Toll Free

888-666-0744

www.GlobalPrintRunner.com



GLOBAL
PRINT
RUNNER

DATA RECOVERY: 800-440-1904

7 great reasons to choose DriveSavers:



- Fast, advanced, proprietary techniques.
- Recommended and certified by all hard drive manufacturers.
- All operating systems; Mac, Windows, OS/2, Netware and UNIX.
- All storage devices including SAN, RAID and NAS systems.
- Instantly retrieve recovered data with DataExpress™.
- Government Contracts and High Security Service.
- Featured on MacWorld, MacAddict, CNN, BBC, and others.



www.drivesavers.com

Visit DriveSavers at MacWorld, San Francisco

©2003 DRIVESAVERS, INC. 400 BEL MARIN KEYS BLVD., NOVATO, CA 94949 INTL. 415-382-2000

Choose 211 at www.macworld.com/getinfo

ink & toner

- \$4.00 shipping!
- \$2 off: enter promo code "MWX"
- All brands: Alps, Lexmark, HP, GCC, Brother, more!

Epson Glossy Photo Paper

S041134 glossy, 20pk	6.46
S041141 glossy, 20pk	9.12
S041140 glossy, 20pk	9.08
S041145 glossy, 20pk	15.83
S041156 glossy, 20pk	25.84
S041142 glossy, 20pk	26.55
S041143 glossy, 20pk	34.03

Epson Prem. Glossy Paper

S041286 8.5x11, 20pk	15.75
S041290 11x17, 20pk	39.83
S041288 11.7x16.5	41.69
S041289 13x19, 20pk	52.53

HP On Archival

S041341 8.5x11, matte	16.67
S041339 13x19, matte	52.53
S041343 11.7x16.5	41.69
S041331 8.5x11, semi	15.75
S041327 13x19, semi	52.53

HP Photo Paper

C6039a 8.5x11, 15pk	9.26
C6979a 8.5x11, 50pk	27.81
C6058A 11x17, 20pk	37.08
C7007a 2-side matte	13.89
C6983a 2-side semi	6.48
C1846a glossy/matte	9.26

HP Prem. Plus Photo Paper

C6950a 8.5x11, matte	16.67
C6831a 8.5x11, glossy	16.67
C6944a 4x6, glossy	7.41
C7024a 4x6, glossy	18.53

HP Inkjet Cartridges

51645A new	24.61
refilled	17.41
C6578A new	52.91
refilled	27.91
C6578D new	31.91
C1823D new	29.99
refilled	22.99
C1823T new	44.99
C6614 new	26.99
C6615 new	25.91
refilled	19.75

Too much to list...call or visit site.

Epson Inkjet Cartridges

S020093 Orig. Epson	18.95
Inkfarm brand	8.99
S020187 Orig. Epson	21.64
Inkfarm brand	10.75
S020189 Orig. Epson	23.99
Inkfarm brand	9.99
S020108 Orig. Epson	24.75
Inkfarm brand	10.45
S020191 Orig. Epson	21.95
Inkfarm brand	16.25
T003011 Orig. Epson	28.35
Inkfarm brand	15.74
T005011 Orig. Epson	34.29
Inkfarm brand	18.74
T007201 Orig. Epson	20.95
Inkfarm brand	16.75
T009201 Orig. Epson	26.36
Inkfarm brand	16.99
T008201 Orig. Epson	17.51
Inkfarm brand	13.99
T017201 Orig. Epson	23.99
T018201 Orig. Epson	21.95

Too much to list...call visit site.



Too much to list...call or visit site.

1-800-INKFARM
inkfarm.com
the ink & toner supersite.™

You've Never Seen Printing Like This Before!

300 Line Screen Waterless Printing

What you're used to...times 2!

- Presentation Folders
- Letterheads
- Envelopes
- Posters
- CD Inserts & Labels
- Calendars
- Door Hangers
- Stickers
- Table Tents
- DVD Inserts & Labels
- Rotary Cards
- Business Cards
- Postcards
- Catalog Sheets
- Brochures
- Presentation Folders
- Letterheads
- Envelopes
- Posters
- CD Inserts & Labels
- Calendars
- Door Hangers
- Stickers
- Table Tents
- DVD Inserts & Labels
- Rotary Cards
- Business Cards
- Postcards
- Catalog Sheets

100% Satisfaction Guarantee

FULL COLOR BUSINESS CARDS	FULL COLOR 4x6 POSTCARDS
1000 for \$99	1000 for \$149
2000 for \$169*	2500 for \$294
5000 for \$325*	5000 for \$357

Printed 4/0 on C1S 12pt. Super Premium Kromekote with Free Aqueous Coating.
*Each set of 1000 can be different artwork.



Exceptional Quality & Service

LETTERHEADS	OR	ENVELOPES
1000 for \$399		
2000 for \$473		
5000 for \$602		

Printed 4/0 on 70lb. White Hammermill Via Ultra Smooth. Uncoated stock printed at 175 Line Screen.



Fast Turnaround & Quotes

18 x 24 FULL COLOR POSTERS
500 for \$724
1000 for \$794
2000 for \$923

Printed 4/0 on 100 lb. Gloss Text Stock with Free Aqueous Coating.

Quantities from 500 to 1,000,000



1.800.794.5594
806.798.8190 fax



www.copycraft.com
request@copycraft.com

Contact us today for your free full color catalog!

FREE 1000

FREE 1000 postcards with any order of 1000 4x6 postcards or take \$20 off any postcard order above 2000 pieces* offer valid for 1st time customers only - limit 1 per customer - offer expires 02/01/2003

NEW!

IT'S EASY

send your digital file
we'll print your job in
2-3 days!



- ✓ New 2002 Heidelberg Speedmaster Press!
- ✓ Superthick cardstock!
- ✓ New mailing services!



4x6 Postcards			Business Cards			POSTCARD PRESS <i>Uncompromising Customer Satisfaction</i>
Qty	4/1	4/4	Qty	4/0	4/4	
500	95. ⁰⁰	N/A	1,000	60. ⁰⁰	90. ⁰⁰	1-800-957-5787 www.postcardpress.com
1,000	145. ⁰⁰	195. ⁷⁵	2,000	80. ⁰⁰	108. ⁰⁰	
2,000	165. ⁰⁰	222. ⁷⁵	5,000	140. ⁰⁰	189. ⁰⁰	
5,000	289. ⁰⁰	390. ⁷⁵	10,000	250. ⁰⁰	337. ⁰⁰	

TRADE PRINTERS WHO CARE

ZOO PRINTING

NEW 5-COLOR PRESS WITH AQ COATING
NEW 6-COLOR 40" PRESS WITH AQ COATING COMING SOON
FREE AQ Coating, FREE Direct to Plate, FREE Epson Digital Match Proof,
FREE Online Proof. Shipping Available: FedEx, UPS & Trucking

310 253-7751

Fax 310 253-7763 • www.ZooPrinting.com

100% Quality Guaranteed

FLYERS Book	1000	2500	5000	10000
8.5" x 11" 100# Gloss Book	4/0 \$95	\$175	\$225	\$346
+ AQ Coating	4/4 \$195	\$250	\$295	\$465
Brochures Book	1000	2500	5000	10000
11" x 17" 100# Gloss Book	4/0 \$190	\$350	\$450	\$695
+ AQ Coating	4/4 \$390	\$495	\$595	\$850
FLYERS Cover	1000	2500	5000	10000
8.5" x 11" 100# Gloss Cover	4/0 \$145	\$285	\$410	\$739
+ AQ Coating	4/4 \$245	\$370	\$490	\$884
Brochures Cover	1000	2500	5000	10000
11" x 17" 95# Gloss Cover	4/0 \$295	\$515	\$760	\$1215
+ AQ Coating	4/4 \$490	\$665	\$905	\$1455
Postcards	2500	5000	10000	20000
12 point C2s +	4.25" x 6" 4/4 \$185	\$245	\$390	\$750
AQ Coating 1 side	5.5" x 8.5" 4/4 \$280	\$350	\$555	\$1055
	6" x 9" 4/4 \$295	\$395	\$605	\$1155

Mac & Windows • FTP Transfer • All prices subject to change without notice • Same price for 4/1



Image by Steven Parke

EXCELLENT PRINTING

Full Heidelberg Press System featuring 175 line screen, premium paper, easy file uploading and online proofing.

EXCELLENT PRICES

\$199 - 1,000 8.5X11 FLYERS

Excellent for Sales Sheets, POP, etc.

\$1,290 - 2,500 8 PG CATALOGS

Perfect for Annual Reports, Product Catalogs, Sales Booklets, Journals, etc.

\$345 - 1,000 11X17 POSTERS

For Announcements, Bookstore Display, etc.

\$135 - 1,000 4X6 POSTCARDS

For Gallery Shows, Direct Mail, etc.

\$50 - 1,000 BUSINESS CARDS

For Leave-Behinds, Mini Head Shots, etc.

*More Products Available- Call or Visit Our Website Today For Further Details

sharpdots.com

Your Online Resource For All Your Printing Needs

CONTACT US TODAY!

TOLL-FREE: 1-877-742-7789
WEBSITE: WWW.SHARPDOTS.COM
EMAIL: INFO@SHARPDOTS.COM

The Number One Mac Radio Show!

YOUR MAC LIFE
WITH SHAWN KING

Listen live
5:30-8pm PT,
8:30-11pm ET
Wednesdays

Can't listen live?
Archives at:
www.yourmaclife.com

I LISTEN TO
YOUR MAC LIFE
www.yourmaclife.com

BUY ONE GET ONE FREE!

Wizard Graphics

*1,000 Quantity only.
Limit one per customer.
Offer Expires February 1st, 2004

Business Cards 2 x 3.5 - Printed 14 pt. C/2/S Premium grade stock	1,000	2,000	5,000	10,000
4/1	\$50.00	\$70.00	\$130.00	\$220.00
4/4	\$90.00	\$110.00	\$190.00	\$320.00
Post Cards 4.25 x 6 - Printed 14 pt. C/2/S Premium grade stock	1,000	2,000	5,000	10,000
4/1	\$100.00	\$120.00	\$160.00	\$310.00
4/4	\$110.00	\$130.00	\$190.00	\$350.00
Letterhead 8.5 x 11 - 24# bright white 25% cotton 50% recycled	1,000	2,000	5,000	10,000
4/0	\$299.00	\$380.00	\$875.00	\$1500.00

1 (888) 703-3331 • www.wizardgraphicsinc.com



AmericasPrinter.com

The easiest way to print today.

From Film to Finishing, One Price completes the Job!

From 1000 to millions, we get your product printed fast....

We're a 40" Heidelberg® printshop designed to turn your job fast. We print 24 hours a day. We'll print and ship your job anywhere in the USA within 2-3 days from your order and data file.

New Prices
on over 1200 products
New Online Job Tracking
Watch your print job print
your file our finish
americasprinter.com

Business Card
1000
\$49.00
4/1 - 15pt Cardstock w/ UV
2500
\$69.00
4/1 - 15pt Cardstock w/ UV
1000
Trifold
8.5x11
\$299.00
4/4 - 100lb Gloss Book with folding included

Postcard
1000
\$99.00
4/1 - 15pt Cardstock 4.25x5.5 w/ UV Gloss
2500
\$129.00
4/1 - 15pt Cardstock 4.25x5.5 w/ UV Gloss
5000
\$189.00
4/1 - 15pt Cardstock 4.25x5.5 w/ UV Gloss

8.5x11 Sales Sheet
1000
\$159.00
4/0 - 100lb Gloss Book
\$239.00
4/4 - 100lb Gloss Book
1000
11x17 Poster
\$299.00
4/0 - 100lb Gloss Book

714.521.1100 CA • 800.552.1303 toll free
714.521.5650 fax • jobs@AmericasPrinter.com
6940 Aragon Circle, Buena Park, CA. 90620

Discover Imagers

Get a free test sample printed from your file or a hi-res scan from your film.

Check us out for free!

Go to www.imagers.com/free

Overnight Digital Services!

Heidelberg digital offset printing
HP Indigo digital offset printing
Poster prints for indoor/outdoor
Color lasers as low as 30¢ each
Hi-Res scans start @ \$.90 each
Digital photo prints, slide imaging



Digital Printing Center

www.imagers.com

800.232.5411 or 404.351.5800
1575 Northside Dr. Ste. 490 Atlanta 30318

STUDENTS!

Save up to **75% OFF**
popular software!

Thousand Of Titles
Available!!



Adobe
Microsoft
Discreet
Avid
Macromedia
Alias/Wavefront
Softimage
Autodesk
Extensis
Alien Skin
Digimation
Symantec
Corel
ADAM
Wacom
Many More!

FREE CATALOG!
Serving Students, Faculty and Schools Since 1990

1-800-874-9001

www.JourneyEd.com

JourneyEd .COM
Education Marketing

Offer for U.S. & Canadian degree-seeking students only.
Proof of student status required with order.

Choose 174 at www.macworld.com/getinfo

Macintosh Service & Support

Nationwide, On-Site Office & Home
Provided by Local Mac Support Experts

- ◆ Troubleshooting
- ◆ Networking
- ◆ Upgrades
- ◆ Graphics
- ◆ Training
- ◆ Database
- ◆ Digital Video

Mac
Support
Experts

1-877-865-6813

www.MacSupportExperts.com



Introducing a
Beefier Plan at
the Same Low Price

30-Day Money
Back Guarantee **\$99**
a year

The Plan

- 500MB disk space
- 25GB monthly transfer
- 100 email accounts

Featuring

- Shopping Cart
- CGI, PHP
- Toll-Free Support
- Website Statistics

Mini Moo Plan

- Domain Name Parking
- 1 email account
- Coming soon page
- \$20 domain names

\$5
a year

FatCow: The Smart Choice in Small Business Hosting

www.fatcow.com/mac
Toll Free 1-866-506-9572

Looking to save on Games?

Look no further....Go to where gamers go!

GoGamer
.COM

Best Selling Titles In Stock

Start Saving Now....Visit us @ www.gogamer.com

SHOWCASE

YOUR PRODUCTS

TO OVER 2 MILLION READERS

*SOURCE: INTELLIQUEST CIMS v. 8.0

Macworld

1.800.597.1594

STUDENTS, TEACHERS & FACULTY

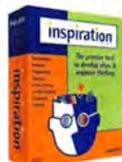
in Elementary, Middle School, High School, & College, Save on Software!



Adobe®
Photoshop CS
Save! 57%
Order Today!
Save on plug-ins too!



Macromedia®
Studio MX 2004
Save! 79%
Now! \$189.⁹⁵
4 Programs - 1 Price



Inspiration®
Inspiration 7.5
Save! 20%
Now! \$56.⁹⁵
Latest Version!



Wacom®
9 X 12 Tablet
Save! 15%
Now! \$399.⁹⁵
New Platinum Color



Parents
CAN CALL
TOO!

Adobe®
Acrobat Pro 6.....**Save 78%**
Illustrator CS.....**Save 82%**
Creative Suite Prem..**Save 69%**
Video Collection.....**Save 60%**
Macromedia®
Flash MX 2004.....\$95
Dreamweaver MX 2004.....\$95
Contribute 2.....\$75

Microsoft®
Office X.....**Save 60%**
Corel®
Painter 8.....\$95
CorelDraw Graphic Ste 11..\$139
KnockOut 2.....\$69
Coda®
Finale 2004.....\$209
PrintMusic!.....\$39

Call Toll Free: 1-800-218-7455
www.AcademicSuperstore.com

**ACADEMIC
SUPERSTORE**
"WORKING HARD FOR EDUCATION"
All Major Manufacturers... All at Huge Discounts!

Choose 180 at www.macworld.com/getinfo

Call the Mac Experts!

REFURBISHED COMPUTERS

Units are factory refurbished with a one year Apple warranty. Buy AppleCare and get a three year warranty and much more!

Always check PowerMax, the nation's leader in Apple factory refurbished sales, for the latest and greatest computer deals!



- eMac® G4/700, 128 MB RAM, 40 Gb HD, CD-ROM \$649
- eMac® G4/700, 128 MB RAM, 40 Gb HD, Combo Drive, 56k modem \$729

Since our Refurbs are so popular, our prices and inventory change constantly. Click or call for our latest pricing and selection!

- PowerBook® G4/867 256 RAM, 40 Gb, Combo Drive, 12" Screen \$1149
- PowerBook® G4/867, 256 RAM, 40 Gb, SuperDrive, 12" Screen \$1349
- PowerBook® G4/867, 256 RAM, 60 Gb, SuperDrive, 12" Screen \$1379
- PowerBook® G4/667, 256 RAM, 30 Gb, Combo Drive, 15" Screen \$1488
- PowerBook® G4/1-GHz, 512 RAM, 60 Gb, SuperDrive, 17" Scr \$2288
- iBook® G3/600, 128MB RAM, 20 Gb HD, CD-ROM, 12.1" screen \$749
- iBook® G3/800, 128MB RAM, 30 Gb HD, CD-ROM, 12.1" screen \$799
- iBook® G3/700, 128MB RAM, 20 Gb HD, Combo, 12.1" screen \$899
- iBook® G3/700, 256MB, 30 Gb HD, Combo Drive, 14.1" screen \$999

Ask about our special prices on Apple displays sold with any new or refurb Mac!

APPLE DISPLAYS

We'll meet or beat any advertised deal on Apple Displays!*

Up to \$100 instant rebate on a new Apple display with any Mac!



USED COMPUTERS

- 7200/120 32MB RAM, 1.2Gb HD, CD \$74
- Beige DT G3/233 160MB RAM, 1Gb HD, CD \$188
- 9600/200 128MB RAM, 4Gb HD, CD \$219
- Beige DT G3/266 192MB RAM, 4Gb HD, CD, Zip \$269
- iMac G3/333 32MB RAM, 6Gb HD, CD \$369
- Blue & White G3/350 128MB, 6Gb HD, CD, Zip \$388
- Add a 17" Blue & White display for only \$99
- G4/400 Tower 128MB RAM, 20Gb HD, DVD \$579
- G4/450 Tower 128MB, 20Gb, DVD-RAM, Zip, 56k \$645
- G4/450 Tower 128MB, 25Gb, DVD-RAM, Zip, 56k \$685

GET A G4 FOR JUST \$679!

These are just a few examples! PowerMax has hundreds of quality, pre-tested used Macs — all with a 90-day warranty!

DIGITAL VIDEO DEALS

- Sony CyberShot U30 2.0 \$198.99
 - HP PhotoSmart 735X1 3.2 \$238.99
 - Minolta Dimage XT 3.0 \$274.99
 - Nikon CoolPix SQ 3.1 \$399.99
 - Sony CyberShot DSC-V1 5.0 \$566.99
 - Nikon CoolPix 5700 5.0 \$798.99
 - Canon EOS Digital Rebel 6.0 \$988
- Mention this ad and receive a pack of 25 FREE CD-RW disks with any camera above!

Only \$995

Upgrade for only \$379!

Your choice **FREE** with Final Cut Pro 4.0 purchase:

- USB Shuttle Pro!
- Post-Op FCP Keyboard!
- 25 DVD-R Media Disks!

Year End Special!

Get **FREE** overnight shipping on any new Apple product under \$500!

Continental USA only. Ask your salesperson for details. Limited time offer.

Landing an Airport can be cheaper than you thought!

Factory Refurbished Specials

- Airport Extreme Card \$79
- Airport Base Station \$149
- Extreme Base Station \$159

Don't forget about the G4 Power Macs! Still up-to-date and fast! And at these prices, how can you go wrong?

- Power Mac G4/867 GHz Dual, 256MB RAM, 60 Gb HD, Combo Drive, 56k modem \$1388
- Power Mac G4/800 GHz Dual, 256MB RAM, 80 Gb HD, SuperDrive, 56k modem \$1488
- Power Mac G4/1.0 GHz Dual, 256MB RAM, 80 Gb HD, SuperDrive, 56k modem \$1499
- Power Mac G4/1.0 GHz Dual, 512MB RAM, 80 Gb HD, SuperDrive, 56k modem \$1599
- Power Mac Dual G4/1.25 GHz Dual, 512MB RAM, 120 Gb HD, SuperDrive, 56k modem \$1769

Check out our huge inventory of pre-owned G4s online!

LOWEST PRICES EVER ON NEW MACS!

iBook Special

New Apple iBook® G3/800-MHz 256MB RAM 30 Gb Hard Drive/CD-ROM \$819

Get 128MB extra RAM installed for just \$25!

- Mag Innovation 15" CRT Display-used \$39
- ViewSonic GS-771 17" CRT Display-used \$69
- Apple Blue & White 17" CRT Display-used \$99
- ViewSonic VP-151 15" LCD Display-used \$199
- Apple Z2" Cinema LCD Display - Used \$1599
- Apple 17" LCD TFT Display - New \$695
- Apple 20" LCD TFT Display - New \$1295
- Apple Z2" LCD TFT Display - New \$1995
- Lacie 19" CRT Display Electron Blue IV \$369
- Lacie Z2" CRT Display Electron Blue IV \$711
- Lacie Z2" Elec. Blue IV Display w/ Calibr \$1078

SUPER SPECIALS!

Huge Savings on New iMacs!

A special allocation of iMacs means tremendous savings for you!

Wow!

Just a sample of the many configs available!

- LCD iMac® G4/800-MHz 256/60/Combo Drive/56k modem, 15" Display \$999
- LCD iMac® G4/1-GHz 512/60/Super Drive/56k modem, 17" Display \$1599

iPods® Galore!

- Get free extra deluxe headphones with every new iPod!
- iPod AppleCare \$59
 - Refurb 5GB \$179
 - Refurb 20GB \$288
 - Refurb 30GB \$349
 - New 20GB \$399
 - New 40GB \$495

Huge Savings on New iBooks

- Ask about the new G4 iBooks in-stock now!
- iBook® G3/800-MHz 256/40/CD-ROM Airport, 12.1" Display \$849
 - iBook® G3/900-MHz 384/60/Combo Airport, 12.1" Display \$1129
 - iBook® G3/800-MHz 640/40/Combo Airport, 12.1" Display \$1149

\$100 Instant Rebate Available!



Trade-In your Old Power Mac for a Super-Fast G5

There's never been a better time to upgrade your computer! Enjoy the power and speed of a new G5 and get a substantial discount off the price with the trade-in of your old G3 or G4!

FREE Printer, speakers & MYOB CD with G5 purchase!

New low prices on the G5!

- POWER MAC G5 1.6 GHZ 256MB RAM 80GB HD SuperDrive/Built-in modem \$1794
 - POWER MAC G5 1.8 GHZ 512MB RAM 160GB HD Combo Drive/no modem \$2098
- Now two choices for dual power!**
- POWER MAC G5 DUAL 1.8 GHZ 512MB RAM 160GB HD SuperDrive/Built-in modem \$2499
 - POWER MAC G5 DUAL 2.0 GHZ 512MB RAM 160GB HD SuperDrive/Built-in modem \$2994

WE TAKE TRADE-INS!

Looking to trade-in your old Mac? We'll take your Mac OS computer in trade toward the purchase of our new product. Call one of our expert Mac consultants for full details.

Custom Macs, Built To Order!

We can upgrade your new Mac with extra hard and optical drives, more RAM, powerful video cards and more. Call our experts and find out how!

GET THE MAC YOU'VE ALWAYS WANTED!

New 20-Inch iMac!

The latest cool offering from Apple is this great new iMac. 1.25-GHz G4 processor and a huge 20-inch display!

Get an extra 256MB RAM for just \$25!

- G4/1.25-GHz 256MB RAM, 80Gb HD, SuperDrive \$2194

STORAGE SOLUTIONS

- LACIE**
- 120GB FireWire d2 HD \$189
 - 200GB 7200 RPM FireWire d2 Hard Drive \$279
 - 200GB 7200 RPM FireWire 800 d2 Hard Drive/USB 2.0 \$339
 - 400GB 7200 RPM FireWire 800 d2 Hard Drive/USB 2.0 \$599
 - Available in DVD+-RW D2 FireWire with Mac Authoring Software \$269

We carry a huge selection of hard drives, CD burners and removable media from all major manufacturers!

POWER MAX

Order Online or Call One of Our Mac Experts!

WWW.POWERMAX.COM

Daily specials & blowouts • Bargain Basement Deals • New, used & refurb lists Digital video packages • Important National Macintosh News Updated Daily!

800-613-2072

Local: (503) 624-1827 • Fax: (503) 624-1635
email: sales@powermax.com

Knowledge is Power

Personal Financing • Fast P.O. Approvals • Business Leasing • Weekly specials on our web site

Are You A Member Of A User Group?

www.appleugstore.com
PowerMax is a division of Computer Stores NW, Lake Oswego, OR.

Macintosh User Group members enjoy access to a very special Apple-sponsored web site featuring super deals on the latest Apple products and more! If you are currently not a member of an Apple User Group and would like access to the MUG Store special offers, discounts, and resources, contact an Apple User Group near you to sign up.

MEMORY for PC and Apple,
Laptops, Digital Cameras,
MP3 Players and more ...

**WE CAN BEAT
Crucial,
Kingston,
Comp-USA,
ANYONE!
AND, WE GIVE YOU
FREE
SHIPPING!**

- ✓ We Manufacture Our Memory Using the Highest Quality Components
- ✓ Lifetime Warranty
- ✓ Compatibility Guaranteed
- ✓ Free Technical Support
- ✓ Experienced Sales Staff Since 1994

www.18004MEMORY.COM

Since 1994

1-800-4-MEMORY

1-800-463-6679

http://www.18004memory.com

MAC-PRO
SYSTEMS & SOFTWARE
www.mac-pro.com



What?

That nice, bright store down at the mall doesn't have parts and stuff for your older Macintosh? Shame on Them!! Call Us Today!

Sign up for our e-mail List at our Web Site!

Any Ad is a Mac-Pro Ad!
800-525-3888

USED MACS



**MAC
OF ALL
TRADES
.COM**

800.304.4639

**BUY or SELL
ONLINE**

sales@macofalltrades.com

Best Prices On

Memory

for all
Apple CPUs

Lifetime Warranty RAM

65 1gb KIT \$129

65 2gb KIT \$589

512mb PC 100 PC 133 \$89

PowerBook® G4 DCR PC 2100/2700 512mb '89

Internal Hard Drives

ATA 133	Capacity	Buffer	
	120gb	8mb	\$ 109
	160gb	8mb	129
	200gb	8mb	199
	250gb	8mb	289

Serial ATA	Capacity	Buffer	
	120gb	8mb	\$ 125
	160gb	8mb	169
	200gb	8mb	229
	250gb	8mb	329

Hard Drive Fire Sale!



External
FireWire 400
w/ Oxford 911



Capacity	Speed	Buffer	Price
120gb	7200rpm	2mb	\$ 149
120gb	7200rpm	8mb	169
200gb	7200rpm	2mb	225
200gb	7200rpm	8mb	235
250gb	7200rpm	8mb	299



www.MACSOLUTIONS.COM
WE BUY USED G3 and G4 CPUs

MacSolutions, Inc. Authorized Reseller Apple Specialist
11933 Wilshire Boulevard, West Los Angeles, CA 90025
Phone: (310) 914-3200 Fax: (310) 966-4433 Ad code 1201
University & School P.D.'s Welcome. Note: Prices subject to change without notice.

800-873-3726

MR
Mac-Res-Q®

Helping You Beat the System Since 1994!
We Stock Parts for Every Mac!

sales@macresq.com • (925) 689-9488 • (925) 689-9487 fax
Items may be new or refurbished. Check our web site for details.
No restocking fees - Return any item within 15 days for a full refund!



PowerBook G4
\$999⁰⁰



PowerBook G3
\$399⁰⁰



PowerMac G4
\$499⁰⁰



iMac G3 DV
\$399⁰⁰



PowerMac G3 B&W + 17" Display
\$399⁰⁰



iPods
10GB \$189⁰⁰
15GB \$289⁰⁰
20GB \$289⁰⁰
30GB \$389⁰⁰



Griffin FM Transmitter
iTrip 1 \$29⁰⁰
iTrip 2 \$34⁰⁰



Shure E2C Earphones
\$79⁰⁰



Sennheiser Wireless Headphones
\$79⁰⁰



Digistor FW DVD Burner
\$299⁰⁰

"SuperDrive" Upgrades!



PowerBooks \$299⁰⁰
or get the drive plus installation, anywhere in the U.S., for just \$399



PowerMacs \$299⁰⁰
fully installed anywhere in the U.S.!

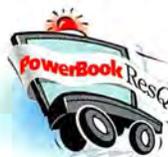


High-Quality Ink at Unbelievable Prices!

Check our site for your printer!

Epson 740 10-Pack Black \$29⁰⁰
Epson 777 10-Pack Color \$69⁰⁰
Epson C80 20-Pack B/C \$129⁰⁰

Sad Mac?



**24-Hour Turnaround +
Nationwide Pickup & Delivery**

One flat rate includes our custom PowerBox, 3-way round-trip overnight U.S. shipping & a detailed diagnostic exam.

only \$99⁰⁰

PowerBook G4 Hinge Replacement: \$499⁰⁰
PowerBook/iBook Hard Drive Upgrade:
80GB: \$399⁰⁰ 60GB: \$299⁰⁰

Includes 3-way overnight shipping & all parts and labor!

1-866-Mac-Repair

888-447-3728 More than 5000 Macintosh products & secure online ordering @ **www.macresq.com/mw**

POWERON

computer services

20% restocking fee on all Returned/Refused items. ALL PRODUCTS ARE USED and/or REPAIRED unless otherwise noted. All sales Power On warranty. All brands and product names are registered to their respective holders and are respectfully acknowledged.

1-800-673-6227

- ### iMac Systems
- iMac 233MHz 64/6GB/CD/ENET/56K \$249.99
 - iMac 333MHz 64/6GB/CD/ENET/56K \$299.99
 - iMac 400MHz 64/10GB/CD/ENET/56K \$399.99

- ### G3 and G4 Systems
- Beige G3 266MHz MT64/4GB/CD/ENET \$299.99
 - G4 400MHz 64/10GB/CD/ENET \$499.99
 - G4 450MHz 64/10GB/CD/ENET \$549.99

- ### Philips Soreost TIVO
- TiVo 20GBHD \$119.99
 - TiVo 80GBHD \$159.99
 - TiVo 120GBHD \$209.99
 - TiVo No HD \$79.99

- ### Printers & Scanners
- H PPhotosmart 1215vm (USB) \$79.99
 - H PPhotosmart 100 (USB) \$119.99
 - H PDeskwriter680c (Serial) \$35.00
 - H PLaserjet4 \$69.99
 - Epson Stylus C42UX \$49.99
 - H PPhotosmart 1000 \$45.99
 - H PScanjet 4400c \$79.99
 - Epson StylusScan 2500 Scanner/Printer \$49.99

- ### Monitors
- Dell 17 Triniton \$69.99
 - NECFE125022 Multiscan \$199.99
 - Nokia 445X Pro 21 Multiscan \$149.99

- ### Miscellaneous
- RC Boat \$9.99
 - Logitech ClickSmart 310 Camera \$29.99

- ### Drives
- Apple 12x SCSI CD-ROM \$19.99
 - Apple 24x SCSI CD-ROM \$29.99
 - Apple 24x IDE DVD \$39.99
 - Apple 5x IDE DVD \$89.99
 - Apple 1x IDE DVD-RAM \$59.99
 - Philips 12x8x32x IDE CD-RW \$39.99
 - Philips 16x10x40x IDE CD-RW \$49.99
 - Apple 16x10x40x Combo \$149.99
 - iMac 24x CD-ROM/lot Load \$109.99
 - iMac 32x CD-ROM/lot Load \$99.99
 - Apple Cube 6x DVD \$99.99
 - 20GB IDE Hard Drive \$29.99
 - 30GB IDE Hard Drive \$39.99
 - 60GB IDE Hard Drive \$69.99
 - 120GB IDE Hard Drive \$99.99
 - 1GB SCSI50 pin Hard Drive \$19.99
 - 9GB SCSI50 pin 1/2 height Hard Drive \$39.99
 - 3.5/5.25 USB 2.0 / Firewire Enclosure \$69.99
 - omega USB 2.0 40x12x48 CD-RW \$69.99

January Special
Apple iBook
32Mb • 388 • 60 • 56K
\$399

PHONE SALES 8am-5pm PST M-F **WWW.POWERON.COM** **WEB SALES** 24 hours / 7 days
8801 Washington Blvd., STE. 101 • Roseville CA 95678

POINT OF SALE / INVENTORY CONTROL

- ### Software
- retail/wholesale
 - mail order
 - service/repair
 - cross platform
 - FileMaker™ Tools
- ### Hardware
- receipt printers
 - cash drawers
 - bar code readers
 - cash drawers
 - mag stripe readers



New ShopKeeper Software interface

Bar Code Scanners starting at \$135.00

Check out our new website, free catalog & demo CD

P.O.S DIRECT • 800.622.7670
sales@posdirect.com • www.posdirect.com
618.457.5351 vox • 618.457.1632 fax

SeafoodByNet.com

Fresh from the sea to your doorstep!

Join our free
Fresh Club Newsletter
for daily fresh deals!
Visit
www.SeafoodByNet.com
or call 815-337-4028



Your store for restaurant quality seafood and meats.

FrameMaker 7.0*
\$399

Systemworks 3.0
\$49

M-AUDIO ROCSTAR
FREE SHIPPING
On all M-Audio and Rocstar products!

WE BUY MACS! We stock many goods!

MEGA MACS

918-664-MACS
fax 918-663-6340 (6227)

Save over \$40! Big CD Bundle only \$49!

AppleWorks 6, Quicken 2002 Deluxe, FaxSTF X, PCalc2, Demos Rising, Otto Metric, Bugdom, NanoSaur, Cre-Mag Rally, WorldBook X, Adobe Pagemill 5, Kai's PhotoSoap SE, Apple iLife including iTunes 3, Photo 2, Movie 3 & iDVD 3

Mac OS X 1.0 - \$39
X2 Jaguar - \$59
X2 upgrade - \$44

w/Intego NetBarrier after \$50 mfr rebate \$89 alone

Carrara Studio 2** \$199

OmniPage Pro X** \$179

Microsoft Office X Bargains

Standard \$279 Professional \$349

Preowned System Specials

Blue & White w/4 500MB upgrade G4/500/128MB/6GB/CD \$399!

Blue & White 17" Studio Display w/G4 or G3 purchase \$499!

Blue & White 17" Studio Display \$399!

Beige DT G3/233/64MB/4GB/CD \$139!

Blue & White G3/300/128MB/6GB/CD/ZIP \$299!

Beige DT G4/500/128MB/4GB/CD/USB \$379!

Graphite G4/450/128MB/20GB/DVD/ZIP \$599!

Graphite G4/450/128MB/20GB/COMBO/ZIP \$669!

Adobe Premiere 6.5 Mac** \$209

MacroMedia Flash MX Bundle includes: Flash MX + Dreamweaver 4 + Fireworks 4 + Freehand 4 only \$249

iLife \$29

.mac only \$79

Harman Kardon 695 Champagne Special Edition Woodgrain Speakers \$59

Keyboards & Mice

Apple Pro Keyboard - \$44 Logitech Cordless \$24 Navigator \$29 Freedom \$12 Touch \$19

Apple Pro Mouse - \$43 Kensington Orbit \$14 Optical Zbutton USB \$14

Final Cut Pro 4 Bundle** \$849
Final Cut Xpress** \$249

Norton/Symantec Bargains

Utilities 4.0/6.0 Antivirus 6.0/7.0 \$7/14 9/14
Internet Security 1.0 or System Works 1.0 \$14

MacroMedia

Dreamweaver MX 2004** \$299
Studio MX 2004 Free Shipping! \$919
Fireworks MX** / Flash 4 \$239/169
Freehand 8/10/MX \$39/149/299

Other Software Bargains

Adobe After Effects 5.5 prod. bundle \$359
Business Plan Toolkit v.7 \$29
Encyclopedia Britannica Rdy Ref 2003 \$6
Web Savant/Timbuktu 2000 set- \$34/29
Office updates 98-/2001/X- \$69/209/199

PCI Cards

USB 1.1 2port \$9 SmartMedia Reader \$15
Asante 10/100 \$11 FireWire Cardbus- \$29
USB 2.0 2 port \$14 GV 28.8/Ethernet \$34
FW 3 port \$17 Zoom 56k modem \$39
USB 2.0/FW 8 port \$49 Supra 56k modem \$39

PCMCIA Cards

USB floppy drive \$37
USB Hubs 47 port \$14/15
119 Geforce 440 32 \$80
\$77 nVidia Ti 4600 128 \$220
\$19 Sonnet G4 iMac \$348

Mac OS

8.1 \$34
8.5- \$89
9.1- \$49
9.2- \$69
X.1- \$39

G3/233 All In One \$119

Archos External Drives

CDRW 8x8x24 FW USB 2.0 \$49
add a USB 2.0 card for only \$9

20g iPod + iTrip \$339

lomega External USB Zip 100 \$28* Zip 250 \$59* Zip 750 \$87* w/USB cable

lomega 80GB USB 2 HDD \$99

USB rollup keyboard \$19

Mac/PC iPods - 10g in storage at \$249

BLOWOUT SEE WEBSITE

40GB Ext. HD FW \$99
40GB Ext. HD FW \$99

9x24x Apple Int.SCSI \$9/99
32x Apple IDE \$19
24x Slimline iMac IDE \$39
6x Apple iMac DVD \$37
Apple 32x10x40x12 IDE \$89

HardDrives - SCSI

9GB LVD Bundle \$99
1GB/4GB from Adaptec 2940U2B Ultra SCSI PCI Card \$55

IDE

15GB Quantum \$44
15GB Apple 2.5" \$79
60GB IBM/Hitachi \$89

Check out our online clearance deals!

* After rebate ** Refurbished, 1 Pre-owned w/30 day warranty, ~OEM, ** upgrade with previous version
#FedEx 3 day/online orders only prices rounded down and subject to change * not responsible for errors * credit cards accepted.

Hot Stuff

The Month's
Coolest
Developments

FROM THE EDITORS OF MACWORLD



SubEthaEdit

Full of the spirit of creativity, this text editor lets you and all your iChat buddies edit a document simultaneously. Sound like fun? That's because it is (free; www.codingmonkeys.de/subethaedit/).

AvantGo USB Sync

This little utility lets you sync your Palm handheld with AvantGo in OS X, a heretofore impossible task if you have a USB cradle (free; http://homepage.mac.com/s_d/malsyncx/malsyncx_en.html).

Desktop Printers in Panther

Drag anything you want to print onto a printer icon on your desktop, and blammo! Out it comes. Plus, this feature makes it much easier to cancel jobs.



VNC

With programs like Chicken of the VNC (<http://sourceforge.net/projects/cotvnc/>), you can connect to remote Macs and control them—for free.

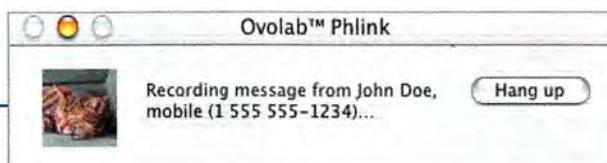


Ice-Link

This ingenious setup from Dension connects an iPod to a stereo through your car's CD-changer interface. And if your car has on-steering-wheel stereo controls, you can control your iPod without having to take your hands off the wheel (\$149–199; www.densionusa.com).

Phlink

Ovolab's Phlink does everything your voicemail can do. Then it does more—like send your voicemail to your Mac via e-mail, let you dictate to your Mac from your cell phone, or run an AppleScript from a phone (\$151; www.ovolab.com/phlink/).



ALTON BROWN
Food Network's (www.foodtv.com) Alton Brown, the host of *Good Eats*, is not just the host of the most entertaining cooking show in existence. He's an unabashed Mac fan—as evidenced by the 12-inch PowerBook G4 that's popped up in numerous recent episodes, replacing his trusty clamshell iBook and Titanium PowerBook. "I am beyond a user—the PowerBook never leaves a 6-foot radius of my body," says Brown, who also uses the PowerBook with Digidesign's Pro Tools and Mbox to record all the show's voice-overs from a home recording studio.

Top-Rated Products

Nov. 2003–Jan. 2004

- ★★★★ After Effects 6.0 Professional (December 2003)
- ★★★★ iSeek 1.0 (January 2004)
- ★★★★ Apple 17-inch PowerBook G4/1.33GHz (December 2003)
- ★★★★ Apple 12-inch PowerBook G4/1GHz (December 2003)
- ★★★★ Apple iSight (December 2003)
- ★★★★ Apple Power Mac G5/dual-2GHz (November 2003)
- ★★★★ Burning Monkey Solitaire 3 (December 2003)
- ★★★★ Business Card Composer (December 2003)
- ★★★★ Digital Performer (January 2004)
- ★★★★ Flash MX 2004 (January 2004)
- ★★★★ Inspiration 7.5 (November 2003)
- ★★★★ Live 2.1 (November 2003)
- ★★★★ MacResponder 1.02 (December 2003)
- ★★★★ Mathematica 5 (January 2004)
- ★★★★ More Internet (November 2003)
- ★★★★ Mystical Lighting (December 2003)
- ★★★★ NASCAR Racing 2003 Season (January 2004)
- ★★★★ PodQuest 1.0.1 (December 2003)
- ★★★★ SightClips (November 2003)
- ★★★★ Soundtrack 1.0.1 (December 2003)
- ★★★★ Toast 6 Titanium (December 2003)
- ★★★★ WarCraft III: The Frozen Throne (November 2003)

For more reviews of Mac products, visit www.macworld.com/reviews/



Bob and Sue use a MAC for business,
 but their accountant uses a PC.
 Do you know what kind of
 accounting software they need?

Hmmm. That could be a problem, but not with MYOB.

Despite their different operating systems, Bob and Sue and their very clever accountant, Nick The Numbers Man, are able to manage finances, create reports, and produce documents as easy as can be.

MAC or Windows—it makes no difference, they don't even have to be in the same place at the same time.

They can do it all by e-mail so quickly that they're able to devote more time to their favorite customers and clients.

Wherever you are, whatever the platform, MYOB is the accounting software that's a smart choice for everyone. It turns everyday accounting and financial management into something that's almost fun.

**MYOB,
 THE SMALL BUSINESS ANSWER.**

©2003 MYOB US, Inc.

(800)322-MYOB www.myob.com/us





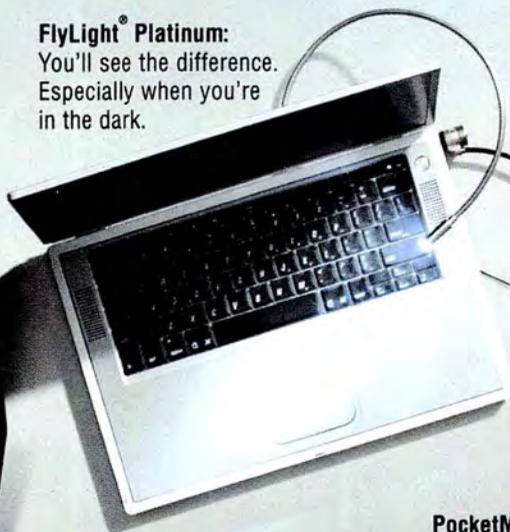
Base model.

FlyLight® Platinum:
You'll see the difference.
Especially when you're
in the dark.

MicroSaver®:
Wherever you go,
it helps ensure
your laptop comes
back with you.



Contour Pro:
Coolly curved comfort fits
life on the move. Protects the
laptop and keeps you organized.



PocketMouse™ Pro: The first
and only palm-sized optical mouse
with an ingenious retractable cord.

Fully loaded.

Isn't it great having options. Whether it's a 10-step telecommute (lucky you). Two glorious days at the satellite office. Or an off-site with your truly wonderful clients. Kensington products help ensure your work experience is, well, less like work. From the inventive PocketMouse Pro that shames other portable mice to our Contour Pro with the right amount of pockets for everything you move with — we extend the performance of your Mac®. And even though your job can be a trip at times, with our products — at least you'll enjoy the ride. Visit us at www.mobile.kensington.com or call 800-235-6708.

Kensington®